

Peculiarities of the Major League Baseball Posting System

Duane W. Rockerbie
University of Lethbridge
Revised July 2007

Abstract

The posting system used in major league baseball to obtain free agent players from Japan has some similarities and many differences from the transfer system used to obtain foreign free agents in European football. This paper uses auction theory to explain the design of the posting system. The unique features of the posting system are found to be a compromise between major league baseball clubs and Japanese clubs. The system maintains lower winning bids than would otherwise be the case, but it prevents foreclosure by rival bidders which could lead to market failure.

Keywords: posting system, baseball, auction theory, collusion

The transfer system in European football is well known and very lucrative for professional clubs. Large amounts of money change hands and world quality players move among clubs such as Real Madrid and Chelsea. Little known to Europe and most of North America is the transfer system used in major league baseball called the posting system. The posting system is currently used only for Japanese players wishing to move to North America (curiously the system does not operate in reverse). The system lacks the suspense and glamour of the European system, but it is growing and it could reach out to other countries in the near future. Indeed, the world took notice in November of 2006 when the Boston Red Sox paid a record \$51 million for the exclusive rights to negotiate with pitcher Daisuke Matsuzaka of the Seibu Lions club. The rules and characteristics of the European transfer market are quite well known to readers of this journal, but the posting system might seem a mystery. Its rules are very different and they were probably set up for different reasons. This paper uses auction theory to explore the differences between the two systems and to assess the efficiencies of the posting system.

The Posting System in MLB

The posting system developed as a result of complaints by Japanese professional baseball clubs following the case of Hideo Nomo. Nomo, a pitcher, wished to leave his Japanese club, the Kintetsu Buffaloes, and play for the Los Angeles Dodgers, but could not secure a release from his contract. Since Nomo could release himself from his Japanese contract by retiring, he did so, and then promptly signed a new contract with the Dodgers in 1995. Many Japanese baseball fans left their interest in Japanese baseball behind to follow the performances of Nomo in North America. The fear was then that the best Japanese players would follow Nomo, resulting in losses in attendance and television ratings in Japan. The posting system was agreed upon by MLB and Japanese baseball (the *Puro Yakyu* or Professional League) as a way to both discourage Japanese players from moving to major league baseball (MLB) and to provide compensation to Japanese clubs. Japanese players who are without contracts in Japan are not subject to the posting system. The system first came into use in the winter of 1999 with the purchase of Ichiro Suzuki by the Seattle Mariners from the Japanese club Orix Blue Wave.

A Japanese player who wishes to leave his Japanese club and move to MLB must notify his club. The club can then agree to place the player on a posting list with any other players on any other Japanese clubs who also wish to move. Nothing prevents a MLB club from discussing the possibility of posting a player with the player's agent before the posting period closes (November to March). The posting list is then provided to the Commissioner of MLB who notifies all MLB clubs of the posted players. Interested MLB clubs submit a sealed bid to the Commissioner's Office within four days. The Commissioner opens the bids and notifies the Japanese club of the amount of the highest bid, but not who the bidding club is. The Japanese club has 30 days to accept or reject the bid and the bid is not subject to negotiation. If rejected, the Japanese club retains the player's rights and the player cannot be posted again until the next off-season. If the bid is accepted, the Japanese player must agree to a playing contract with the winning bidder by the close of the posting period. Only at that time does the Japanese club receive the winning funds. If the player cannot agree to a playing contract, his rights revert back to his Japanese club and no payment is made.

The posting system is not heavily used since only the top Japanese baseball players have any chance of being signed by MLB clubs. Since its inception in November of 1999, only twelve players have used the system and only eight have signed contracts with MLB clubs¹. For the most part, the winning bids are quite low (\$300,000 to \$1 million) compared to European standards, perhaps indicating only a passing interest by the MLB club. Three notable exceptions are the winning bids of \$13 million, \$11 million and \$51 million paid in the years 2000, 2003 and 2006 for the players Ichiro Suzuki, Kazuhisa Ishii and Daisuke Matsuzaka. In these three cases, and most of the others, the player's Japanese clubs were in financial difficulty, requiring the sale of the player to generate needed revenue. MLB clubs are free to bid to their maximum value for the player since the transfer fee does not count towards the team payroll (which is taxed above a threshold level). Revenue sharing is also used with the objective of making the distribution of revenues in MLB more equitable. Any club paying a large amount for a Japanese player,

¹Source: http://www.baseball-reference.com/bullpen/Posting_System

or any other player, will only receive a fraction of the player's contribution towards team revenue.

The rules incorporated in the posting system are in stark contrast to the rules used in the European transfer system. Like the posting system, players can be sold across clubs and the player receives none of the transfer fee. The player must then agree to a new contract with the bidding club before the transfer fee is paid. If unsuccessful, the transfer is voided and the player's rights remain with the original club. Like the posting system, transfers can only be made during specific periods of the year, the months of January and August. Those are the only similarities. The top executive of each countries football league does not get involved in the sale of a player, except to approve the sale in a perfunctory way after all the agreements have been settled. Clubs wishing to sell players can negotiate transfers with any club they choose, although rather oddly, the player's agent is usually involved in negotiating the transfer fee of which the agent may receive a percentage. Players may request to be placed on a transfer list if they wish to leave their club, but clubs may also transfer players without their initial consent. The bidding for players is not restricted to only one bidder and bidding wars are frequent. Transactions are only loosely regulated, if at all, and scandals are frequent².

Major league baseball and Japanese baseball chose to design a very different transfer system from that used in most of the rest of the world. In the next section, we use auction theory to explore the design of the posting system.

An Auction Theory Approach

A private value auction occurs when each bidder has a private valuation of the player's worth that is unique so that there is no common market value attached to the player. In this case, the true value of the player is just equal to the private valuation and the winning

²For a review of the transfer scandal in England in 2006, see http://news.bbc.co.uk/sport1/hi/football/eng_prem/5398006.stm

bidder will be the one with the highest private valuation. Vickrey (1961) showed that the winning bid would be the same regardless of the type of auction (ascending bid, descending bid, first price sealed bid, second price sealed bid) so that the auctioneer and the seller are indifferent between the type of auction. Club owners may very well assign different valuations to the same free agent player since the player's revenue generating potential may differ across clubs. The auction is *efficient* in the sense that the bidder with the highest private valuation will win the auction. We will show that this type of auction fits the European transfer system, but not the posting system in MLB.

Two factors distinguish the posting system: the participation of the Commissioner of MLB as an intermediary in the auction, and; the identity of the winning bidder is not revealed to the Japanese club unless the bid is accepted. The objective of the Japanese club is to receive a bid as high as possible above its reserve price, while the objective of the Commissioner, acting as an agent for MLB clubs, is to insure the winning bid is only slightly above the reserve price. The model developed here follows Jehiel and Moldovanu (1996) and Caillaud and Jehiel (1998) and will show that two critical factors are necessary to explain the posting system: a formalized system of side payments among the colluding clubs - revenue sharing - and revenues that are not part of the revenue sharing arrangement. Side payments are necessary to compensate the losing bidders in the posting system for the anticipated reduction in their winning percentages, and thus revenue.

In MLB, the current revenue sharing arrangement requires each club to contribute approximately 35% of its annual "local revenue" to a central fund managed by the Commissioner's Office. At periodic intervals during the season, each club receives an equal share of the central fund. Local revenue includes mostly gate revenue and some concession revenue (food, parking, etc.), but excludes revenue from luxury suites, local radio and television broadcasting and some other revenues. Hence the revenue sharing system is a formal and enforceable arrangement for making side payments. The marginal revenue product of any newly acquired player is partly shared with all other clubs in the league so that the negative externality imposed on other clubs is partly eliminated.

Collusion takes the form of a sort of pre-auction among MLB clubs that determines which club will make the winning bid, what the winning bid will be, and the amount of side payment that is required to each losing member of the bidding cartel. The side payment is necessary to compensate the losing bidders for the loss in revenue they may experience by allowing the winning bidder to improve his or her club (assuming that revenue is a function of winning percentage). The revenue sharing system used in MLB is a formal, but imperfect mechanism to facilitate the necessary side payments. The identity of the winning bidder is concealed from the Japanese club since this information contains a valuable rent – a more accurate estimate of the non-local revenue of the winning bidder that might be extracted by the Japanese club.

Setup of the Model

There exist n clubs from a total of N clubs in a league ($n \leq N$), indexed by $i = 1, \dots, n$, bidding to purchase a single player from a single seller (the Japanese club). Each buyer places a private valuation, v_i , on the player ideally equal to the player's discounted lifetime marginal revenue product for the club. For a given player for sale, the distribution of valuations is assumed to be uniform with known upper and lower limits, however the position of a specific club's valuation within the distribution is not known. We assume that the distribution of private valuations is independent of the type of auction (collusive or non-collusive). The attributes of the player to be sold that determines each v_i can be obtained at zero cost. The seller places a reserve price of R on the player so that any bid below R will not be successful.

Losing bidders suffer an externality that we assume is not identical for all losing bidders. The magnitude of the externality is assumed to increase the greater is the v_i for the winning bidder. This runs contrary to the existing auction literature, but we feel it is appropriate due to presence of diminishing marginal revenue product with winning percentage. The nature of sporting contests is that for one club to be more successful, others must be less successful. Other clubs then move down their concave revenue schedules at increasing rates and the externality becomes larger.

For now, we assume an auction without side payments. Without a side payment (revenue sharing), all losing bidders will prefer that the player not be sold. The winning bidder will obtain a net profit of $v_i^{\max} - b_i^{NC}$, where b_i^{NC} is the amount of the winning bid ($b_i^{NC} \geq R$) in the non-collusive auction. Any losing bidder incurs a loss equal to the monetary value of the externality that is commonly known. We also assume that non-local revenues are zero, however we relax this assumption in a later section.

The European Transfer System

We use the European transfer system as the base case. The European transfer system can best be described, using the terminology of Vickrey (1961), as an ascending bid auction where the winning bid (indexed i) is just slightly higher than the second highest bidder (indexed $i-1$) and less than the winning bidder's valuation ($v_{i-1} < b_i^{NC} < v_i$). Unlike the baseball posting system, football clubs are free to negotiate with each other for transfer fees within the two transfer "windows". If negotiations break down within the transfer window, teams are free to re-enter the transfer market and negotiate a transfer fee with any other interested bidder. The results of an ascending bid auction without collusion are well known. In a public value auction, Milgrom and Weber (1982) showed that an ascending bid auction will generate the greatest winning bid and the smallest winner's curse. The auction is *efficient* in the sense that the bidder with the highest private valuation will win the auction. This keeps the player's surplus in the hands of the owners who will ideally be willing to bid up to the anticipated surplus. This also keeps player salaries lower than would otherwise be the case with North American type free agency since winning bidders may suffer a winner's curse and will have less money left over for salaries.

Collusive Bidding

We now develop an auction model with collusive side payments. The bidding model is a three-stage game. In *stage 0*, each buyer formulates his or her v_i based on costless information about the player to be sold. In *stage 1*, the bidders play a collusion subgame

during which they choose a set of bids to submit to the auction (one of which is known to the bidders as the winning bid) and on the distribution of side payments. In *stage 2*, the Commissioner selects the highest bid as the winning bid and informs the seller without revealing the identity of the winner. At this point, the seller may accept or reject the winning bid. We do not explicitly model the bargaining process between the Japanese player and the winning bidder as this process is symmetric to the European transfer system.

We focus on stage 1 of the bidding model as this largely determines the outcome for the stage 2. Without defection by any of the bidding clubs, the collusive subgame in stage 1 will result in *ring efficiency* (Graham and Marshall (1987)) if the side payments to all clubs sum to zero (the winning bidder cannot borrow to make the necessary side payments). Side payments are automatically collected and paid through a revenue sharing system where each club is allowed to keep a share equal to α of its local revenues ($0 \leq \alpha \leq 1$). Ring efficiency requires that the net profit for the winning bidder be the maximal winning profit among all bidders after all side payments have been paid, thus the ring efficiency condition is

$$\alpha v_i^{\max} + \frac{1-\alpha}{N} v_i^{\max} - b_i^C = \gamma v_i^{\max} - b_i^C \geq R \quad (1)$$

where $\gamma = ((N-1)\alpha + 1)/N < 1$ and b_i^C is the collusive bid. It will be in the best interest of the losing bidders to select the bidder with the highest valuation to “win” the auction and to “arrange” a b_i as close to R as possible in order to guarantee the ring efficiency condition is met. If this does not occur, an ascending bid auction will take place during the pre-auction in stage 1 so that bidding club with a private valuation equal to v_i^{\max} will prevail. It is also required that the winning bidder be at least as well as off by colluding as by not colluding, although this is a weak condition since abandoning revenue sharing requires a super-majority vote of owners (Easton and Rockerbie (2005)).

$$\mathcal{W}_i^{\max} - b_i^C > v_i^{\max} - b_i^{NC} \quad (2)$$

Condition (2) simplifies to

$$(1 - \gamma)v_i^{\max} < b_i^{NC} - b_i^C \quad (3)$$

which states that the increase in the bid by not colluding must exceed the post-revenue sharing local revenue to maintain ring efficiency. The winning bid will fall within the interval $R \leq b_i^C \leq \mathcal{W}_i^{\max}$.

Foreclosure of Collusive Bidding

There is a potential for the collusive agreement in stage 2 of the game to fail if one of the losing bidders overstates his or her private valuation of the player for sale. We refer to this situation as *foreclosure*. Foreclosure means that one bidder prevents the bidder with the highest private valuation from obtaining the rights to negotiate with the Japanese player, even though the winning bidder has no intention of signing the player to a contract. Formally we state this situation is $v_j > v_i^{\max}$ for $j \neq i$. This strategy could be used by one of two or more clubs that are strong rivals, for instance, the Boston Red Sox and the New York Yankees. The Red Sox owner simply submits a sealed bid that is inflated beyond the “arranged” bid submitted by the owner of the Yankees³. Since the Red Sox owner has no intention of signing the Japanese player to a contract, but merely wishes to prevent the Yankees from obtaining the player's negotiation rights, the size of the winning bid b_j has no relevance. The Japanese player cannot re-enter the posting system until the next off-season, so the foreclosure is effective and costless.

Foreclosure can only occur in the bidding model if the externality is not identical for all

³Economics suggests that the owner of the Yankees will submit a bid that has an upper bound equal to the anticipated surplus that the player will generate over and above the anticipated salary.

clubs, but instead there exists a distribution of values for it. It is purely mechanical that low revenue clubs experience a net increase in revenues after revenue sharing, while high revenue clubs experience a net decrease. Using the Red Sox - Yankees example, if the Yankees acquire the rights to the player up for auction, the best compensation the Red Sox will receive is a 1/30 share of the increase in revenue the Yankees experience from the new player. This might not be enough to compensate for the reduction in the Red Sox revenue since the two are close divisional rivals. Conditions (1) and (2) for ring efficiency are violated but the clubs cannot revert to the ascending bid auction of the European transfer system since the Red Sox are only one vote. The Red Sox owner may then resort to foreclosure.

If strong rivalries are prevalent in MLB, foreclosing might prevent the posting system from operating at all. MLB clubs that anticipate foreclosing behavior by a rival club simply won't bother participating in stage 1 of the game and market failure may result if conditions (1) and (2) are violated. The only players who will make the jump from Japan to MLB will be marginal players that have little impact on the relative strengths of MLB clubs. Rational Japanese clubs that anticipate receiving the much needed transfer revenues would surely anticipate foreclosing behavior and insist that some mechanism be built into the posting system to prevent foreclosure. Allowing MLB clubs to bid directly with the Japanese club will not prevent foreclosure of competitive bidding.

One solution is suggested from the insurance literature. MLB clubs could be required to pay a "deductible" for the right to enter the bidding process. Only the winning bidder would lose the deductible if it failed to agree to a contract with the Japanese player. The deductible would need to be high enough to discourage foreclosure and to give the posting system credibility to the Japanese club. Unfortunately the use of a deductible may prevent some lower revenue MLB clubs from bidding, since there is always some positive probability that the honest winning bidder will not be able to reach a contract agreement with the Japanese player. Currently, a deductible is not a feature of the posting system, perhaps for this reason. Alternatively, the posting system could be changed to

allow a Japanese player to re-enter the system during the designated posting period if contract negotiations fail. Foreclosure could still occur if the winning bidder drags on contract negotiations to the end of the posting period.

The role of the Commissioner's office in the bidding process may be to prevent foreclosure, particularly if the Commissioner is present at the pre-auction in stage 1 of the game. He will know who the “winning” bidder is at the end of stage 1 and will easily be able to detect a foreclosing bid in stage 2. It is not really known if n bids are opened, or just one. If the latter is the case, then the appearance of a second unexpected bid is simply rejected. In this way, the Commissioner can act as a filter between the winning bid and the Japanese club. If this is indeed the role of the Commissioner in the posting system, there is no reason the Japanese professional league would not agree to involving the Commissioner's Office in the process.

Maintaining Anonymity of the Winner

The Commissioner insures that the winning bidder remains anonymous when he presents the value of b_i^C to the seller. The Japanese club is assumed to know that winning bid will be the bidder with a private valuation of v_i^{\max} since it understands the structure of the game. We now augment the ring efficiency conditions in (1) and (3) by introducing non-local revenues equal to \tilde{v}_i that are not included in the revenue sharing arrangement.

$$\alpha v_i^{\max} + \frac{1-\alpha}{N} v_i^{\max} + \tilde{v}_i^{\max} - b_i^C = \gamma v_i^{\max} + \tilde{v}_i^{\max} - b_i^C \geq R \quad (4)$$

$$(1-\gamma)v_i^{\max} + \tilde{v}_i^{\max} < b_i^{NC} - b_i^C \quad (5)$$

We assume that the club with the highest private valuation from local (shared) revenues also possesses the highest private valuation from non-local (unshared) revenues. Equations (4) and (5) define absolute upper bounds for a collusive bid, but bidding will

likely revert back to equations (1) and (3) without non-local revenues. Clubs will not bid any amount of their \tilde{v}_i since this will not affect which club wins the auction in stage 1. The only effect will be to transfer surplus from the winning bidder to the Japanese club. This is not in the interest of the bidding cartel because the winning bidder has a memory and will do the same to its rival who bid up the winning bid.

Although the Japanese club sets a reserve price R , it would prefer to receive a bid greater than R . Through the ring efficiency conditions in (4) and (5), the Japanese club knows that the highest valuation bidder will win the auction in stage 1, but that it will not need to bid any of its \tilde{v}_i . If the identity of the winning bidder is made known to the Japanese club, it can refuse the winning bid in the hopes of receiving a higher bid. Bidding clubs can anticipate this response and bid some or all of their \tilde{v}_i in stage 1 if the player is valued high enough. Concealing the identity of the winning bidder prevents bidding clubs from needing to form an expectation of how much \tilde{v}_i might be necessary to eventually win the player. This keeps the winning bid to the amount imposed by the ring efficiency conditions in (1) and (3). The winning bidder is always the same club in our setup, but secrecy of the winner keeps the winning bid lower than would be the case without secrecy.

Conclusions

This paper began by describing the posting system used by MLB and the Japanese Professional League and then posed the question why the posting system was designed the way it is. Why did the posting system not replicate the features of the European transfer system? Three curious features of the posting system were identified: the use of a collusive first-price sealed bid auction, the use of the Commissioner's Office as an auctioneer, and the inability of the Japanese club to learn the identity of the winning bidder until after the winning bid is accepted. Collusion is a reality in the cartel professional leagues that exist in North America. In our setup, cartel members accept a revenue sharing arrangement as an involuntary system to compensate clubs for any

externality imposed when one club acquires a star free agent player (although this arrangement is not perfect). In exchange for this, “losing” bidders agree to allow the “winning” bidder to win the free agent auction with a bid that is lower than the winner’s private valuation of the player. MLB clubs will pay lower transfer fees to Japanese clubs that are selling players.

The Commissioner acts as a collusion mediator to prevent the foreclosure of competing bids, particularly if two or more rival clubs are considering placing bids. This is to the benefit of the Japanese club in that market failure is avoided. Foreclosure can occur in the European transfer system as well, although the failure to reach a contract agreement is not definitive evidence of foreclosure. In either system, foreclosure could be avoided by requiring the winning bidder to post a bond in the event that it does not sign the Japanese player to a contract. Of course, there is some positive probability that a contract agreement will not be made without foreclosure, but this event should be discounted into the winning bid by rational bidders.

Maintaining the secrecy of the winning bidder prevents collusion between MLB clubs and Japanese clubs. Such acts of collusion are to the detriment of other bidding clubs and possibly to the Japanese player. We show that maintaining secrecy of the winning bidder also prevents MLB clubs from bidding too high, while having no effect on which club wins the auction.

An interesting question⁴ remains given the market power of MLB clubs. MLB has pillaged the talent from rival leagues in its long history: the Federal League in 1916, the Negro Leagues of the 1930’s and 1940’s, and the Mexican Leagues of the 1950’s. Why does MLB not do the same to the Japanese professional league and drop the posting system altogether? This could be accomplished by including foreign-born players in the annual MLB draft, thus conferring their rights to MLB clubs at minimal cost. Although the auction model developed in this paper cannot address this question, we can offer two explanations why the posting system is preserved. First, the cost of developing young

⁴ This question was suggested by an anonymous referee.

players is a substantial investment and the probability of the investment yielding a good return at the major league level is very small. Paying more to acquire a known talent might be a better investment, particularly if player development costs in Japan are lower. The second, and more likely explanation, is that MLB clubs are purchasing more than a baseball player when they win the posting system auction. Most of the players who are sold through the posting system are superstar players in Japan whose marketing capabilities can be exploited by MLB clubs. When the Seattle Mariners acquired Ichiro Suzuki through the posting system in 2001, they acquired much more than a very good right-fielder. The Mariners (owned by Nintendo) also purchased an international brand that has yielded the club large merchandising and media revenues that would not be forthcoming from most other players. If instead the Mariners drafted the same player as a high school teenager and developed him through the North American minor leagues, he would not have the same international recognition, even if he performed on the field to the same standard. The same marketing strategy is used by some of the world's top sports clubs (Barcelona FC and Ronaldhino) and by those who strive to be (the LA Galaxy and David Beckham).

In summary, the posting system is a compromise between MLB clubs and Japanese professional clubs. MLB clubs are collusive and do not bid as much as they could under a European transfer system. This is because the revenue sharing system automatically compensates the losing bidders for any negative externality imposed on them by the winning bidder (albeit imperfectly). Bids will be lower than possible under a European transfer system, but Japanese clubs understand this and do the best they can, given that foreclosure is prevented.

References

Caillaud, B. and Jehiel, P., “Collusion in Auctions with Externalities”, *RAND Journal of Economics*, 29(4), 1998, 680-702.

Easton, S. and Rockerbie, D., “Revenue Sharing, Conjectures and Scarce Talent in a Sports League Model”, *Journal of Sports Economics*, 6(4), 2005, 359-378.

Graham, D. and Marshall, R., “Collusive Bidder Behavior at Single-Object Second-Price and English Auctions”, *Journal of Political Economy*, 95, 1987, 1217-1239.

Jehiel, P. and Moldovanu, B., “Strategic Nonparticipation”, *RAND Journal of Economics*, 27, 1996, 84-98.

Milgrom, R. and Weber, R., “A Theory of Auctions and Competitive Bidding”, *Econometrica*, 50, 1982, 1089-1122.

Vickrey, W., “Counterspeculation and Competitive Sealed Bid Tenders”, *Journal of Finance*, 16, 1961, 8-37.