A Unified Theory of Capital and Labor Markets in Major League Baseball

JOHN VROOMAN
Vanderbilt University
Nashville, Tennessee

> *There is nothing more limited than a limited partner in the Yankees.*
>
> —John McMullen, 1979, former New York Yankees minority owner and former Houston Astros majority owner.

The economics of professional sports has been relegated to the realm of labor theory by the assumption that owners of sports franchises are simply maximizers of profit *in vacuo*. Theory developed within this vacuum [11; 12; 15; 16; 18; 19] has been preoccupied with Rottenburg's *invariance proposition* [13] that the distribution of talent within Major League Baseball (MLB) is independent of the legal ownership of that talent. According to this Coasian argument, the institution of free agency in MLB would not affect the real decisions of teams, but it would result in the transfer of wealth from owners to players in the form of higher player salaries, reduced exploitation, diminished profits and lower franchise values. As predicted, the player-cost share of league revenues rose from 20 percent to 58 percent over the first two decades of free agency in MLB. Unfortunately, the explosion in MLB players' salaries has been attributed by association to the institution of free agency, itself.[1] Symptom-treating policies such as payroll caps and luxury taxes, which have been conceived from this myopic view, have been ineffective [12] and potentially deleterious [18]. During the same two-decades, however, over 40 MLB franchise ownerships were coincidentally transferred amid a revolutionary transition of MLB ownership structure from sole sportsman to leveraged syndicate.[2] This paper explores the possibility that the salary escalation during the free agency period was partially the result of the capital market game of leveraged syndication being actively played on a labor market field of free agency. The major problem in developing a theory to unify capital and labor market behavior stems from Modigliani and Miller's *irrelevance proposition* [10] that the financial and real decisions of a firm

---

1. This paper has been improved by the thoughtful comments of an anonymous referee, who cautions that there are several alternative explanations for the salary and franchise behavior described in this paper. For example, after player costs increased initially from 20 percent of the MLB revenue in 1977 to 40 percent in 1981, the ratio fell back to 32 percent by 1989, due largely to the collusion of MLB owners. Following an inordinately large MLB media rights fees agreement for 1990–93, the players' share of revenue jumped to 58 percent by the strike of 1994. Under the 1990–93 contract with CBS, national media rights fees doubled to $14.5 million per club from $7.2 million in 1984–89.

2. In the free agency period franchise prices and player salaries both rose by 15 percent. In 1976 Seattle and Toronto paid franchise fees of $7 million, and in 1995 Arizona and Tampa began installments on their $130 million expansion fees. The 1995 expansion clubs will begin play in 1998 and forego an additional $25 million in league revenue over a 5 year period.

(MLB club) are necessarily independent. The weakness of the *irrelevance proposition*, however, is that the separation of capital and labor markets logically rests on the conventional assumption of profit maximization. If owners are more generally viewed as sportsmen, who prefer winning games beyond the profit maximum, then it can be shown that the capital market decisions of MLB owners become inseparably linked to the real operational decisions of the baseball players' labor market.

I. A Unified Capital and Labor Theory

The Irrelevance Proposition

A unified theory of capital and labor markets has been deemed difficult, if not impossible, following the seminal statement by Modigliani and Miller (MM) [10] of their famous *separation theorem*, in two parts. The first separation principle holds that "*the market value of any firm is independent of its capital structure . . . i.e., the average cost of capital to any firm is completely independent of its capital structure and is equal to the capitalization rate of a pure equity stream of its class* (emphasis original) [10, 268-69]." Whereas the second separation principle forcefully suggests that "it follows that optimal operating decisions of the firm do not depend on its financing decisions; that is, *operating and financing decisions are separable* (emphasis added) [3, 152-53]." Subsequent discussions of the MM theorem have involved the realism of its limiting assumptions [9; 17], but the irrelevance of financial decisions for the real decisions of the firm has remained logically unassailable.[3] The unified theory proposed here seeks to relax the underlying assumption of the second principle of separation: that the MLB franchise is acting in the best interest of equity and debt holders [10, 288]. The argument follows a path blazed by Scitovszky [14] and later redeveloped through the agency theory of Jensen and Meckling [7].

The implications of the first separation principle can be shown through a simple model of the ownership (syndication) and financial (leverage) structures of MLB franchises of the risk class ε. Generally the value of the MLB franchise can be represented as the sum of outstanding debt D and equity X, divided into the general partner's α share and the limited partners' $(1 - \alpha)$ ownership share:

$$V = D + \alpha X + (1 - \alpha)X \tag{1}$$

where X is cash flow after interest $\pi - r^*D$ capitalized at a rate ρ reflecting the financial risk of leverage:

$$V = D + \alpha(\pi - r^*D)/\rho + (1 - \alpha)(\pi - r^*D)/\rho \tag{2}$$

where $D = \lambda V$ and $\rho = r^* + \varepsilon/(1 - \lambda)$ is a risk-free rate r^* adjusted for MLB business risk ε concentrated on the unlevered portion $(1 - \lambda)$ of the franchise V. If the franchise is unlevered $(\lambda = 0)$, then (2) reduces to the sum of the equity partnership shares discounted at an interest rate r reflecting only the MLB business risk ε:

---

3. Stiglitz shows that a wider class of financial policies than that considered by MM (debt/equity) "has no effect on the valuation of the firm" [17, 851]. Miller argues that "even in a world in which interest payments are fully deductible in computing corporate income taxes, the value of the firm will still be independent of its capital structure" [9, 262].

$$V = \alpha\pi/r + (1 - \alpha)\pi/r \tag{3}$$

where $r = r^* + \varepsilon$. If the franchise is partially levered ($\lambda > 0$) but solely owned ($\alpha = 1$) then (2) reduces to:

$$V = D + (\pi - r^*D)/\rho \tag{4}$$

where $D = \lambda V$ and $\rho = r^* + \varepsilon/(1 - \lambda)$. In the case of nonsyndicated, unlevered ownership ($\alpha = 1; \lambda = 0$), the value of the MLB franchise becomes the expected value of "the pure equity stream of its class:"

$$V = X = \pi/r. \tag{5}$$

According to the first separation principle of the MM theorem, leverage is irrelevant to the valuation of the franchise, because any increase in the value of the club due to the use of cheaper risk-free debt r^* in either (2) or (4) is exactly offset (according to the law of conservation of risk) by an increase in the cost of equity ρ. If each MLB franchise is subject to the same business risk ε, then all combinations of leverage and syndication for a franchise are equivalent to the capitalization of "a pure equity stream of its (risk) class;" that is, equations (1) (2) (3) and (4) are each equivalent to (5). According to the second separation principle, the operation of a MLB team is then independent of its financial or ownership structure. This is true, however, *only if* each owner is assumed to maximize the value of his franchise with respect to winning. If an owner is a pure profit maximizer, then the maximization of his equity share $\alpha(1 - \lambda)V$ requires real decisions that remain consistent with the overall franchise value maximum $\partial V/\partial w = 0$. In contrast, if owners are generally perceived as sportsmen, who jointly maximize franchise values and the satisfaction derived from winning, then the second separation principle does not necessarily follow from the first. The irrelevance proposition, therefore, obtains only in the exceptional case of the pure profit maximizer. In the optimization of the multiple objectives of a sportsman owner, the capital and labor choices of MLB owners become linked in a manner that influences the on-field performance of their teams.

The Sportsman Effect

The optimization problem facing the sole ($\alpha = 1$), unlevered ($\lambda = 0$) sportsman owner concerns the joint maximization of franchise value (V) and the satisfaction (S) derived from winning (w) such that the differential: $dS = (\partial S/\partial V)dV + (\partial S/\partial w)dw = 0$, where: $dV/dw = \partial(\pi/r)/\partial w = 1/r(\partial\pi/\partial w) = -(\partial S/\partial w)/(\partial S/\partial V)$ for $\rho = r$. The sportsman reaches an optimum where the marginal value of the franchise with respect to winning is equal to the negative of the rate of substitution (RS) between winning and franchise value: $MV = (MR - MC)/r = -RS$. Compare the general sportsman optimum at B in Figure 1 with the customary, but unnecessarily limiting case of profit maximization ($\partial S/\partial w = -RS = 0$) at A. This leads to a defining proposition for the sole sportsman owner.

PROPOSITION 1. *The sportsman owner sacrifices franchise value for winning and expands the talent of his club beyond its value maximum. The resulting undervaluation of the franchise is the sportsman effect.*

In a classic argument, Scitovszky [14] noted that the sportsman optimum at B would also maximize the residual of franchise value above a minimum value necessary to keep the owner
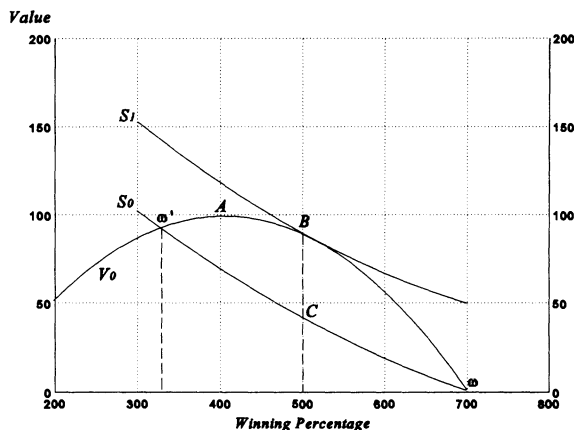
Figure 1. The Sportsman Effect (after Scitovszky)

in MLB. Following Scitovszky's reasoning, the indifference curve S_0 in Figure 1 represents the minimum satisfaction that will keep the sportsman in the game. The vertical distance beneath S_0 is the franchise value necessary to compensate the owner for the on field performance of the team, and the difference between franchise value V_0 and minimum satisfaction S_0 (the envelope ω-ω') is the residual value that is to be maximized by the sportsman at B-C.[4] For winning percentages above ω, winning no longer compensates the owner for the loss in franchise value, and for winning percentages below ω', the franchise value no longer compensates the sportsman for losing. If the owner's satisfaction were to fall below S_0, the sportsman would sell the MLB franchise.

The constraints of league competition create an obvious complication for the optimization solution w_1 when a sportsman encounters an opponent who seeks a winning percentage w_2, such that $\sum w_i \neq 1.000$. The equilibrating mechanism for the simultaneous solution of a league of sportsmen is the cost per unit of talent for all teams in the league. If $\sum w_i > 1.000$, then the excess demand for talent and winning within the league will force the cost per unit of talent to increase, and the aggregate demand for talent and winning will decrease for all clubs in the league. Conversely, if $\sum w_i < 1.000$, then the negative excess demand for talent will depress player costs and increase cash flows and values of all clubs, until a league equilibrium is reached consistent with the constraints of the league win-loss identity $\sum \hat{w}_i = 1.000$.[5] The sportsman league equilibrium is the simultaneous solution of $MV_i + RS_i = (MR_i - MC_i)/r + RS_i = 0$ for each team i within the league. Consider the equilibrium for a simplified two-team league in terms of w_1, where $\partial w_2/\partial w_1 = -1$:

$$MV_1 + RS_1 = MR_1 - MC_1 + rRS_1 = (\partial w_2/\partial w_1)(MV_2 + RS_2)$$
$$= -(MR_2 - MC_2 + rRS_2) = 0. \tag{6}$$

4. The maximum residual would occur at the same winning percentage as the satisfaction optimum B if the slopes of the indifference curves are the same at that percentage. In order for S_0 to be a vertical displacement of S_1, the sportsman effect must be independent of the value of the franchise.

5. An anonymous referee cautions that $\sum \hat{w}_i = 1.000$ is not an equilibrium condition, but is mathematically true as an identity. This is true regardless if the league rivals are supercompetitive $\sum w_i > \sum \hat{w}_i$ or subcompetitive $\sum w_i < \sum \hat{w}_i$. League equilibrium requires that the demand for winning be equal to this identity $\sum w_i = \sum \hat{w}_i = 1.000$. If the rivals are supercompetitive then player costs will rise and the demand for winning will fall for both teams. If they are subcompetitive, then player costs will fall and the bilateral demand for winning will rise until the equilibrium condition is obtained [18; 19].
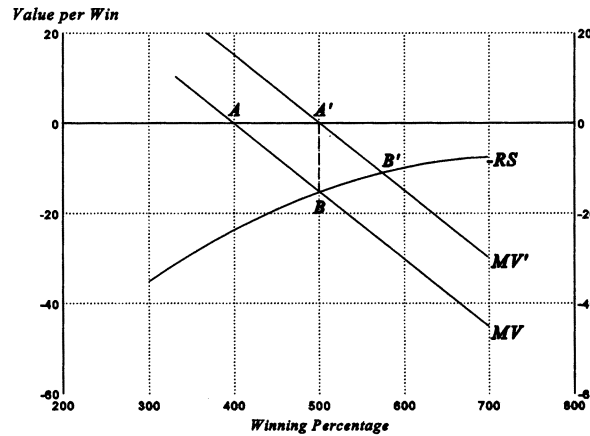
Figure 2. The Sportsman Effect in League Equilibrium

The equilibrium solution (6) requires $(MR_1 - MC_1)/r + RS_1 = -[(MR_2 - MC_2)/r + RS_2] = 0$. This is shown in Figure 1 for a cloned sportsman, who competes at $B(.500$ in a league of equal revenue $(MR_1 = MR_2)$ clubs.

Several distinctions between a sportsman league $(\partial S/\partial w > 0)$ and a pure-profit league $(\partial S/\partial w = 0)$ can be drawn by constraining $RS_1 = RS_2 = 0$ for the limiting case of the profit maximizer. First, the assumptions of equal cost per unit of talent and symmetrical marginal product of talent among teams imply that, *in terms of* w_1: $MC_1 = MC_2$ for $w_1 = .500$, $MC_1 > MC_2$ for $w_1 > .500$, and $MC_1 < MC_2$ for $w_1 > .500$. The league-average player cost (C^*) at .500, which is consistent with league-equilibrium for all clubs, can then be derived as:

$$C^* = MC_1 = MC_2 = (MR_1 + MR_2)/N + r(RS_1 + RS_2)/N = MR^* + rRS^* \qquad (7)$$

where MR^* and RS^* are the average marginal revenues and rates of substitution between winning and franchise value at .500 for an N-team league. If owners are seen equal sportsmen $(RS_1 = RS_2$ at .500), then the difference between average player costs in a sportsmen league and in pure-profit league $(RS^* = 0)$ is rRS^* higher at .500 for all clubs $(MR^* + rRS^* - MR^* = rRS^*)$. The relative player costs for large revenue clubs, of course, are still higher than those of small revenue clubs in either a sportsman or pure-profit league equilibrium. The value of a franchise in a sportsman league would be RS^* at .500 lower than the same club in a pure-profit league, because of a higher cost per unit of talent for all teams. This reduction of franchise values in league equilibrium is shown in Figure 2. A league of sportsmen, who would otherwise maximize profits at A', is shown with the joint preference for winning at league disequilibrium B', where $\sum w_i > 1.000$. The excess demand for talent at B' would increase the cost per unit of talent, depreciate the marginal value of all clubs from MV' to MV and the league equilibrium would adjust from A' to B. A sportsman-league proposition is immediate.

PROPOSITION 2. *In a sportsman league, player costs will be higher for all teams and all franchises will be accordingly undervalued compared to the same clubs in a profit maximization league. The resulting franchise undervaluation is equal to the league average rate of substitution between winning and franchise value at .500, and it serves as a measure of the sportsman effect θ in league equilibrium.*
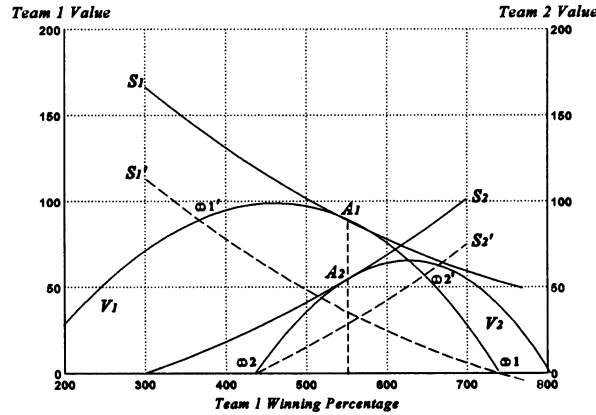
Figure 3. The Sportsman Effect between Unequal Revenue Clubs

Further, partial sportsmen ownership within the league will increase player costs for all clubs, regardless of different ownership objectives, because MLB clubs share the same talent pool. Average player costs within the league can be generalized from (6) as $C^* = MR^* + \mu r\theta$, where μ is the proportion of the franchises in a league that are owned by sportsmen. Player costs in the partial sportsman league are $\mu r\theta$ higher than those in the pure profit league, and the values of all franchises are $\mu\theta$ lower. The partial sportsman league corollary then follows.

COROLLARY. *The partial composition of league ownership by sportsmen will result in a proportional increase in average player costs shared by all clubs in the league, and, in league equilibrium, the values of all franchises within the league will be reduced in direct proportion to the concentration of sportsmen owners.*

If the owners of unequal revenue clubs $(MR_1 > MR_2)$ are identical sportsmen, then rates of substitution between winning and franchise values in terms of w_1 are symmetrical around .500. This implies that $RS_1 = RS_2$ at .500, and that a large revenue club encounters rates of substitution above .500 that are relatively smaller $(RS_1 < RS_2)$ than those faced by the small revenue club. This is shown in Figure 3 where the large revenue Team 1 competes left to right at A_1 and the small revenue Team 2 competes right to left at A_2. The rate of substitution of winning for franchise value is greater for the small revenue club at A_2 than for the large revenue club at A_1. The sportsman league equilibrium (6) yields $(MR_1 - MC_1) - (MR_2 - MC_2) = r(RS_2 - RS_1)$, rather than the greater dominance of large-revenue teams implied by $(MR_1 - MC_1) - (MR_2 - MC_2) = 0$ under the conditions of pure profit maximization.[6] As a consequence, the advantage for a large revenue franchises is not only mitigated by the increasing marginal cost of talent [18; 19], but also by the decreasing rates of substitution between winning and franchise value for large-revenue sportsmen. A competitive balance proposition then follows.[7]

PROPOSITION 3. *A sportsman league of unequal revenue clubs is more competitively balanced than is a profit maximization league comprised of the same clubs, and the degree of competitive bal-*

---

6. The greater the divergence between MR_1 and MR_2 at league equilibrium, the less the competitive imbalance. If the marginal product of talent is symmetrical between teams, then $MC_1 = -MC_2$ at .500 and $MC_1 > -MC_2$ above .500 [18; 19]. This implies $MR_1 > -MR_2$ at league equilibrium which is more competitively balanced than $MR_1 = -MR_2$ solutions [11; 12].

7. Competitive balance is defined here as the variance in winning among clubs in the league. See Vrooman [18; 19].

ance among unequal revenue clubs within MLB is directly proportional to the number of franchises owned by sportsmen.

Finally, the Scitovszky operating range ω-ω' for the sportsman owner is smaller than the conventional range of the pure profit maximizer in Figure 1, and this is especially true for the small revenue franchise in Figure 3. One peculiar aspect of professional sports leagues is that the performance of one club is interdependent with the performance and existence of another [19]. A proposition of the *Yankee paradox* obtains.

PROPOSITION 4. *The operating range for the sole sportsman is smaller than that of a pure profit maximizer, and the existence of the league of unequal revenue clubs reduces the operating range of the large-revenue sportsman-owned club to that of its smallest opponent, ω_2-ω_2' in Figure 3.*

II. Other Peoples' Money

The Steinbrenner Effect

The combination of winning and franchise value as joint objectives for sportsmen fosters an environment in which a separation of ownership and control of a franchise can create significant agency effects.[8] A sportsman owner, who syndicates $(1 - \alpha)$ limited partnership LP shares and retains an α managing general partnership GP share, can gain all the satisfaction from (credit for) winning, while bearing only a fraction α of the reduction in franchise value. Consider the optimization of (3) for the sportsman's α share after syndication of $(1 - \alpha)$ LP shares:

$$\alpha MV_i + RS_i = \alpha/r(MR_i - MC_i) + RS_i = MR_i - MC_i + r/\alpha RS_i = 0. \tag{8}$$

The solution $\alpha \, (MR_i - MC_i) = -rRS_i$ for a GP sportsman implies that the cost of winning in terms of reduction of franchise value is diluted by ownership syndication, and that the GP can improve his position at the partial expense of the LP shares. Compare the sole-sportsman optimum at A to the syndicated GP-sportsman optimum at B in Figure 4. The maximization of the satisfaction derived from the GP's share (or the maximum of the residual envelope $\alpha V - S_0$) at B drives the value of the franchise for all partners to C, while allowing the GP to reach a higher level of satisfaction along S_2.[9] Hence, the *Steinbrenner effect* obtains.[10]

PROPOSITION 5. *A syndicated sportsman owner has an incentive to expand the talent level of the MLB club beyond that of the sole-sportsman owner. The resulting undervaluation of the franchise serves as a measure of the Steinbrenner (agency) effects of syndication.*

If the GP sportsman disturbs a league that was previously in equilibrium, then the league's

---

8. Another important difference between the sportsman league and the profit maximization league is that agency effects can not exist under the special conditions of profit maximization. This argument follows Jensen and Meckling [7].

9. A rational investor would anticipate the agency effects and value the franchise at C. See Jensen and Meckling [7]. The Yankees franchise, for example, has had several interested outright buyers, whereas the original LPs have had difficulty finding a market for their limited shares with Steinbrenner as GP.

10. The New York Yankees were purchased from CBS for $10 million in 1973 by a syndicate headed by the general partner, George Steinbrenner, who was also chairman of American Shipbuilding. Following the purchase the new GP assured that "We plan absentee ownership as far as running the Yankees is concerned. We're not going to pretend we are something we aren't. I'll stick to building ships." Since that time, however, Steinbrenner obtained majority 55 percent ownership in 1976, and "the Boss" has become the most visible and intrusive owner in MLB.
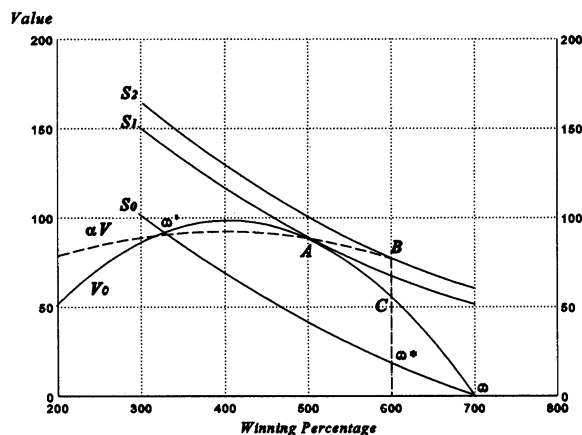
Figure 4. The Steinbrenner Effect

demand for winning would exceed the constraints of the league win-loss identity $\sum \hat{w}_i = 1.000$. Ownership syndication would, therefore, create an excess demand for talent within the league, and the marginal cost of talent would rise and franchise values would fall for all clubs until $\sum w_i = 1.000$. In a league comprised of identically syndicated clubs, the cost of talent, where the MCs for all clubs are equal at .500, becomes $C^* = MR^* + \mu r\theta/\alpha$. Player costs in a syndicated sportsman league are $\mu r\theta/\alpha$ higher than those in a pure-profit league, and $\mu r\theta(1 - \alpha)/\alpha$ higher than those in a nonsyndicated sportsman league. Accordingly, franchise values are $\mu\theta/\alpha$ lower than a pure-profit league and $\mu\theta(1 - \alpha)/a$ lower than a sole-sportsman league. This leads to the Steinbrenner externality.

PROPOSITION 6. *In a league of teams operated by syndicated sportsmen, player costs will be higher for all teams and all franchises will be accordingly undervalued compared to the same clubs in either a pure-profit or sole-sportsman league. This undervaluation measures the Steinbrenner effect in league equilibrium.*[11]

Further, a syndicated league equilibrium consistent with $(MR_1 - MC_1) - (MR_2 - MC_2) = \mu r/\alpha(RS_2 - RS_1)$ is more competitively balanced for unequal revenue clubs than either the sole-sportsman equilibrium $(MR_1 - MC_1) - (MR_2 - MC_2) = \mu r(RS_2 - RS_1)$ or the pure profit maximum at $(MR_1 - MC_1) - (MR_2 - MC_2) = 0$.

COROLLARY. *A syndicated sportsman league of unequal revenue clubs is more competitively balanced than is either a pure-profit maximization league or a sole sportsman league comprised of the same clubs.*

COROLLARY. *A league of syndicated franchises will face a closing window of operation compared to the range of existence for same clubs in either a pure-profit or sole-sportsman league environment.*

---

11. In a partially syndicated league of equal revenue clubs, a variable proportion δ of syndicated owners will reduce franchise values by $[(1-\alpha)\delta]/[1-(1-\alpha)\delta]\mu r\theta$. In a league of unequal revenue clubs and variable proportion of syndicates, the measure of Steinbrenner effect depends on the relative marginal revenues of the clubs that are syndicated.
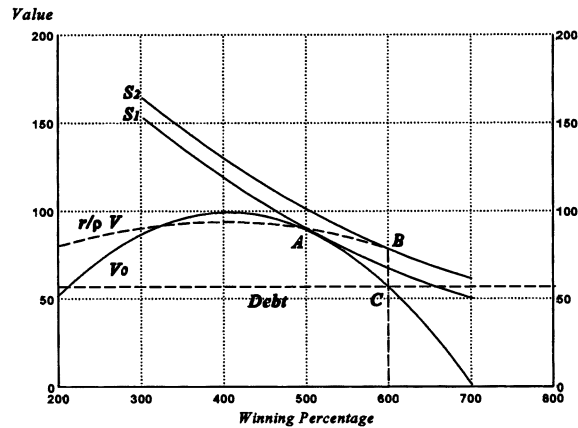
Figure 5. The Predators' Ball Game

The Predators' Ball Game

Rather than syndicating ownership, a sportsman owner may initially choose any combination of financial leverage and ownership syndication. The leveraged owner may choose to acquire an MLB franchise by borrowing a portion of the purchase price or by assuming outstanding prior debt as part of the purchase price. A syndicated sportsman may decide to buy out limited partners by leveraging the franchise. In general, a leveraged owner would jointly maximize his preference for winning and the value of his equity share in the club $\alpha(\pi - r^*D)/\rho$, such that the optimization of the second term (the first and third terms vanish as arguments) in (2) becomes:

$$\alpha/\rho(\partial\pi/\partial w) + (\partial S/\partial w)/(\partial S/\partial V) = \alpha/\rho(MR - MC) + RS = \alpha r/\rho MV + RS = 0 \qquad (9)$$

where $\partial\pi/\partial w = r(\partial V/\partial w)$, $r = r^* + \varepsilon$, and $\rho = r^* + \varepsilon/(1 - \lambda)$ for the risk free rate r^*, the business risk ε and the increased financial risk from leverage $\varepsilon/(1 - \lambda)$. For the levered sole-sportsman (9) is simplified for $(\alpha = 1)$:

$$1/\rho(MR - MC) + RS = r/\rho MV + RS = 0. \qquad (10)$$

Compare the optimization solution for a levered sportsman at B in Figure 5, to that of an unlevered sportsman at A. The cost of winning in terms of lost potential equity is reduced by $(1 - r/\rho)$, due to the higher financial risk ρ concentrated on the levered equity share. The levered sportsman is constrained by $r/\rho MV$, rather than MV, and he can reach a higher level of combined satisfaction from winning and the value of his equity share along S_2, rather than S_0. As a result, the levered sportsman has initial Steinbrenner incentives to acquire more talent and team wins than does his unlevered adversary with an equal revenue base and ownership structure.

The levered owner has an additional incentive to increase the business risk of a club's operational decisions. Because of the asymmetry of risk between creditors and owners, a leveraged owner "will have a strong incentive to engage in activities (investments) which promise very high payoffs if successful even if they have a low probability of success. If they turn out well, he captures most of the gains, if they turn out badly the creditors bear most of the costs [7, 334]." The levered MLB owner would make decisions consistent with a lower franchise value at B in Figure 5 and a greater operational variance (business risk) than would the unlevered club owner.

For example, the levered owner has an incentive to quick-fix his team through the acquisition of long-shot free agent talent, rather than developing talent through his club's farm system. The levered owner is more likely to deal on the risky side of multiple player trades (several minor leaguers for one veteran of equal value), whereas the more risk-averse, unlevered owner would diversify risk and deal on the one-for-many side of trades.

Although leverage may initially lead to Steinbrenner effects, the operation of a leveraged franchise is different than a syndicated club in at least one respect. Baumol [1], Jensen [5; 6] and other leveraged buy-out (LBO) advocates argue that the creation of debt in highly leveraged transactions (HLTs) can "reduce the agency costs of free cash flow by reducing the cash flow available for spending at the discretion of managers" [6, 324]. According to the "control hypothesis" for debt creation, "(t)he threat caused by the failure to make debt service payments serves as an effective motivating force to make organizations more efficient" [6, 324].[12] For example, the levered sportsman in Figure 5 would operate at B only if the amount of leverage in the franchise was less than C. For debt levels above C, the Steinbrenner effect at B will be controlled by the legal obligations of franchise solvency $V = D$. Under syndication, the GP sportsman may expropriate value from his limited partners *ex post facto,* but in highly leveraged financial structures, the levered sportsman is restricted from such a wealth transfer. The solvency requirement $V = D$ above C, therefore, dominates the Steinbrenner optimum at B. At successively higher levels of debt above C, a highly leveraged club's talent level is trimmed, and the Steinbrenner effect is reduced as B-C approaches A. The highly leveraged owner is forced to a lower level of satisfaction along S_1 at A, where the Steinbrenner effect is completely negated by the control functions of debt.[13] This is what Jensen [7] refers to as a more efficient organization, and it leads to a formal statement of the debt control hypothesis.

PROPOSITION 8. *At relatively low levels of financial leverage, there exists an incentive for a levered sportsman owner to expand the talent level (winning percentage) of his club beyond that of the owner of an unlevered franchise with the same revenue potential. A sufficiently high degree of leverage, however, also exists where the Steinbrenner effect is self-constrained by fixed debt requirements, such that the operational decisions of a levered sportsman approach those of an unlevered sportsman owner of the same revenue class.*

While the optimization solution of the leveraged Scitovszky residual for the solvent franchise $(V > D)$ in Figure 5 is not directly affected by the control function of debt, the rising level of debt does close the franchise existence window $(\omega$-ω' or B-C from Figure 1) for leveraged clubs. Before the solvency requirement $(V = D)$ is sufficiently high to eliminate the Steinbrenner effect at A, however, the levered sportsman owner will probably sell the club, because the leveraged Scitovszky residual will vanish.[14] A leveraged-liquidation proposition follows.

PROPOSITION 9. *The sportsman effect is a necessary precondition for the Steinbrenner effect, and the solvency requirements of a leveraged club can control and ultimately dominate the Steinbrenner effect. The solvency requirements of debt, however, do not control or influence the sports-*

---

12. Peter Magowan, Safeway CEO and GP of the San Francisco Giants, relates: "I believe the LBO process itself caused us to transform the company (Safeway) into a truly excellent one. The discipline of paying down the enormous debt forced us to set high hurdle rates for performance and new capital spending" [8, 14].

13. The leverage ratio at which debt begins to control the Steinbrenner effect is inversely related to the size of the effect.

14. The leveraged sportsman optimization requires the maximization of the residual $r/\rho V - S_0 - D$ at $r/\rho MV - RS = 0$, whereas the club would be sold when the residual is reduced to zero by a level of debt such that $D = r/\rho V - S_0$.

man effect because the owner will sell his club before the Steinbrenner effect vanishes at equilibrium A in Figure 5.

The agency effects of leverage will create an excess demand for playing talent and league disequilibrium. Player costs will rise the demand for talent and winning will fall for all clubs until $\sum w_i = 1.000$. In a league of identically leveraged clubs, the average cost of talent at .500 becomes $C^* = MR^* + \rho\theta$. Player costs in a leveraged sportsman league, then are $\rho\theta$ higher than those in a pure-profit league, and $(\rho - r)\theta$ or $\varepsilon\lambda\theta/(1 - \lambda)$ higher than those in an unlevered-sportsman league. Franchise values in a leveraged league are on average, $\rho\theta/r$ lower than a pure-profit league and $\varepsilon\lambda\theta/r(1 - \lambda)$ lower than an unlevered-sportsman league. However, player costs in a leveraged sportsman league are $(r - \alpha\rho)\theta/\alpha$ or $r^*\theta(1 - \alpha)/\alpha$ lower, and franchise values are $(r - \alpha\rho)\theta/\alpha r$ or $r^*\theta(1 - \alpha)/\alpha r$ higher when compared to a league of syndicated owners of the same degree $(\alpha = 1 - \lambda)$.[15] These differentials yield the following proposition about the relative effects of capital and ownership structure.

PROPOSITION 10. *Sports leagues in equilibrium will have the highest average player costs, the greatest competitive balance between large and small revenue clubs, and the lowest overall franchise values in direct accordance with an ownership and financial structure spectrum ranging from pure-profit, to pure sportsmen, to leveraged sportsmen and ultimately to syndicated sportsmen of the same degree.*

The Extinction of the Sportsman

The relative differentials in external (league) player cost inflation, the resulting exogenous compression of franchise values and the closure of internal Scitovszky franchise survival ranges make certain ownership or capital structures particularly vulnerable to the agency effects of increased syndication and/or leverage. The question then arises as to which of these financial/ownership structures would prevail over time in a mixed league environment. LBO advocates, such as Jensen [5] foretell of the "eclipse" of the corporate (syndicate) ownership form due to the efficiency of the control functions of debt. The LBO/HLT advocates, however, overlook two significant factors that make the leveraged franchise, itself, vulnerable to extinction. The first, of course is the shrinking range of operational variance that accompanies the HLT,[16] whereas the second derives from the fact that MLB owners must share the same talent pool. Not only does the syndicated GP expropriate franchise value from his own LPs, but he also shifts part of the cost of the Steinbrenner effect to all clubs in the league. Consequently, all owners are subject to player cost inflation and franchise depreciation resulting from the Steinbrenner externality. Because of the Steinbrenner externality and the absence of efficiency control in syndicated ownership, the Steinbrenner effect can effectively dominate other clubs and, at the limit, a league with a large concentration of syndicated sportsmen will drive other ownership forms from the league.

The extinction of the sportsman is shown in Figure 6. Compare the Steinbrenner effect in isolation at B to the pure sportsman league equilibrium at A for the franchise valued at V_0. If

---

15. The general solution for the player cost differential is $[r^*\theta(1 - \alpha)/\alpha] + \{[(1 - \lambda) - \alpha]\varepsilon\theta/[\alpha(1 - \lambda)]\}$, where the second term vanishes under the conditions of $\alpha = 1 - \lambda$.

16. Ironically, the use of debt creates less business risk tolerance in the operations of the club after it has fostered an incentive for greater operational risk. The "heads I win, tails you lose," agency effect is difficult for LBO advocates to counter. Jensen concedes, "The fact that LBO . . . managers control the LBO Association's small equity base but hold little of the debt creates incentives for them to take high-risk management gambles. If their gambles succeed, they reap large rewards by increasing their equity value; if their gambles fail, creditors bear much of the cost" [5, 70].
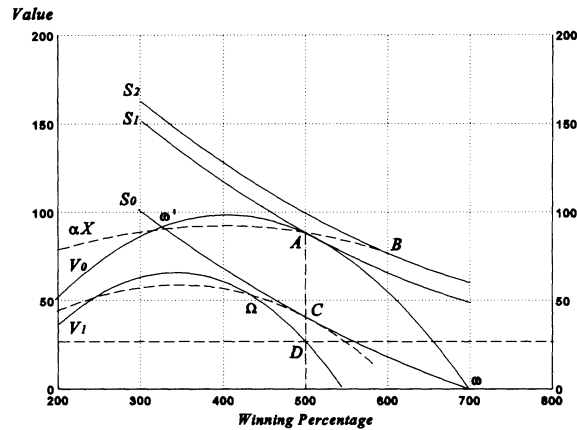
Figure 6. The Extinction of the Sportsman

the value of a franchise were to fall below S_0 and beyond the limits of the Scitovszky existence envelope ω-ω', then ownership of the franchise would be sold. The individual equilibrium of the GP owner at B creates a league disequilibrium and an excess demand for playing talent. Inflation in player costs would ensue and continue until a syndicated sportsmen league equilibrium was reached at C. In direct proportion to the concentration of syndicates in the league, the value functions of all clubs in the league would approach V_1 and the specific franchise values would approach D in league equilibrium. In a syndicated-league environment, pure sportsman owners would be driven from the prior equilibrium A to the syndicated-league equilibrium Ω along V_1, below S_0 and beyond the Scitovszky existence envelope ω-ω'. Increased player costs and reduced cash flow at Ω would no longer compensate the sole sportsman for losing, and he would be forced to sell his club outright or to syndicate his current ownership equity.

The leveraged owner may coexist with the syndicated owner, but in time, he will also be forced to sell the club or seek limited partners. The leveraged sportsman can compete at C in Figure 6, but the degree of leverage consistent with that equilibrium *always* exceeds the degree of syndication consistent with the same equilibrium.[17] For example, if the GP's equity share is $\alpha = .55$ (as is Steinbrenner's) and $r^* = .8r$ and $\varepsilon = .2r$ (by assumption), then the degree of leverage consistent with the Steinbrenner effect at B would be approximately $\lambda = .80$.[18] Such a high degree of leverage would set the solvency requirement above D in Figure 6, engage the control effects of solvency and exhaust the Scitovszky existence residual. In contrast to the pure sportsman and syndicated sportsman, recall that operational decisions of the leveraged club are subject to higher risks in a controlled environment of shrinking risk tolerance. The operational control of financial leverage, in terms of both a reduced performance and lower range of performance tolerance, would self-constrain the on-field decisions of club managers. This would force the level of operation toward Ω and below the existence envelope ω-ω'. When the Scitovszky residual vanishes below B, the leveraged owner would be forced to sell the club, to seek alternative revenues or to retire debt through ownership syndication. This leads to a survival of the syndicate proposition.

---

17. The proof is straightforward. If $\alpha = 1 - \lambda$ at B, then the agency effects r/ρ for leverage must be equal to the α effects for syndication. In order for $r/\rho = \alpha$, where $r = r^* + \varepsilon$ and $r = r^* + \varepsilon/(1 - \lambda)$, the risk free rate r^* must equal zero.

18. The equality $r/\rho = \alpha$ reduces to $\alpha = 1/[\eta + \eta/(1 - \lambda)]$, where $\eta = r^*/r$.

PROPOSITION 11. *There exists a threshold concentration of syndicated owners in a sports league that will inflate player costs and compress franchise equity to the extent that it will either drive pure sportsman and leveraged sportsman owners from the league, cause them to explore alternative revenues through franchise relocation and stadium extortion or otherwise force them into ownership syndication.*

III. Empirical Evidence

The Owners

Initial support for the theory can be drawn from a review of the MLB ownership histories summarized in Tables I, II and III for large, intermediate, and small revenue MLB clubs.[19] The free agency period began with an abundance of sportsman owners in league with a few limited partnerships and Subchapter S corporations. Player costs exploded from 20 percent to 40 percent of total MLB revenue during the first five years of free agency (1976 to 1981), and sportsmen began to sell their clubs. The transition of MLB from a league of pure sportsmen to leveraged sportsmen was made in 1984, when Calvin Griffith, "the last of the dinosaurs," sold the Minnesota Twins/Washington Senators (family owned since 1919) for $34 million to financier Carl Pohlad (LBO partner of Irwin Jacobs). In the same year, thirty-year owner John Fetzer sold the Detroit Tigers for $53 million to the highly leveraged owner of Domino's Pizza, Tom Monaghan. After the 1984 World Series, the business oriented Peter Ueberroth replaced the baseball traditionalist Bowie Kuhn as MLB Commissioner.

The extinction of the sportsman and the proliferation of highly leveraged MLB ownership syndicates during the 1980s were a highly visible part of the deeper LBO revolutionary movement.[20] Three ownership transfers in 1989 were particularly representative of the prevailing LBO influence. First, Eli Jacobs bought the Baltimore Orioles from the estate of Edward Bennett Williams for a bargain price of $70 million. Jacobs had previously executed a series of LBOs in the late 1980s backed by Drexel Burnham Lambert junk bonds.[21] Failures of these HLTs ultimately forced the sale of the profitable Orioles in a bankruptcy auction in 1993 for $173 million. Second, Jeff Smulyan purchased the Seattle Mariners for $76.1 million in syndication with Emmis Broadcasting and Morgan Stanley & Company.[22] Through his privately held Emmis, Smulyan had previously acquired undervalued radio stations in a series of LBOs during the 1980s. The Emmis bottom line fell from a $25 million profit in 1989 to a $23 million loss in 1991, and the Mariners

19. Recall that predictions of the theory are made for the average MLB franchise. Large revenue clubs may survive under nonsyndicated ownership over time, but they will probably develop strategies to buffer the effects of the Steinbrenner labor market externality. For example, when Gene Autry sold 25 percent of the California Angels to Disney for $30 million in 1995–6, the Los Angeles Dodgers became the last club to be owned by a sole sportsman, Peter O'Malley. The Dodgers have historically eschewed talent from the open market in favor of talent developed internally within their farm system.

20. Other owners of the period matched Pohlad, Jacobs, Smulyan and Rose in LBO/HLT experience: Jerry Reinsdorf and Eddie Einhorn (White Sox, 1981); Ted Turner (Atlanta Braves, 1976); Taft Broadcasting (Philadelphia Phillies, 1981–86); Peter Magowan (San Francisco Giants, 1992); Tom Monaghan (Detroit Tigers, 1983–92); Charles Bronfman (Montreal Expos, 1968–90); Walter Haas (Oakland A's, 1980–95). For a recent history of MLB, see Helyar [4].

21. Memorex ($523 million) and Telex Corporation ($1 billion) in 1986 and Triangle Pacific ($406 million) in 1988.

22. Smulyan and Mike Browning each held 10 percent equity, Emmis owned 47 percent and Morgan Stanley held 27 percent in the Mariners and about 25 percent in Emmis. The amount of debt in the sale was about $35 million.

Table I. Ownership Histories and Franchise Values for Major League Baseball: Large Revenue Teams ($millions)

MLB Franchise	1994 Value	Local Media	Last Price	Year Sold	Current Ownership	Ownership History
New York Yankees	166	47.0	10.0	1973	George Steinbrenner (American Ship Building, becomes 55% GP in 1976) group from CBS	CBS from Dan Topping and Del Webb in 1964 ($11.2m)
Toronto Blue Jays	150	14.6	134.0	1991	John Labatt, Ltd. (brewing) 90%, buy out of Howard Webster estate's 45%	Webster/Labatt's 45/45 expansion syndicate (Canadian Imperial Bank 10%) in 1976 ($6.5m)
New York Mets	147	37.5	100.0	1986	Nelson Doubleday and Fred Wilpon (developer) from Doubleday, Inc.	Doubleday, Inc. (publishing) from Joan Payson estate in 1980 ($21.1m)
Boston Red Sox	141	22.0	15.0	1978	John Harrington (accounting) JRY Corp after death of Jean Yawkey in 1992	JRY buy out of GP Haywood Sullivan (12%) in 1993 ($32m) and Buddy LeRoux in 1987
Los Angeles Dodgers	138	18.0	4.2	1950	Peter O'Malley and sister Terry Seidler, inherited from Walter O'Malley (d. 1979)	Moved to LA in 1958; O'Malley buy out of Branch Rickey in 1950
Chicago White Sox	133	7.0	20.0	1981	Jerry Reinsdorf 10% (tax lawyer) and Eddie Einhorn (TV) syndicate from Bill Veeck	Veeck (baseball) syndicate from John Allyn in 1975
Baltimore Orioles	129	13.3	173.0	1993	Peter Angelos 50% (labor lawyer) and Bill DeWitt group from Eli Jacobs (finance) group	Jacobs 87% and Sargent Shriver from estate of Edward Bennett Williams in 1988 ($70m)
Chicago Cubs	120	20.0	20.5	1981	Tribune Company (publishing) from Bill Wrigley (chewing gum) 81% of corporate stock	Inherited from Phil Wrigley in 1977 who inherited from William Wrigley in 1932
Colorado Rockies	110	4.0	95.0	1992	Jerry McMorris (NW Transport) 30%, Coors Beer syndicate (original group restructured)	

Sources: *Baseball Weekly, Broadcasting and Cable, Financial World, New York Times, Washington Post*, and Quirk and Fort [12].

Table II. Ownership Histories and Franchise Values for Major League Baseball: Intermediate Revenue Teams ($millions)

MLB Franchise	1994 Value	Local Media	Last Price	Year Sold	Current Ownership	Ownership History
Texas Rangers	132	10.8	80.0	1989	George Bush 5% Rusty Rose 10% (finance) syndicate from Eddie Chiles 58% ($46m)	Eddie Gaylord 30% in 1985, Chiles from Brad Corbett in 1980 for $25m
Oakland Athletics	114	14.6	85.0	1995	Steve Schott and Ken Hoffman (developers) from Walter Haas (Levi-Strauss) family	Haas group from Charlie Finley in 1980 for $12.7m; team moved from KC in 1967.
St. Louis Cardinals	105	5.0	150.0	1996	Fred Hanser, Andrew Baur and Bill DeWitt syndicate from Anheuser-Busch.	Anheuser-Busch Corporation (Budweiser) in 1953 from Fred Saigh ($3.8m)
Cleveland Indians	100	4.5	35.0	1986	Richard 75% and David (d. 1992) Jacobs 25% (developers) from Steve O'Neil estate	Steve O'Neil (d. 1983) syndicate in 1977 from Nick Mileti group (since 1972) $10.3m
Philadelphia Phillies	96	13.5	51.0	1986	Bill Giles 19% buy out of Taft Broadcasting 47.3% for $24.1m	Bill Giles (baseball) group from Carpenter family (since 1943) in 1981 for $30.2m
Atlanta Braves	96	19.0	11.0	1976	Ted Turner (broadcasting corp.) from William Bartholomay syndicate	Bartholomay from Perini group in 1962 for $6.2m; team moves from Milwaukee, 1966
San Francisco Giants	93	11.5	100.0	1992	Peter Magowan 10% (Safeway CEO) syndicate from Bob Lurie	Lurie buy out of Bud Herseth (49%) in 1977 for $5m; after 1976 purchase for $8m
Detroit Tigers	89	11.5	85.0	1992	Michael Ilitch (Little Caesar's Pizza) from Tom Monaghan (Domino's Pizza)	Monaghan from John Fetzer (since 1956) in 1983 for $53m
Cincinnati Reds	86	8.2	24.0	1984	Marge Schott 43% (car dealer) buy out of Francis Dale group	Dale group from Bill DeWitt group in 1966, since 1962 ($4.6m)
Houston Astros	85	7.5	90.0	1992	Drayton McLane (Wal-Mart) from John McMullen group	McMullen group from Roy Hofheinz creditors (GE, Ford) in 1979 for $16m
Florida Marlins	81	12.5	95.0	1992	Wayne Huizenga (Blockbuster Video)	

Sources: *Baseball Weekly, Broadcasting and Cable, Financial World, New York Times, Washington Post,* and Quirk and Fort [12].

Table III. Ownership Histories and Franchise Values for Major League Baseball: Small Revenue Teams ($millions)

MLB Franchise	1994 Value	Local Media	Last Price	Year Sold	Current Ownership	Ownership History
Milwaukee Brewers	96	5.5	10.8	1970	Bud Selig 25% (car dealer) syndicate from bankrupt Dewey Soriano Seattle Pilots group	Expansion Seattle Pilots 1968 ($5.5m) moved to Milwaukee in 1970
Kansas City Royals	94	5.0	22.0	1983	David Glass (Wal-Mart) Kauffman trust CEO since death of Ewing Kauffman 1993	Kauffman reacquired 50% in 1990 from Avron Fogelman for $34m after sale in 1983 for $10m
California Angels	93	11.3	120.0	1995	Gene Autry (real estate, TV) 25% Walt Disney Company in 1995 ($30m)	Original LA franchise ($2.1m in 1960) moved to Anaheim in 1965
San Diego Padres	85	9.3	100.0	1994	John Moores (computer software) 80% group from Tom Werner (TV) group	Werner group from Joan Kroc (McDonald's Ray Kroc d. 1984) in 1990 for $75m
Minnesota Twins	83	4.5	34.0	1984	Carl Pohlad (finance) from Calvin Griffith and Gabriel Murphy	Washington team moved 1961, Clark Griffith 50% in 1919 ($.36)
Seattle Mariners	80	5.5	106.0	1992	Hiroshi Yamauchi (Nintendo) group (John Ellis 1%) from Jeff Smulyan (broadcasting)	Smulyan syndicate from George Argyros in 1989 for $80m; since 1981 for $13.2m
Pittsburgh Pirates	79	6.5	90.0	1995	Kevin McClatchy 20% (newspaper publishing) syndicate from Westinghouse, PPG group.	PPG group from John Galbreath ($22m) in 1985; Warner Communications 49%, 1983.
Montreal Expos	75	7.5	86.0	1990	Claude Brochu 7.5%, 14 member public-private group (city, province) from Charles Bronfman	Bronfman (Seagram's) syndicate original franchise in 1968 ($12.5m)
Expansion Franchises: Arizona Diamondbacks	—	—	130.0	1995†	Jerry Colangelo (Phoenix Suns), Ed Lynch, John Teets group (1%); with several LP's	
Tampa Devil Rays	—	—	130.0	1995†	Vince Naimoli Group (9 LP's) similar to group that bid $115m for Giants in 1992	

† The $130 million franchise fee is paid in installments: $32 million, $25 million, $40 million on 1 July, 1995, 1996 and 1997; and $33 million on 1 November, 1997. The expansion clubs will each forgo an additional $25 million in shared MLB revenue during the first five years, and will begin play in 1998.

Sources: *Baseball Weekly, Broadcasting and Cable, Financial World, New York Times, Washington Post,* and Quirk and Fort [12].

were not generating a cash flow sufficient to support their own debt. Smulyan was forced to sell the Mariners in 1992 for the invested capital of $106 million ($76 million original price and $30 million additional debt for operating expenses). Third, George W. Bush, in syndication with Rusty Rose, Richard Rainwater, Bill Dewitt and others, bought 58 percent of the Texas Rangers for $46 million from the highly leveraged oil man Eddie Chiles.[23] Rose, Rainwater and other investors were heavily involved with Drexel Burnham Lambert junk bond LBOs of the 1980s.[24]

Since the beginning of free agency, MLB owners had self-imposed an informal "60/40 rule" that sought to restrict the use of leverage in the purchase of a franchise to 40 percent of its value. After 1983, the rule was to apply to the operation of all clubs at all times. On closer examination, however, the design of the rule was such that the permissible level of debt was actually 40 percent of the value of the average MLB franchise. According to this "60/40 rule," a small revenue franchise that was valued at two-thirds of the league average could actually maintain a 40/60 equity-debt ratio, whereas a large revenue franchise valued at twice the league average would be restricted to a 80/20 equity-debt ratio. The purpose of a rule that allowed a higher degree of leverage for the smaller clubs (the same total debt for all clubs), was actually to limit the leverage of the larger franchises, specifically the Steinbrenner Yankees.[25] Ironically, according to the control function of debt, the regressive design of the rule could paradoxically restrict the salary costs of the more highly leveraged small revenue clubs, and indirectly improve the competitive position of the large revenue clubs.[26]

There is evidence in the 1990s that MLB owners are seeking a greater restriction of the leverage involved in franchise purchases. For example, an agreement to buy the Pittsburgh Pirates for $90 million by a syndicate headed by Sacramento newspaper heir Kevin McClatchy was approved by the MLB ownership committee late in 1995, when the terms of the deal included the assumption of $65 million in prior debt. At this early stage of the deal, the syndicate's $25 million equity implied a relatively high leverage ratio of $\lambda = .72$. MLB owners then suggested that, if the deal were to reach final approval by MLB ownership,[27] McClatchy must expand his ownership syndicate to reach a required goal of $60 million in equity.[28] Based on a $90 million price, this would imply the imposition of a strict two to one (67/33) equity/debt rule for new ownership in MLB in the 1990s.

Although the financial terms of franchise ownership are fully disclosed only on rare occa-

---

23. Chiles bought the Texas Rangers from Brad Corbett in 1980 for $25 million, with $21 million in deferred salaries. Chiles had twice attempted to sell his share to Edward Gaylord who owns 33 percent of the Rangers, but was rebuffed by MLB owners, because of Gaylord Broadcasting ownership of cable TV stations, especially KTVT in Dallas/Fort Worth.

24. In 1988 Rose (Harvard MBA), Rainwater (Stanford MBA) and William Shirley, another Ranger partner, received multimillion dollar special dividends from the LBO/restructuring of Darling Delaware Company (fat rendering).

25. The National Football League imposes an absolute debt limit on ownership. Art Modell, owner of the Cleveland Browns, reached the $50 million debt limit in 1995 when he sought to cash out franchise equity by moving the club to Baltimore for the 1996 season. The NFL also requires that one member of a syndicate be a majority ($\alpha = .51$) partner.

26. At the time the MLB Players Association argued that such a rule curbed player salaries for the opposite reason that a leverage rule would collusively restrict club spending on player salaries [2].

27. A similar offer by a group headed by John Rigas had previously been rejected. Approval of a sale requires three-fourths of owners in the league in which the franchise plays, and a simple majority of the owners in the other league. In this case, 10 of 14 National League owners and 8 of the 14 owners from the American League must approve the capital structure.

28. The city of Pittsburgh agreed to the following lease concessions: a "lease enhancement" payment of $3.5 million; loans of $11.5 million from Urban Redevelopment Authority and the State; 40 percent of the luxury box fees; and all of the stadium revenue from concessions. The club can be moved if the team loses $15 million and a new stadium isn't finished in 5 years.

sions, the trend in the 1990s seems to be toward "leverage" through syndication. For example, in the $90 million syndicated (12 partners) deal for ownership of the Pirates, McClatchy put down only $12 million of the $60 million in required equity. Bush and Rose were the GPs for the group of 15 partners to purchase the Texas Rangers in 1989 for an implicit price of $80 million. Although Bush was the most visible GP, until he was elected Governor of Texas, his original share was less than five percent with an initial investment of only $500 thousand. Similarly, the ownership syndicate that was awarded the Arizona Diamondbacks expansion franchise in 1995 will pay an expansion fee of $130 million.[29] Jerry Colangelo ("owner" of the Phoenix Suns NBA franchise), Eddie Lynch and John Teets are the visible GPs, but they will invest only $1.1 million total in the 20 member syndicate. According to the unified theory, the revolution in ownership structure is the protracted consequence of the purchase of the New York Yankees in 1973 by a 15 member syndicate headed by George Steinbrenner.[30]

The Profit Contradiction

One empirical anomaly contradicts the foundation of the unified theory together with the underlying logic of capital asset pricing theory. MLB player costs rose by more than 15 percent during the period of ownership revolution and/or free agency, whereas total (reported) MLB revenue increased by only 11 percent. Ironically, franchise values were appreciating at approximately the same 15 percent rate as player salaries over the same period. The player cost escalation is consistent with the unified theory, but the simultaneous appreciation in franchise values is not. Why would franchise values paradoxically rise when profit margins of MLB clubs were experiencing such a significant player cost squeeze? Quirk and Fort [12] detect an "explosion in franchise values in all leagues since the mid-1970s" [12, 72], and advance the ad hoc explanations of speculation bubbles and Bayesian expectation adjustments to exogenous revenue shocks. Both explanations are reasonable, but under either hypothesis an appreciation in franchise values is clearly unsustainable. Scully [16] compares the price of clubs when purchased with their appraised values in 1991, and finds a mean annual rate of appreciation of 15.1 percent for all sports leagues and 15.3 percent for MLB. He observes "that there are no differences in the rates of return (appreciation) by sport or market size" [16, 133].[31] This leads to the conclusion that the cause of the appreciation of franchise values should lie in the common legal and macroeconomic environment of all leagues.

Consider first the institutional environment of monopoly and monopsony that surrounds the operation of sports franchises. The bundle of rights that defines each franchise grants the club the monopoly power to set ticket prices, to negotiate exclusive media rights, to participate in merchandise licensing and franchise expansion fees, and to extort local and state governments into sweetheart stadium agreements.[32] The value of each of these rights is, of course, the difference

---

29. The expansion clubs must also forego revenue sharing for 5 years for an additional cost of about $25 million.

30. The group was originally headed by Michael Burke, who had run the team for CBS since 1964, and Steinbrenner, but Burke, who had met Steinbrenner only a few months before the deal, was forced out within four months after the purchase. Burke was responsible for the price of $10 million for the club that was $3.2 million less than CBS had paid in 1964. By 1976 Steinbrenner had acquired six of the original 11 partnership shares to become 55 percent majority owner.

31. Scully [15] suggests that the escalation is the result of a "winners curse" inherent in auction markets. For example, bidding began at $141 million in the bankruptcy auction of the Baltimore Orioles in 1993 and ended at $173 million.

32. In 1981 the Chicago White Sox signed a provisional agreement to move the club to St. Petersburg, Florida if the Illinois legislature did not meet the White Sox demands for a new stadium.

between the monopoly revenue derived from the right and the potential revenue under competition. Each of these "rights" may be difficult to separate from the bundle, but the anticipated cash flow from the monopoly bundle should be ascertainable from current franchise revenue projections and should, therefore, be reflected in the franchise price. This is to say that the growth in the cash value of monopoly rights should be already included in the eleven percent MLB revenue growth over the free agency period.[33]

In addition to these accountable monopoly rights, however, the bundle of rights also gives each franchise the monopsony power to exploit its players under the modified reserve systems of each of the leagues. Although the amount by which the value of a player's marginal product exceeds his salary has been frequently measured [15; 19; 20], the cash-flow gain from exploitation is absent from franchise operating statements, because the monopsony gain is a cost that is never actually incurred. Further, there is evidence that significant exploitation of players continues to exist after the player cost explosion of the leveraged-syndicate transition.[34] Therefore, even if the *rate* of player exploitation remains constant, the expected value of the exploitation stream would grow at the rate of increase in foregone player salaries. The cash flow and value of sports franchises are inversely related to player costs, but the value of the franchise is directly related to its monopsony right to exploit players. The present value of the monopsony right to the exploitation stream is not present in the financial data of MLB clubs, but it is part of the bundle of franchise rights and, as such, it is reflected in the club's market price.[35]

Consider also the public policy environment that simultaneously cradled the evolution of free agency and the emergence of leveraged ownership syndicate in MLB. In this environment, the value of a sports franchise is the present value of anticipated after-tax cash flow. Franchise values can increase under a profit squeeze, if the policy environment is characterized by declining tax rates, increased depreciation allowances, and a declining cost of capital. These were the ambient conditions of the 1980s. The Economic Recovery Act of 1981 lowered the top marginal personal income tax rates from 70 to 50 percent and sought parity between personal and corporate income tax rates. This increased after tax cash flows and effectively negated the tax advantage of the

---

33. MLB clubs have historically understated revenues. For example, the Tribune Company owns the Chicago Cubs and superstation WGN and Turner Broadcasting owns the Atlanta Braves and the superstation TBS. The media rights fees reported for both franchises are well below the market value for comparable clubs.

34. An anonymous referee correctly observes that the value of the monopsony right is more accurately represented by the present value of the *net* exploitation stream after player development costs. This is true, but player development costs are an itemized franchise expense (estimated at $9.2 million per MLB club in 1994), whereas the gross exploitation stream is a cost that is not incurred. As such, *gross* exploitation is unaccounted for in the operating profit statements of sports franchises. In the 1994 season approximately 42 percent of MLB players were not eligible for either salary arbitration or free agency. The average salary for those 310 players of $204 K was an estimated 28.1 percent of the value of their marginal product. This implies that each club extracted, on average a surplus of 2.56 times the $204 K salary for each of 11 restricted players. This creates an unaccounted gross exploitation stream of $5.7 million per club in 1994, projected to grow at eight percent. See Vrooman [19] and Zimbalist [20].

35. Under current tax law the "value of player contracts," which presumably is measured by the monopsony right, is considered a depreciable asset and part of the purchase price. As such the monopsony right can be sheltered from taxation. At the outset of free agency, the 1976 Tax Reform Act created a new section in the Internal Revenue Code (IRC, sec. 1056) to close the well documented [12; 20] "Veeck" depreciation loophole. Before the 1976 Act and *Laird v. United States*, 566 F.2d 1244 (1977), *cert. den.* a club owner could expense and fully depreciate the player contracts from the franchise price and shelter that amount from taxation. The owner could then sell the club to a buyer who could repeat the process. After the Act, the portion of the amortizable amount was restricted to 50 percent, the amount of depreciation was subject to capital gains tax at the time of sale, and the buyer was made to take a basis in the player contracts equal to the seller's basis adjusted upward for any gains made by the seller. The value of the loophole throughout the free agency period was then reduced to the present value of taxes postponed. Under 1994 conditions the loophole would amount to an increase in the franchise value of 11 percent under buy and sell, and 18 percent under buy and hold strategies.
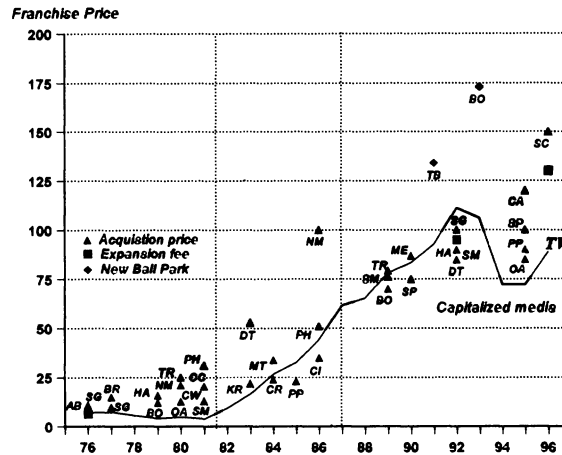
Figure 7. MLB Franchise Prices in the Free Agency Era

corporate over the syndicate ownership form.[36] The 1986 Tax Reform Act again reduced the upper income tax bracket from 50 to 28 percent and sought parity between personal income and capital gains tax rates. This further enhanced after tax cash flows and negated the tax advantage of equity over debt in capital formation. The monetary environment was equally favorable. After the prime interest rate had risen from 6.8 percent in 1978 to 18.9 percent in the MLB strike year 1981, the rate continuously fell to six percent by the strike year 1994. These favorable tax and money market conditions would alone lead to a quintupling of asset values between the strikes of 1981 and 1994. If total media revenues, which increased from $2 million annually per club in 1976 to $28 million in 1993, are adjusted for the growth in player costs and then capitalized in this environment, they roughly approximate the growth in franchise values over the free agency period. Compare, in Figure 7, the actual growth in MLB franchise prices with media revenues capitalized under the conditions of the free agency period.[37]

Dynamic Theory

The appreciation of franchise values leads to the revealing question as to how the decision of an owner to sell a sports franchise, when its value was rising, can be incorporated into the dynamics of the unified theory. There is only one treatment of the decision to sell a sports franchise in the literature. Scully [16] observes that the on-field fortunes of sports teams are subject to momentum talent cycles, due to the growth and depreciation of playing talent and the experience composition of a club's roster. "Veteran star players attract fans for reasons beyond their playing skills (recognition and reputation). Because the roster size is fixed and aging veteran skills are on the decline, the retention of these players leads to a decline in club standing. Eventually the stars are replaced with rookies, and the club's fortunes on the field decline until the new rookie talent

---

36. The last of MLB's publicly held corporations, the Chicago Cubs, was sold with Wrigley Field in 1981 by the majority stockholder Bill Wrigley to The Tribune Company for $20.5 million. Wrigley held 81 percent of 10,000 shares.

37. The net present value of media rights fees μTV under a buy and hold investment strategy is derived from $\mu = \delta[(1 - \tau p)(1 - \gamma)/r]$ where $\delta = 1/[1 - (\phi \tau p PVA_n/n)]$ is the present value of the depreciation loophole, ϕ is the portion allocated to player contracts (.5), τp is the top marginal tax rate, PVA_n is the present value of an annuity for $n = 5$ years, γ is the ratio of player costs to total revenue and r is the prime rate $+.02$.

matures" [16, 110]. Scully maintains that this cycle "mimics a pattern of good and bad reputation," and that clubs at either the good or bad extreme of the reputational capital cycle have a high probability of being sold. There are two problems with Scully's theory. The first concerns the formulation of a owner's decision to sell as being passively subject to the vicissitudes of his club's talent level. It is equally likely that a sportsman owner will make the decision to sell for other reasons, and that the talent level of the club will be downgraded by the owner to achieve the highest possible price. The second problem centers on the assertion that a club with either an extremely bad reputation or an extremely good reputation will probably be sold. The argument cannot run both ways. Scully correctly reasons that the assets of the club with the bad reputation will exchange for less than the assets of a club in a market of similar size with an average reputation, and that "clubs with good reputations will exchange at price above the price of a club in a market of similar size with an average reputation" [16, 111]. However, Scully then draws the inference that the probability of a sale is high for clubs with bad *and good* reputations. According to the unified theory, clubs at the extremes of the talent spectrum will be undervalued at ω' and B in Figure 1. The losing club would probably be sold for its book value at ω'. If the winning team (average team in a sportsman league) is to be sold, however, the price must cover the book value of the club at B, but also compensate the sportsman for his satisfaction derived from winning. A club operating at the undervalued equilibrium B in Figure 1 must be sold for a price commensurate with A to compensate the sportsman for his total franchise package.[38] It is improbable that a winning club with the book value of B would be sold at the exchange price of A.

Implicit in Scully's argument is the assumption that franchise value lags behind a club's capacity to win, and that a club's talent level and its value both move cyclically. Franchise values can be viewed as cyclically fluctuating between V_0 and V_1 in Figure 6 as they are simultaneously being compressed from the ownership syndication within the league. This dynamic still leads to the conclusion that a club will be sold when its value fails to compensate the sportsman owner for the on-field performance of his team. Variation in performance may derive from a combination of a team-specific talent cycle or a league-specific Steinbrenner effects, but it is more likely that this condition for a sale will hold for losing clubs than for winning clubs.[39]

This leads to the question as to why a nonspeculative sportsman owner would sell a franchise that was still increasing in value. According to the static theory a club will be sold with the exhaustion of the Scitovszky residual above ω-ω' in Figure 6. In the static theory the residual is compressed from above by Steinbrenner effects in league equilibrium. By assumption, this residual return is equivalent to the return from franchise ownership in excess of foregone investment opportunities (the vertical distance under ω-ω'). In a changing environment, however, a club could be sold from a dynamic compression of the Scitovszky residual from below. An MLB club would be sold in the investment climate of the leveraged-syndicate transition period,

38. A club could be valued at B if the transaction was a partnership buy-out, or if the sale followed the death of the owner. The heirs need not be compensated for winning, and the club would be valued and exchanged at the book price at B.

39. Of the 40 franchises sold in the free agency period, only 5 were World Series caliber teams, and only one of these was a complete ownership transfer. The Detroit Tigers were sold by John Fetzer to Tom Monaghan for an overvalued price of $53 million in 1983. The rest were partial ownership transfers or partnership buy-outs. Jerry Hoffberger sold the Baltimore Orioles to Ed Williams in 1979, but retained 20 percent. The Philadelphia Phillies were sold in 1981 by Rudy Carpenter to Bill Giles, executive VP of the club for the overvalued price of $30.2 million. (The Chicago Cubs had sold that year for $20.5 million). The New York Mets were sold in 1986 for $100 million by Doubleday & Company and Fred Wilpon (95/5) to Nelson Doubleday and Wilpon (50/50) as part of the sale of Doubleday & Company. In 1991 Labatt's bought out 45 percent of the Toronto Blue Jays from the estate of Howard Webster for an implicit price of $134 million.

if the value under ω-ω' was to grow at a rate greater than the 15 percent appreciation in franchise values. Further, syndicated sportsman owners can be expected to incur non MLB indebtedness in addition to their diversified non MLB equity holdings. If the burden of the outside debt becomes excessive, it will effect a compression of the Scitovszky residual from below in a manner similar to the club's own debt shown in Figure 5. Initially the outside debt will negate the Steinbrenner effect, and at sufficient levels, it will force the sale of a financially secure franchise.[40] In a dynamic sense, the Scitovszky envelope is determined by the relative movements of franchise value and the threshold combination of franchise value and winning required to keep the owner in the game. Franchise values may change from internal talent cycles and external league competition for talent, and the existence threshold may change due to internal or external debt requirements and the opportunity cost of capital.

Sportsman Effect Revealed

According to the theory, Steinbrenner effects are derived from and necessarily dependent upon the existence of the sportsman effect. A priori comparisons among the relative performances of sportsman-owned clubs with different financial and ownership structures can be made, but empirical evidence in support of the theory ultimately requires the isolation of the sportsman effect. In spite of the increasingly public nature of the financial operation of major sports franchises, detailed financial information about club ownership remains cloaked in proprietary secrecy. There has been, however, sufficient turnover in franchise ownership to partially reveal the average franchise value that MLB sportsman owners have been willing to sacrifice in the operation of their clubs during the period of free agency. It has been shown that MLB franchises have been expanded beyond their profit maximum and are undervalued in accordance with the sportsman and Steinbrenner effects (A and C in Figures 4 and 5). It has also been demonstrated that the sportsman will sell his club when the relative return from the financial performance of the franchise no longer compensates the sportsman for the on-field performance of his team (Ω in Figure 6). The sportsman will not likely find a buyer for his club in its undervalued condition Ω, because he must also be compensated for his preference for winning. Therefore, once the decision is made to sell the club by the sole sportsman or by the levered sportsman (after the exhaustion of the Steinbrenner effect), the owner will no longer be willing to sacrifice cash flow for winning, and he will operate the club at the talent level that minimizes the difference between the asking price and bidding price. This leads to a final proposition.

PROPOSITION 12. *In order to receive the highest possible price for a franchise at the point of sale, the sportsman owner will downgrade the team's talent to the level that maximizes its book value. In the period when a franchise is on the market, player costs will be lower, and the value of a franchise will be accordingly higher than its previous operating value by the precise amount of the sportsman effect.*

During the free agency period over 40 MLB franchises were involved in ownership transfers in one form or another, such as partnership buyouts and expansions, public-private consortia and complete ownership transfers. The transfers were made under a variety of extenuating circumstances including the death or financial distress of principle owner. According to Proposition 12,

---

40. For example, see the discussion of the bankruptcy sale of the Baltimore Orioles by Eli Jacobs in 1993, *supra.* The Orioles had generated a profit of $20 million on $80 million in revenues in 1992 at the new Oriole Park at Camden Yards.

Table IV. Franchise Ownership Transfers and Comparative Labor Costs in the Free Agency Era[X]

Franchise	Market Period	Price	T_{-2}	T_{-1}	T_0	T_{+1}	T_{+2}
Houston Astros‡	1976–9	16.0	0.736	0.707	0.648	1.229	1.404
New York Mets†	1976–9	21.0	0.773	0.863	0.824	0.880	1.084
Baltimore Orioles*	1978–9	13.0	0.933	0.830	0.891	0.915	1.005
Oakland Athletics	1976–80	12.7	0.493	0.363	0.382	0.798	1.103
Chicago White Sox	1979–80	20.5	0.814	0.657	0.503	1.038	1.026
Texas Rangers	1980	25.0	1.213	1.134	1.035	0.959	0.772
Chicago Cubs‡	1981	20.5	0.916	1.114	0.674	0.914	0.930
Philadelphia Phillies*	1981	30.2	1.743	1.539	1.562	1.617	1.529
Seattle Mariners*	1981	13.2	0.544	0.572	0.513	0.474	0.411
Pittsburgh Pirates*	1982	20.8	1.385	1.111	1.040	1.089	1.004
Detroit Tigers	1982–3	53.0	0.865	0.721	0.913	1.127	1.067
Minnesota Twins	1982–3	34.0	0.461	0.279	0.339	0.522	0.677
Cleveland Indians†	1984–5	35.0	0.837	0.485	0.577	0.654	0.688
Seattle Mariners	1987–9	80.0	0.531	0.554	0.602	0.650	0.707
Texas Rangers	1985–8	80.0	0.588	0.570	0.550	0.752	0.866
Baltimore Orioles†	1988	70.0	1.089	1.189	0.968	0.653	0.467
San Diego Padres†	1986–90	75.0	0.934	1.052	1.098	0.833	0.952
Seattle Mariners	1992	106.0	0.650	0.707	0.743	0.876	0.874
Houston Astros	1991–2	90.0	1.141	0.464	0.541	1.061	1.016
Detroit Tigers‡	1992	85.0	1.131	0.998	0.916	1.160	1.276
San Francisco Giants	1992	100.0	1.116	1.269	0.989	1.106	1.299
Baltimore Orioles‡	1992–3	173.0	0.604	0.855	0.892	1.193	1.402
San Diego Padres	1993–4	100.0	0.952	0.338	0.423	0.736	—
California Angels*	1993–4	120.0	0.850	0.642	0.615	1.037	—
Oakland Athletics	1994	85.0	1.406	0.921	1.102	1.021	—
Pittsburgh Pirates	1994–5	90.0	0.680	0.644	0.579	—	—

*Partial ownership transfers
† Sales following the death of principal owner
‡ Sales under financial distress
[X] Partnership buyouts and transactions concerning public-private consortia are excluded.
Sources: Major League Baseball Players Association, Tables I, II and III.

the sportsman effect should be uncloaked in the market period prior to each of these transfers, with the possible exceptions of partnership buyouts and sales involving public-private consortia. Twenty-six MLB ownership transfers, in which the clubs were marketed wholly within the free agency period, are listed in Table IV, along with the period of time the clubs were on the market and the reported exchange prices. Partnership expansions (5), complete ownership transfers (13) and sales following the death (4) or financial distress (4) of the owner are included in the sample, and partnership buyouts (11) and public-private transactions (2) are excluded. The isolation of θ would preferably be accomplished through a comparison of the actual exchange price and the value of the club under sportsman operation. The reported exchange prices are reliable to some extent, but they are problematic in that each transaction involves a different bundle of rights, especially rights regarding stadium ownership and lease arrangements. Unfortunately, the exact operating values of sportsman clubs before and after market periods are, for all practical purposes, unknowable.

Recall, however, that the primary source of the franchise undervaluation is the premium paid for the playing talent necessary to accommodate the sportsman's preference for winning. Reliable

salary information is available for all clubs during each year of the free agency period. Relative player costs (team/league salary) for each of the 26 transactions in the ownership transfer sample are reported in Table IV for a five year period, before, during and after the final year (T_0) in which the franchise was on the market.[41] According to Proposition 12, sportsman owners will unilaterally reduce player costs in an attempt to make the franchise more marketable and receive the maximum price.[42] Relative player costs for most of the transactions appear lower during the marketing period than in the period prior to the decision to sell and the period following the sale.[43] A more precise isolation of the sportsman effect requires the estimation of a player salary equation during the free agency period with the inclusion of a binary variable for the marketing period preceding each of the ownership transfers:

$$\ln SAL = 5.24 + 1.28 \ln WIN + .165 \ln POP + .149t - .262MKT$$
$$(62.85)\ (12.67) \qquad (6.44) \qquad (62.48)\ (-6.20)$$

$$\hat{R}^2 = .898 \quad N = 494$$

where SAL is the average salary for team i in period t, WIN is the average winning percentage for team i in periods t and $t-1$, and POP is the club's home market SMSA population in 1990 for the 26 MLB clubs in existence for each of the 19 years of free agency 1976–95. The 1993 expansion Florida Marlins and Colorado Rockies are excluded. The market period binary $MKT = 1$ for each of the years that a club was on the market, and student "t" ratios are shown in parentheses. With the exception of MKT, this specification and these results are consistent with previous studies.[44] The player cost elasticity of winning, the market size effects on player costs and the 14.9 growth rate in player costs over the free agency period are statistically significant at .01.[45] The existence of the sportsman effect is confirmed by the significance of the MKT coefficient at .01. These estimates, which control for league salary escalation, market size and momentum cycle phase, lead to the conclusion that player costs were reduced by at least 23 percent $[1 - \exp(-.262)]$ during the market periods in which these MLB franchises were for sale.[46]

41. If the club was sold during the season, T_0 is that season. If the club was sold between seasons T_0 is the prior season.

42. The test of Scully's talent cycle as the source of franchise transfers could be made with the use of relative winning percentages during the marketing period. A more rigorous test of the manipulation hypothesis proposed here can be made using the relative team salaries. The owner has greater control over team input costs than performance output.

43. Of the clubs sold in the free agency period, only the 1981 Philadelphia Phillies had player costs significantly above the league average. The 1980 world Champion Phillies were sold for the premium price of $30.175 million to a syndicate headed by Bill Giles, the club's executive VP for 9 years, and Taft Broadcasting, itself the target of a subsequent hostile LBO.

44. These coefficients for the entire period are not significantly different than those previously estimated for the prestrike period 1990-92: $\ln EXP = 4.39 + 1.304 \ln WIN + .223 \ln POP + .140t$. EXP is total expenses. See Vrooman [18, 985].

45. The MKT coefficient decreases to $-.370$ (significant at .01) with the omission of WIN from the salary model. The total player cost reduction can then be estimated at 30 percent $[1 - \exp(-.370)]$. An autoregressive model with WIN as the dependent variable indicates that a club's winning percentage was 29 points lower in the market period (significant at .01). There is no support during the period for Scully's hypothesis that winning clubs are likely to be sold.

46. The precise measure of the sportsman effect on franchise values is more complicated, because this talent reduction would also reduce team wins and club revenues. Nonetheless, a 23 percent increase in franchise values should still serve as a significant *lower* bound for the magnitude of the sportsman effect θ. A talent reduction would necessarily reduce player cost more than revenues, due to the club's previous undervaluation by the sportsman owner.

IV. Conclusion

It is fundamentally important to realize that the explosion in MLB player salaries during the free agency period has been the combined result of a myriad of factors other than free agency. It is argued in this paper that the escalation in player costs in MLB finds its source in the complex structural relationships between the capital and labor markets of MLB. The unified theory developed in this paper explores the implications of the general case of the sportsman owner who seeks to jointly optimize profits and winning. When the sportsman exception becomes the general rule, the financial and ownership structures of a sports club necessarily affect the demand for athletic talent. Specifically, the use of financial leverage or ownership syndication creates an incentive for sportsman owners to expand the talent level of their clubs beyond the optimum that would prevail if they were bearing the full cost alone. These Steinbrenner agency effects within the environment of free agency emerge as a major source of the salary escalation in MLB during the free agency period, rather than free agency itself. The theory suggests that, under league competition, the Steinbrenner effects from leveraged syndication will increase player costs and reduce franchise values for owners of all clubs within the league. At critical concentrations of syndicated Steinbrenner clones within the league, sole unlevered sportsmen will be driven into extinction, and highly leveraged ownerships will be ultimately forced into insolvency. Steinbrenner agency effects are necessarily dependent upon the sportsman effect, the existence of which is confirmed by evidence that player costs are cut by one-fourth as owners revert from sportsmen to value maximizers immediately prior to selling their clubs.

Several contradictory findings remain unresolved. Why do MLB franchise values continue to rise in the face the reported profit compression among MLB clubs? When MLB owners poor-mouth their operating losses in an environment of rising franchise values, perhaps they are revealing the extent of their monopoly power. If values continue to rise under these conditions, then the assets that are exchanged include monopoly rights not reflected in the capitalized stream of expected after-tax cash flows. Two public policy issues become clear. The first concerns the continued monopsony right to exploit talent not currently eligible for either free agency or salary arbitration. A second unresolved issue concerns the increased incidence of owners who extort stadium revenues from local governments. Stadium extortion is one of the expected consequences of sole sportsman or highly leveraged owner being driven to the threshold of extinction. Future research should address the monopoly right to extort tax-supported stadiums and lucrative lease agreements with the threat of franchise relocation.

References

1. Baumol, William J. *Entrepreneurship, Management, and the Structure of Payoffs*. Cambridge, Mass.: MIT Press, 1993.
2. Chass, Murray, "Baseball Union Says Rule Curbs Salaries." *New York Times,* 6 February 1983.
3. Fama, Eugene and Merton Miller. *The Theory of Finance*. Hinsdale, Ill.: Dryden Press, 1972.
4. Helyar, John. *Lords of the Realm: The Real History of Baseball*. New York: Villard Books, 1994.
5. Jensen, Michael, "Eclipse of the Public Corporation." *Harvard Business Review,* September-October 1989, 61–74.
6. ———, "Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers." *American Economic Review,* May 1986, 323–29.
7. ——— and William Meckling, "Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure." *Journal of Financial Economics,* 1976, 305–60.

8. Magowan, Peter, "The Case for LBO's: The Safeway Experience." *California Management Review.* Fall 1989, 9–18.

9. Miller, Merton, "Debt and Taxes." *Journal of Finance,* May 1977, 261–75.

10. Modigliani, Franco, and Merton Miller, "The Cost of Capital, Corporation Finance and the Theory of Investment." *American Economic Review,* June 1958, 261–97.

11. Quirk, James and Mohamed El Hodiri. "The Economic Theory of Professional Sports Leagues," in *Government and the Sports Business,* edited by Roger Noll. Washington: Brookings, 1974.

12. Quirk, James and Rodney Fort. *Pay Dirt: The Business of Professional Team Sports.* Princeton: Princeton University Press, 1992.

13. Rottenberg, Simon, "The Baseball Players Labor Market." *Journal of Political Economy,* June 1956, 242–58.

14. Scitovszky, T., "A Note on Profit Maximisation and Its Implications." *Review of Economic Studies,* 1943, 57–60.

15. Scully, Gerald. *The Business of Major League Baseball.* Chicago: University of Chicago Press, 1989.

16. ———. *The Market Structure of Sports.* Chicago: University of Chicago Press, 1995.

17. Stiglitz, Joseph, "On the Irrelevance of Corporate Financial Policy." *American Economi Review,* December 1974, 851–66.

18. Vrooman, John. "A General Theory of Professional Sports Leagues." *Southern Economic Journal,* April 1995, 971–90.

19. ———, "The Baseball Players' Labor Market Reconsidered." *Southern Economic Journal,* October 1996, 339–60.

20. Zimbalist, Andrew. *Baseball and Billions.* New York: Basic Books, 1992.