

Cheering for a Constrained Maximization Problem

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ABSTRACT: Commentary on Major League Baseball has taken a turn towards viewing it adversarially between labor and capital, with labor as the protagonist. This paper develops a rational choice description of the labor market institutions of baseball as a combination of the league evolving as means of taming externalities that arise from incentives for overinvestment and a labor union to check the cartel. Unions in sport are viewed favorably as endogenously emerging as solutions to specific problems. Inducing owners to spend more on labor in the short run will result in changes to future rules in labor agreements. Conventional fandom seeking teams to behave efficiently, or maximizing under a constraint, is argued to be a more coherent means of analyzing (and cheering) team behavior, and it does not amount to cheering for owners to profit.

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I. Introduction

This paper provides a scholarly statement against the drift within the sports media, especially in its coverage of baseball away from the economic way of thinking. It will argue that the collection of institutions that have evolved within Major League Baseball (MLB) approximate economic efficiency. In popular writing, the recent focus on labor share and player salaries (Strauss 2022) to the exclusion of conventional economic analysis of maximization under constraint represents a departure from the growing sophistication among those within and outside the sport. Concerns about equity and fairness are best addressed by the players and league themselves in the course of labor negotiations. Although this research question may appear to be somewhat low stakes, the way we talk about economics and markets can matter, and Deirdre McCloskey (2015; McCloskey and Carden 2020) has argued that it matters a lot.

The popular application of economics and statistical analysis to baseball, of course, is known as sabermetrics. Sabermetric analysis was the first mover in analytics taking over various corners of mainstream society, from other sports, to poker, and to business (Silver 2024). While publications such as *Fangraphs* or *Baseball Prospectus* publish analytically-inclined essays and data concerning nearly every dimension of the game, perhaps the core question at the heart of it has been the analysis of transactions and how to build a winning team (Thorn and Palmer 1984; Keri 2006; Gennaro 2007; Tango et al. 2007; Goldman 2012), with similar academic treatments of the same question running in parallel (Scully 1989; Bradbury 2011). These media exploded, of course, following the publication of *Moneyball* (Lewis 2003).

In the last decade, what had been at the forefront of improving the public's knowledge of analytics and the economic way of thinking has made way for what is essentially the opposite of it. The turn towards what could charitably be called heterodox economics can be marked by

Baumann (2014), an essay in *Grantland* titled, “Let Them Eat Money: MLB Salary Dumping, the Precursor to the Proletarian Revolution,” where the author claims that analysis of marginal cost and marginal benefit has turned fans onto the side of owners and against players. While sabermetrics has often leaned left in unobtrusive or beneficial ways (such as opposing corporate welfare), there had been few precedents for flipping the script and demanding that all transactions be viewed from the standpoint of the player, complete with heterodox economic rhetoric.

The perspective of this paper is that why baseball or sabermetrics is (or was?) “interesting” has long been undermotivated. Schwarz (2004: 1-3) tells a vignette of a 1850s businessman (“tobacconist”) finding order and beauty in a box score in the opening of his book on the history of statistics in baseball. Miller (2018), with ambiguous seriousness, attempts to justify the Seinfeldian “cheering for laundry” description of fandom. Buehler (2023) presents the rise of the analysis of transactions and team building from the standpoint of media studies. The closest to the perspective of this paper is found in an obscure (it is apparently uncited on Google Scholar) essay in the 2006 edition of the print annual of *Baseball Prospectus* by *Baseball Prospectus* founder Gary Huckaby:

What we’re really talking about is Data-Driven Management. No one serious about baseball analysis wants less information – we want more, and we want it to be used in a responsible and effective manner. Most statistical analysts don’t want to supplant scouting information; they’re actually downright hungry to include scouting data in the model-building and decision-making process. The seminal issue isn’t whether or not the data being used is from a scouting staff or from a Sports Information Director at a Junior College; it’s how predictive or descriptive each piece of information is, and how it can best be used (or ignored) when making player personal decisions. Data-Driven Management is not about the mere gathering of data, it’s also about how well each piece of information informs a decision. It’s about understanding the relationship between the information at hand and its potential impact on the team (Huckaby 2006).

The context of this passage is the silliness of the then-controversy of the usefulness of hard data versus scouting. But it is crystal clear what *Baseball Prospectus* and its compatriots were

concerned with: effective management of scarce resources in the furtherance of winning. In the terms of economics, that is, constrained maximization. Previously, Bradbury (2007: 125-134) explicitly connected constrained maximization to fantasy baseball in the context of describing the role of general managers in baseball as entrepreneurs. The whole reason, the DNA, of sabermetric fandom, is to cheer for a constrained maximization problem.

The subtext of this paper is the looming prospect of a lockout or strike in baseball. That is potentially very destructive and is an outcome of the superficially curious industrial organization (bilateral monopoly) of American sport. Little new theoretical or empirical ground will be treaded upon; rather, we synthesize existing economics of sport to articulate the meaning of cheering for the constrained maximization problem (not for ownership) and the incoherence of modern sport commentary. In any event, it is certainly not denied that there has been a general medium-run downward trend in labor share in baseball (Bradbury 2021), which the coming Collective Bargaining Agreement (CBA) may address.

The analytical contribution is the synthesis of the following: 1) the presumption of the efficiency of institutional arrangements, 2) the conception of leagues serving the purpose of restraining trade when there is an incentive to overinvest, and 3) the presence of unions as a check on this restraint of trade as an efficient institutional arrangement. This paradigm serves to undergird the notion of cheering for a constrained maximization problem, as opposed to the way professional sports are now described.

Section II provides more complete motivation by showing the shift in the analysis of baseball from the economic way of thinking to heterodox thinking. Section III reviews the three literatures supporting the synthesis I will be making. Section IV articulates the rational choice

description of the efficiency of institutions in baseball. Section V argues for cheering for the constrained maximization problem. Section VI concludes.

II. The Economic Way of Thinking in Baseball

Sabermetrics is most associated with applied statistics, but encompasses decision theory, cost-benefit analysis, and the economic way of thinking, all applied to baseball. As late as 2013, the economic way of thinking remained the default mode of analysis, so we can observe the following as a description of a trade between the Texas Rangers and Detroit Tigers:

If baseball trading were a zero sum game, this would mean that I hate this move for the Rangers, since a big win would have to be offset by a big loss on the other side. But baseball trades are not a zero sum game. There are mutually beneficial trades (Cameron 2013).

Seven years later, an analysis of a three-team trade between the Oakland Athletics, the Atlanta Braves, and the Milwaukee Brewers, reads:

Because now it's time to come down to Milwaukee's role in this trade. If you want to know why your life is harder than it should be, you should become familiar with an economic concept called rent-seeking. Rent-seeking is the behavior of middlemen, people or more often companies that insert themselves between the people who produce goods and services and those who consume them, charging additional fees and exploiting regulatory loopholes while providing little or no additional value to the proposition. Examples include: Health insurance companies, Ticketmaster, rideshare and gig economy startups. Think sub-cable company levels of cost-to-usefulness ratio and you'll be on the right track. That's how much the Brewers won this trade. (Baumann (2022).

Milwaukee had been able to insert itself into the transaction because the Braves already had a catcher, but wished to upgrade at the position when the opportunity arose, while the Athletics were selling one of the best catchers in baseball. Milwaukee acquired the Braves' catcher and provided the prospects that Oakland preferred. Creating value for all three clubs was deemed "rent-seeking." Whatever you think about the limitations of sabermetrics circa 2000-2015 (see, e.g., Baumer and Zimbalist 2014), it has fallen very far relative to where it once stood.

Though Baumann (2014) perhaps first originated heterodox economic modes of thinking (if not the gestalt of the era), it took off fully circa 2022, with Strauss (2022) documenting the threat of a lockout or strike as a battle between labor and capital, with capital being the antagonist. As other examples, see Strunk (2016), Dubuque (2019), Paine (2021), and Swanson (2023). Marc Normandin, former *Baseball Prospectus* author, currently runs a newsletter titled, “Marc Normandin is Creating Baseball Coverage, Featuring Leftism.” Joe Sheehan, a founder of *Baseball Prospectus*, writes, “if [owners] can afford to buy the team, they can afford to pay good players” (Sheehan 2022) as a reason for eschewing the basic recognition of economic or financial constraints team face.

One other particularly illustrative episode was when Bill James himself in 2018 got in a social media blowup when he wrote that if we got rid of all major league players and replaced them, no one would be able to tell the difference in three years. The reaction was less about the truth of the claim, which one could assess in terms of observables like fastball velocity, defensive prowess, or exit velocity of batted balls, but rather if it was something that was said aloud, it was anti-labor (Baer 2018; DeCosta-Klipa 2018; Ratto 2018).

Previously, the entire point of the exercise was to connect projected statistics to projected wins to economic value and “it becomes a simple application of Economics 101: If the marginal value to a team exceeds its marginal cost, it should acquire the player” (Peta 2011: 166). Rather now, the default is for writers throughout this space to trip over themselves apologizing for evaluating the efficiency of transactions (generally speaking, in terms of marginal wins per marginal dollars), because efficiency is deemed pro-owner, even as these kinds of evaluations of transactions had long been the core competency of sabermetrics. Cost-benefit analysis is moralized, negatively.

The timing of the shift appears to match the shift in coverage by media in normalizing other heterodox economic ideas, such as Modern Monetary Theory (Hartley 2020) in public finance of neo-Brandeisianism (Wilson and Cella 2022) in antitrust. Klein (2023) and Klein and Thompson (2025) touch on other such issues for economics and public policy. Modern Monetary Theory is one version of Post-Keynesian economics which takes a radical outlook on what can be accomplished with fiscal policy. Neo-Brandeisianism represents a complete departure from the consumer welfare standard in industrial organization and antitrust. Both stand in opposition to neoclassical economics, whether left or right. What has allowed the discourse to deteriorate in the specific ways it has for public finance and antitrust runs in parallel with discourse in baseball.

III. Literature Review

This paper makes use of a relatively simple idea that wins for one team are negative externality on others, because wins drive the utility conferred by the sporting event and the profitability of each team. In other words, acquiring wins is rent-seeking, though not in the sense meant by Baumann (2022). This argument was not fully fleshed out until Dietl et al. (2008), whose model followed that of Szymanski (2003), who in turn cites Tullock's (1980) seminal work on rent-seeking. The intellectual history of the idea that leagues employ rules to address the incentive to overinvest can be traced to Thompson (1970) and Canes (1974),¹ as discussed in Alchian and Demsetz (1972: 790-791, n. 15). Other recent literature on this point includes Ascari and Gagnepain (2007) and Biner (2013; 2014).

¹ The present author is exerting all possible effort to avoid referring to this issue of rent-seeking as "Canesian Economics" throughout the paper.

The second point concerns the nature of labor markets in baseball and elsewhere as a bilateral monopoly. The league forms for reasons such as (but limited to) combatting the issue of negative externalities and rent-seeking, and the labor union arises as an institutional check on the monopsonistic power of the league, as in Jacobs and Winter, Jr. (1971), Kahn (2000), and Alderman and Blair (2024: 141-159). So long as agreements are struck between labor and capital, a bilateral monopoly is preferable to cartelization and monopsony from a welfare standpoint, which in turn is preferable to externalities that could prevent market from forming at all (i.e., the frequent disintegration of teams and leagues). Layers of institutional arrangements arose (and continue evolving) to create something proximate to the first-best outcome.

That leads into the third strand of literature that is relevant, but outside most economics of sports, which is the presumed efficiency of institutional arrangements. Concerning the inefficiency of the industrial organization of baseball, Bradbury (2007: 201-209) has pushed back against the idea that baseball's monopoly as a professional sport is that harmful, because it appears to be contestable. However, that question is not quite what is meant here. Rather, it is that societies develop institutional solutions to social problems in quite clever, non-obvious ways (Thompson and Hickson 2000; Leeson 2020), and there is a long-run tendency towards policy efficiency (Albrecht et al. 2022). Similar arguments are made concerning labor market institutions (Freeman 1976; Thompson 1980; McDonald and Solow 1981; Hickson and Thompson 1991).

The position taken in this paper is that such a presumption of efficiency remains a refutable hypothesis. However, the institutional equilibrium in baseball is readily comprehensible in terms of efficiency. The closest literature concerning the actual efficiency institutions adopted by sports leagues is an unpublished manuscript, Gonzalez-Eiras et al. (2020), who find evidence

in support of institutions being profit-maximizing (though not jointly welfare-maximizing for players and owners). For other related literature, see Bougheas and Downward (2003) and Madden (2019).

IV. A Rational Choice Explanation of the Labor Market Institutions of Major League Baseball

Unlike many private sector unions in the United States, unions in sport have persisted, raising the question as to why. The Coase Theorem (Coase 1960) states that in the absence of transaction costs, external costs will be internalized through bargaining. The stronger statement, which puts a much different emphasis than the original intention of Coase and is often associated with George Stigler (McCloskey 1998), is to assume transaction costs are zero and therefore all efficiency-enhancing trades have already taken place. The argument is typically applied (or “tested”) within sports economics in terms of whether the allocation of players across teams is invariant to labor rules (as in Kahn 2000).

The Coase theorem is also applied in labor markets in the context of bilateral monopoly (Schwab 1987; Freeman 2007). As a benchmark, efficiency-enhancing gains are presumed to have taken place, with the sides splitting the surplus from the agreement. Similarly, the Political Coase Theorem (Parisi 2003) states that desirable, efficiency enhancing vote trading (“logrolling”) takes place among legislators until all opportunities for further beneficial policies have been exhausted. Of course, due to transaction costs and other frictions, the Political Coase Theorem may not obtain (Acemoglu 2003). But these frameworks, taken together, at least strongly gesture in the direction of the efficiency in labor agreements in the context of baseball.

The resulting labor agreement therefore should be viewed as, *ex ante*, presumptively maximizing surplus, with the surplus to be shared between labor and capital, so long as a work stoppage does not occur. In baseball, labor share is not directly bargained over, but rules, institutions, and regulatory frameworks are. Behavior by players and ownership subsequent to the formation of the agreements should be viewed as simple profit or utility maximization under the constraints imposed by the agreed upon rules. If undesirable behavior results, the rules should be renegotiated and adjusted. The question of the fairness of the rules is one of their fairness *ex ante* (Brennan and Buchanan 1985), and the purpose of revising the rules periodically is to revise in light of *ex post* (Buchanan 1989).

There are many justifications given both popularly and academically for why the peculiar industrial organization of sport leagues arose and persists. But the desirability of curtailing externalities as described by Canes (1974) and later fully articulated by Deitl et al. (2008) best justifies some kind of restriction in trade. When financial stakes were lower, curtailment was accomplished via the blunt instrument of the reserve clause (c.f. Bradbury 2017). Just as property rights arose when it became worth it to assign them (Demsetz 1967), labor market institutions changed drastically in baseball in the 1970s in conjunction with rapidly rising franchise values (Hauptert 2007) which raised the stakes.

So, given the externality of purchasing wins outlined by Canes (1974), what is the optimal tax on purchasing wins? Taxing overinvestment is to tax purchasing wins on the free market, via trades, or signing a team's own players to a long-term deal. The answer to that is best left to labor negotiations and the relevant parties themselves, but one simple answer is that it is deducting a win from the total of the other members of the league. The value of the win, in equilibrium, for the marginal purchaser of the win is the price of the win. The efficient tax would

correspond to a 100% Pigouvian tax on wins, for all teams. That back-of-the-envelope framing is roughly consistent with the formal modeling found in Dietl et al. (2010). There are additional reasons for higher taxes (competitive balance for its own sake) or lower taxes (positive externalities of better talent, as in Marburger 1997).² Failing to tax teams below the luxury threshold can actually be interpreted as a subsidy for teams that spend less, for the same reason that failing to tax carbon is often phrased as a subsidy for fossil fuels (as in Copeland and Taylor 2004). Luxury taxes in line with the 2022-2026 agreement are roughly in agreement.

Unhelpfully, the modern arrangement of institutions is referred to “socialism,” including in *Moneyball*, and by commentators like George Will (Lewis 2003: 120-121). It is only “socialism” in the sense that firms are “central planning” and that real free markets require that workers form new contracts on a daily or minute-by-minute basis (Coase 1937). Rather than “socialism,” the institutions evolved in baseball are endogenously addressing an externality within the market, and using a labor market institution that otherwise is slowly dying in the United States (private sector unions) to correct for the subsequent problems associated with restrictions on trade. Major League Baseball does not exemplify socialism; it exemplifies the strength of market mechanism as summarized in the statement, “Markets fail. Use markets” (Kling 2015: 45).

V. Cheering for a Constrained Maximization Problem

² Marburger’s (1997) model treats higher quality play as an exogenous characteristic of teams, where their accumulation of talent has no side effects the team they are playing that night (1997: 116). We view the externality as present, but high salaries may also draw in better and more skilled athletes into the sport.

Suppose teams end up spending more (or less) than anticipated on player contracts than expected. It stands to reason that some of the agreed-upon rules erred, and different shifts along the margin would be made in the next line of negotiations. How income is divvied up between labor and capital is to be viewed as an outcome of the process as dictated by the rules, not the personalities or personal failings of those involved.³ As one particular example, the most excoriated franchise in modern baseball history, the Florida / Miami Marlins, has seen little change in its unwillingness to spend over any prolonged period of time across four ownership groups in its 33 year history, even after getting a new stadium. One would expect to see change across ownership groups if the explanation for behavior was that an ownership group was an outlier in terms of miserliness or greed.⁴

Even if we relax this assumption, and proclivities of ownership groups matter, it is not clear that much is changed. Suppose we have a utility-maximizing owner making a trade-off between wins and profit, as in Fort (2015; see also Sloane 1971; Quirk and El Hodiri; Zimbalist 2003). We will re-arrange the problem slightly, so as to speak to the perspectives of Baumann (2014) or Sheehan (2022) more directly. Management sets out to maximize winning:

$$\begin{aligned} & \text{Max } W(.) \\ & \text{s. t. } \mathbb{E}(\pi) \geq \bar{\pi}(W) \end{aligned}$$

Where $W(.)$ denotes “winning” and is defined as some combination of regular season wins, playoff appearances, and championships, both for the present year and future discounted years. $\bar{\pi}$ denotes the minimal level of profit the owner is willing to accept given the level of wins. $\bar{\pi}$ can be positive or negative, i.e., the owner may be willing to incur a loss. While it is written as an

³ With the exception, perhaps, of Charles O. Finley.

⁴ C.f. Stigler and Becker (1977).

increasing function of winning, $\bar{\pi}$ may also be flat, where the owner wants to make some level of return no matter how the team is performing. $\bar{\pi}$ may be flat and negative, which would signify a “sporting” owner willing to consume out of their own fortune for the sake of the team (this being in line with what Sheehan [2022] appears to be calling for), with the level of $\bar{\pi}$ set at something along the lines of not risk jeopardizing the owner’s fortune. (That model parameterization possibly matches the behavior of the late San Diego Padres owner Peter Seidler before he passed away.)

The Baumann-Sheehan perspective, now widespread in the media, is that $\bar{\pi}$ should be shifted downwards, that owners *should* be willing to accept lower profits and invest more in their teams. But consider what happens when we walk this backwards to the structure of the rules that owners, management, and players are operating under, and how they arose. $\bar{\pi}$, aggregated across teams, is overall league profitability, which amounts to capital share, and with certain caveats, maps directly to labor share. The last time labor share rose considerably, the league threatened contracting the Minnesota Twins and the then-Montreal Expos. This threat may have been morally wrong or in bad faith, but the point is that the league responded with what was plausibly a credible threat.

Collective bargaining means that *the rules themselves are endogenous* to the outcomes of the system, so if one engineers a campaign to systematically raise salaries outside of changing the rules, the rules themselves will change in the next collective bargaining agreement. Given that, rather than “cheering for lower $\bar{\pi}$,” we can move this up a level to “cheering for a player-friendly collective bargaining agreement,” but it is unclear how that would occur durably. Do we redirect sociological power in favor of the players through suasion? Through law? But even if one wishes to confer more power to players in negotiations, there is little to be gained in cheering

for lower $\bar{\pi}$ outside of changes in the labor rules, since any successes are transitory and “mistakes” inside the system.

The older form of sabermetrics is to cheer for the constrained maximization problem, i.e., increasing the value of the objective function conditional on the constraint. (Without the constraint – some constraint – “analysis” is reduced to musing about how one’s favored team should simply buy all the best free agents and offer unlimited sums of money, or the equivalent thereof, to trade for all the best players in baseball.) Taking $\bar{\pi}$ as a given means accepting reality as it exists and the games as they are actually played, though one can certainly stay in the conventional sabermetric box if one were to ask what a team could afford if they were willing to spend another \$10 million on payroll. In the analysis of how to build a baseball team, it would signal a return to the general framework of surplus value of contracts and maximizing equity in furtherance of winning, or cost-benefit analysis or equating marginal benefit and marginal cost.

When we read works like Thorn and Palmer (1984), Scully (1989), Lewis (2003), Keri (2006), Gennaro (2007), Tango et al. (2007), Bradbury (2011), or Goldman (2012) we are reading guides to cheering for the constrained maximization problem, the same constrained maximization problem that appears above. Some of these may be dotted with commentary that takes the perspective of the player in labor disputes (as in deMause [2006] in Keri [2006]), but it is nothing like what we see in the current generation of writing, where anything and everything is suffused with labor versus capital. In different styles and presentations (perhaps most differently in Bradbury 2011), this earlier literature asks how to map data to performance, how to gain an edge in free agency, trades, and the draft, and the effective allocation of scarce resources in the furtherance of winning.

VI. Conclusion

This paper offers a means of making actions by the MLB ownership, management, and players intelligible without a morality play. Constraints on trade in the forms taken by baseball are examples of externalities being internalized in the absence of government intervention. These constraints create new sets of problems, which the rise of a labor union and regular labor negotiations then largely solves, with the risk of a work stoppage. Teams failing to spend on the one hand or individual teams on the other (in the current year, the Los Angeles Dodgers and the New York Mets) running away from the field are problems to be solved in the context of these negotiations. But as these problems exist, they should be viewed as outcomes of incentives generated by rules and institutions that were previously negotiated.

The turn in coverage by the press documented in part by Strauss (2022), but exemplified by the shift in how transactions were analyzed from Cameron (2013) to Baumann (2022), is not even “political” of left-versus-right in the sense of disagreements on the margin over specific rules like a salary cap: Baumann (2014) explicitly frames it as a “proletarian revolution.” Rather, it is a shift away from the economic way of thinking. Returning to the economic way of thinking is not a turn to conservatism, let alone right-wing populism. Rather, it is recognizing that sports is operating within a constrained maximization problem.⁵ Presently, the only commentator or journalist associated with pre-2015 sabermetrics voicing anything in hailing distance of that is Silver (2024, see especially p. 461-472), and he does not himself link it to baseball.

⁵ To strain the analogy somewhat, if economically illiterate baseball journalism is the equivalent of “everything-bagel liberalism,” then the solution from within the left, recognizing the importance of recognizing constraints, is Klein and Thompson (2025).

There are no anti-labor positions taken herein. The present author would speculate that the next CBA could take a form where the highest luxury tax bracket would face a much higher marginal rate (perhaps 200% or higher), paired with a meaningful salary floor. But that is speculation, and it is more important to recognize the logic of the current equilibrium, and the efficiency, or some may even say justice (Brennan and Buchanan 1985), that it entails.

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