Strategy Involving the NBA Lockout of the 1998-1999 Season

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Applied Game Theory

Abstract

This paper examines the lockout involving the National Basketball Association Players Association and the owners of the franchises. Details are given regarding the history of the lockout and the effect it had on the league. Game theory is discussed to determine the strategies played by each side, and how the outcome of the Collective Bargaining Agreement was affected by each side's plays.
American culture has become extremely focused on sporting events as being a primary source of recreation for consumers. Many individuals look to their local team to perform well and represent their city and region of the country. Above and beyond the actual sporting events, many other industries in our economy feed off of Americans’ interests in the four major sports – basketball, basketball, football, and hockey. For example, clothing retailers always seem to support the nearest team by selling merchandise to its fans in the local area. As more consumer goods continue to become cheaper to produce as technology increases, the mixing of professional sports can be seen everywhere – logos are seen on credit cards, watches, and trash cans. A few trips to downtown Cleveland can show nearly anyone the difference in the nightlife activity when there is a professional sporting event occurring. The city’s restaurants and bars flourish when the Indians, Cavaliers, or Browns play a home game. But the downtown area is often lifeless when a professional sports event is not being held that day. It is no surprise that every year over 120 million fans attend basketball, baseball, football, and hockey games (Baade, 2006, p. 3). Americans love their sports.

The National Basketball Association (NBA) consists of thirty professional basketball teams split between two conferences in cities located all across the United States and Canada. The season lasts from November to June. Each team plays eighty-two regular season games, and afterwards, the playoffs begin for the better teams in the league. Of the four major American sports, NBA players historically earn the most, with the average salary just before the lockout of $1.8 million in 1997.1 With the huge gap in NBA players’ salaries compared to the other major sports owners, the gap between

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1 In that same year, the average other salaries were $600,000 for hockey players, $650,000 for football players, and $1.2 million for baseball players (Kahn, 2000, p. 76).
overall budgets of teams has widened as well. Certain teams who have relatively wealthy owners tend to perform much better in the league. Also, some teams hail in huge-market cities like Los Angeles and New York, whereas others are much smaller, like Portland and Indiana. To keep teams competitive, there has been a movement toward trying to keep teams as similar as possible in their budgetary matters. Sports economist Andrew Zimbalist examines five different ways to address a competitive balance in the league:

1.) Artificially restrict the growth of player salaries,

2.) Introduce or increase revenue sharing among the teams within the league,

3.) Further skew the reverse order draft for amateur players to favor the low-income and small-market teams,

4.) Allow freer team movement among cities, or

5.) Compel league divestiture and engender competition.

(Zimbalist, 2004, p. 94)

The NBA lockout in the 1998/99 season lasted over 200 days and resulted in 424 scheduled games that were not played (Coates & Humphreys, 2001, p. 738). By the time the lockout was over and a collective bargaining agreement was reached, each team only played fifty regular season games, rather than eighty-two. In a “lockout,” owners of the basketball teams shut down all facilities and practices and suspend all games to establish a new bargaining agreement with the players’ union. A common misconception with a lockout is the frequency that they occur in the NBA. For example, the owners of the professional teams locked out players in 1996, but this only lasted one day and did not
result in any missed games. (Wise, 1998) In September of 1995, NBA commissioner David Stern had overseen a collective bargaining agreement between the two sides lasting six years. However, one of the options in the agreement allows the owners to renegotiate the contract if the players’ salaries surpass 51.8% of the defined gross revenue. Due to the huge increase in players’ salaries in the 1990s, the percentage of salaries for revenue was over 57% (Wise, 1998). Thus, when owners decided to renegotiate a cap for players’ salaries, the lockout followed soon thereafter.

One of the biggest debated phrases in the collective bargaining agreement that led to the lockout in 1998 is the “Larry Bird clause.” This clause allows teams to pay their own free agents whatever they need to keep them, without having to worry about staying under the salary cap that the league has set for all franchises. The Larry Bird clause can be extremely beneficial to smaller market teams who want to build their organization around a single individual. For example, the Chicago Bulls were allowed to pay Michael Jordan a large salary when he became a free agent to keep him in Chicago. Yet, the Larry Bird clause limits organizations from making extreme changes to a player’s salary, by limiting the free agent amount to 150%, 200%, or 300% of his previous salary depending on other restrictions and clauses from previous years (Coon, 2007). The Larry Bird clause has many benefits to the owners of teams in the league. The Larry Bird clause allows for teams to be more internally stable, smooths out the reverse record draft, and provides a break on superstar salaries which caters to a more open free agency society (Zimbalist, 2004, p. 95). The Larry Bird clause allows teams to be more stable by bringing back the same players year over year, allowing the organization to build a better

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2 Defined gross revenue (DGR) is defined as television, radio, and gate revenues (Zimbalist, 2004, p. 96).
fan base, thus increasing revenues. The reverse draft also allows teams with poor records to have a chance and picking earlier in the next draft.

However, economically speaking, the issuance of a salary cap could cause an overall inefficiency in Major League Baseball. If the equilibrium price for the players’ salaries is above the set price cap level, then there would be inefficiency. The equilibrium price is established where the overall demand curve for Major League Baseball players salaries meets the curve overall supply. If this prior stipulation occurs, then there would be a shortage of players—teams would not be able to supply the appropriate amount of money in order to meet the demands of the players. Resulting from this inefficiency could be a players’ strike, which happened to occur in 1994 in Major League Baseball.

Another way professional sports in America have dealt with the disparity in revenue between teams is through the use of revenue sharing. In the United States, Major League Baseball has adopted this concept as a form of keep teams on an even playing field. All teams in the league come together to share profits as a league rather than individual franchises. Because each franchise has a different market clientele with the demographics of their city, prices regarding attending games for customers is not regulated by the commissioner’s office. Thus, large market teams tend to draw in more money for their games simply due to the prices they charge their customers is so much higher. This gives franchises in, for example, New York and Los Angeles, to have a greater amount of annual revenue to spend on salaries of players. Revenue sharing limits large-market metropolitan areas from monopolizing on the system. There has been much talk for the NBA to also have a revenue sharing policy to equalize teams, but the
Collective Bargaining Agreement that is in effect does not use the principle of revenue sharing.

The Collective Bargaining Agreement for the NBA is a contract between league owners and the National Basketball Association Players Association to set up all rules and regulations between owners and players. In the agreement, the salary cap is defined and derived as to how it is created. In addition, maximum and minimum salaries and created, as well as rules for trades and drafting procedures (Coon, 2007). With this agreement, the Collective Bargaining Agreement prevents the NBA from being in violation of anti-trust laws. The most recent Collective Bargaining Agreement was signed in 2005, and lasts until after the 2009-2010 season. Before this agreement went into action, the last agreement was signed in 1999, causing the end of the lockout.

A very interesting legal issue that the Collective Bargaining Agreement of the NBA deals with is the role of the commissioner to the league. Legally speaking, the commissioner is not part of the players association, but also does not represent the franchise owners. Thus, the commissioner’s main job during bargaining is to facilitate negotiations so an agreement is reached and thus the season is played in full. However, because the commissioner of the league is set to overlook all policies carried out between players and owners, certain powers are given to allow for intervention between the parties. This is extremely helpful because negotiations can come to a standstill without a third party facilitating differences among sides.

A lockout is actually a method by owners to utilize their power as employers. The owners have the power to withhold employment as a means of economically

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3 Some practices in the NBA, such as the draft and salary cap, violate the Sherman anti-trust act. Without the Collective Bargaining Agreement signed and approved, the NBA would technically not be able to run (Coon, 2007).
coercing concession or acquiescence at the bargaining table (Lowell, 1973, p. 38).

Rather than have the players union go on strike, owner take control of the bargaining situation by restricting players from practicing or playing. However, there are some limitations as to the extent owners can “lockout” their players. Lowell declares, “[T]he lockout will be unlawful if used by an employer who demonstrates hostility to

the principles of collective bargaining, who has engaged in bad-faith bargaining, or who uses the lockout as a means to avoid bargaining, to interfere with the union organizations efforts, to retaliate against striking employees, or to punish those engaged in union activities, or if it is used by an employer who has substantial business interest to justify his action.” (40)

This happened before the 1998-99 season due to the fact that players and owners could not renew their collective bargaining agreement with the complications with the players’ salaries. Unfortunately, the fans of NBA basketball teams suffered by seeing a shortened, 50-game season that did not start until January. The NBA lockout is a great example of how game theory is used.

The NBA lockout is a great example of the common bargaining game in the field of game theory. The process of bargaining leads up to the formation of a contract, where the contractual relationship process can be divided into two phases. The first is the contracting phase, where players set the actual terms of the contract. The second is the implementation phase, where players of the game carry out and enforce the contract they created (Watson, 2008, p. 203). In economics, the process of forming contracts revolves around the benefits to players from trade. In any market, the members of a society have to deal with scarcity, meaning that there are never enough goods to satisfy everyone in
the market. Gains from trade help individual consumers satisfy their own wants and needs. In most examples of bargaining, money is involved because it can be easily divided. Some goods cannot be divided up among consumers very easily, making it hard to maximize utility and the bargaining process. For example, it would be hard to negotiate a deal between players involving only a television and car, simply because neither player can divide off part of either good to make the trade fair and balanced. For this reason, money is usually involved because it can be broken down to the nearest cent, allowing contracts to be more just with its parties involved.

Bargaining problems in game theory are looked at by viewing all possible outcomes between the two parties, both fulfilling and refusing to accept a common agreement. Payoffs are determined for each player for each outcome; however, the payoffs can be better explained with a graphical representation rather than in a payoff matrix. The Rubenstein model of bargaining resembles a flow chart, which can be seen below. Notice that in the game, regardless of how the rest of the paths are labeled, if each player continually rejects the proposed deal, the final payoff is (0,0). Nobody gains anything. Actually, in the matter of the NBA lockout, this final reject payoff would be negative for both players, simply because each side has ongoing expenses that are supposed to be offset with season play.

The diagram below shows the decision tree of the Rubenstein Bargaining model, which has each of the two players alternating offers and counter-offers to come up with an agreement that satisfies both parties. In the diagram depicting the game, $X_1$ represents player one’s proposed share of the deal in the bargaining process. Thus, the expression $(1 - X_1)$ indicates the amount of the deal that player two receives. Player one notifies
player two of the proposition and then player two has to make the decision to accept or reject. Should player two choose reject, he then makes a counter-offer, as denoted in period two by $X_2$. This game should continue on until equilibrium has been established where both parties come to terms and agree on what the contract will set up. Simply by looking at the first portion of the game setup, it would prove to be true that player two’s best response function is to reject the initial offer. Player one knows that if player two simply rejects the offer, he receives nothing. Therefore, player one’s proposition to number two should be to maximize his share to almost the point where player two is indifferent to accepting player one’s deal and rejecting and receiving nothing.
Based on the generic Rubenstein model, the actual bargaining factors can be placed into the flow chart with the given benefits of both parties. The payoff \((X_1, 1-X_1)\) actually represents the owner’s offering an agreement to the NBA Players Association for a strict 53-54% ratio of salary to gross domestic revenue. This was offered to the players in November, but was rejected (Sheridan, 1998). After a month of negotiations, the players association offered to have the contract be between 57 and 58%, and having a soft-cap, indicating that the Larry Bird clause would remain in tact. This is represented
on the following figure as \((X_2, 1-X_2)\). After another month of negotiations, Commissioner Stern announced that there was a very high chance that the entire season would be cancelled. However, the Players Association and the Owners came to an agreement in January, which was a true compromise between the parties: both sides accepted a 55% ratio and having the Larry Bird clause still in tact. The payoff \((X_3, 1-X_3)\) represents the final offer that was accepted. There were many other offers made, but the three biggest ones are shown in the diagram below.
The Rubenstein model is based on the principle of discounting. Regardless of the period of time, a dollar given to an individual in a society today is always better than in the future because the consumer can use that dollar today and invest it to make more money that the current value. Rubenstein explains that this discounting factor, d, helps set the terms for collective bargaining. Patience is one of the main keys of formulating the collective bargaining game. The value of d can also be interpreted as a player’s
ability to be patient and wait for the dollar to in the future in game theory. When the value of \( d \) is approaching zero that means the consumer is perfectly patient. That is, there is no amount of time that affects the player to receive the one dollar in the future. On the other hand, a value of \( d \) approaching infinity indicates that the player is perfectly impatient, meaning that the player needs the dollar now rather than any point in the future. A player’s ability to be patient as long as possible is best for their situation.

From the discount \( d \) value, Rubenstein transposed this number to the variable \( \delta \) in an equation that reads

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\delta = \frac{1}{1 + d}.
\]

(Watson, 2008)

After using this equation, a \( \delta \) value near 1 indicates a player’s ability to be patient, and a \( \delta \) value around 0 indicates a player’s inability to be patient. Rubenstein states that those players with higher \( \delta \) values win the game. This game is solved by breaking each sub-game into a different period, because time elapses during these decisions. The periods are expressed simply because each player is affected by the amount of time that passes by. Each player is trying to have the other “cave in,” or sacrifice simply because the can no longer afford to be in a bargaining situation, but rather need for the decision to be complete. In terms of the NBA lockout situation, both players were probably equally patient, because the final offer was nearly exactly between the two initial offers made by each side.

After solving each sub-game, Rubenstein calculated the Nash equilibrium for the entire game assuming it is played infinitely. The Nash Equilibrium gives each player’s best response function assuming they know the other players actions. A Nash
Equilibrium means that no player would be willing to change their position given they know what the other player is going to do. The Nash Equilibrium equations for the Rubenstein Collective Bargaining game are:

\[ X_1^* = \frac{(1 - \delta_2)}{(1 - \delta_1 \delta_2)} \]

and

\[ 1 - X_1^* = \frac{\delta_2 (1 - \delta_1)}{(1 - \delta_1 \delta_2)}. \]

(Watson, 2008, p. 221)

As the formula depicts, the only factor that influences the final outcome of the bargaining game is each player’s patience coefficient, or \( \delta \).

The Rubenstein Bargaining Model relates exactly to the NBA Lockout and dispute between the owners of the franchises and the players association. The owners took first action by shutting out the players and restricting them from practicing in NBA arenas and suspending play for the 1998 season. The Collective Bargaining Agreement was going to have to be reached before both parties would be satisfied, and then the season would begin. The players made significant sacrifices in the end to have the season begin in January. Member of the union accepted a soft cap of 55% as the ratio between salaries of the players and the total revenue of each franchise. In addition, the players union had to set a limit for individual player salaries, meaning that there was an individual salary cap placed upon the players (Zimbalist, 2004, p. 102). Applying the theory of the game behind the actual bargaining situation, the players association realized the importance of their pay in relationship to their contract, and was not as patient as the owners. The owners worked together in this bargaining contract to appear that they could remain patient and deal with the season not being played much more easily than the
basketball players, and this allowed them to make more favorable decisions when dealing with the contract.

In the end, the bargaining game ended on January 18, 1999. On this day, the Collective Bargaining Agreement was signed by the owners and the NBA players association. The NBA regular season began on February 5, 1999, which allowed for teams to play fifty regular season games rather than the originally scheduled eighty-two. The playoffs were still held in full, with the San Antonio Spurs emerging as champions of the league. In addition to the shortened season, other events were altered to accommodate fifty regular season games. The All-Star game was cancelled, and the preseason only lasted two games, rather than the traditional eight. The Collective Bargaining Agreement that was signed in 1999 lasted until 2005, when another one had to be in place in order to keep an existing contract between the two parties. The Collective Bargaining Agreement that resulted from the 1998 NBA lockout is a great example of how game theory is used in determining how players come together to negotiate terms of contracts to best suit themselves.
References


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