

Economic Subterfuge and the NBA Lockout

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ECONOMIC SUBTERFUGE AND THE NBA LOCKOUT

The Competitive Balance and Payroll Equality Myth



PARIN SHAH

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*Submitted in partial fulfillment of the requirements for graduation from the
Carroll School of Management Honors Program at Boston College*

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ABSTRACT

At the very core of the National Basketball Association's labor negotiations between the owners and the players during the 2011 lockout was the league's argument that its economic structure was broken. Owners contended that the NBA's soft salary cap system, and the resulting payroll disparity, has put small-market franchises at a talent disadvantage and produced a league of haves and have-nots. To remedy this purported competitive balance problem, the owners demanded severe policy measures to decrease the pay dispersion among teams. However, the players union cautioned that these hardline provisions were merely an attempt to transfer wealth from players to owners. This charge warranted further analysis. Existing literature on this topic is either outdated or insufficient in scope. As such, using regression analysis, this thesis evaluated the league's argument and determined to what extent the league's soft salary cap system has contributed to its competitive imbalance.

The empirical analysis of this thesis produced several meaningful conclusions. While the NBA has relative imbalance, it does not affect consumer demand for the regular season product. Moreover, while pay dispersion exists, additional salary expenditures only marginally add to a team's winning percentage. There is no significant relationship between payroll disparity and competitive balance. Finally, with the escalating importance of media rights contracts and the historical appreciation of franchise valuation, the league overstated the financial distress of most of its small-market owners. Overall, the NBA and its owners used deceptive rhetoric and misleading economic policies to decrease player salaries, not to increase competitive balance, in a collusive effort to maximize profits and reassert its diminishing monopsony power in an increasingly star-driven league.

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LIST OF ABBREVIATIONS

ASD	Actual Standard Deviation
BAA	Basketball Association of America
BLS	Bureau of Labor Statistics
BRI	Basketball Related Income
CBA	Collective Bargaining Agreement
CBR	Competitive Balance Ratio
CPI	Consumer Price Index
ISD	Ideal Standard Deviation
MLB	Major League Baseball
MLE	Mid-Level Exception
NAPSL	North American Professional Sports Leagues
NBA	National Basketball Association
NBPA	National Basketball Players Association
NFL	National Football League
NHL	National Hockey League
RSD	Ratio of Standard Deviation
RSN	Regional Sports Network
TMR	Team Marketing Report
UOH	Uncertainty of Outcome Hypothesis

INTRODUCTION

Overview

On June 12, 2011, the National Basketball Association completed one of its most successful seasons in league history. The 2010-2011 season was replete with storylines: Phil Jackson's quest for his fourth three-peat, the rise of young stars like Blake Griffin, Derrick Rose, and Kevin Durant, and especially the arrival of Miami's new 'Big Three' in LeBron James, Dwyane Wade, and Chris Bosh. The 2010-2011 season culminated in one of the most memorable Finals, in which twenty-four million Americans tuned in to watch the Dirk Nowitzki and the Dallas Mavericks defeat the Miami Heat in the decisive Game Six.¹ Only eighteen days later, the league's owners declared that the current financial system was broken and decided to lockout the players for the fourth time in the league history.

What exactly prompted this decision? How could this storied league be so financially distressed? The owners suggested that the 2005 CBA caused this crisis and announced their intention of negotiating a more favorable collective bargaining agreement. The league office quickly sided with the owners, despite their professed objectivity, and somewhat suspiciously claimed that 22 of the league's 30 teams had suffered losses in the previous season.² The league and its owners argued that the soft cap system has not adequately reduced pay dispersion between the 30 franchises, and as such, has not promoted optimal competitive balance, one of the fundamental tenets of professional sports. The intention for this thesis project is to evaluate whether this charge is accurate or economic subterfuge.

Rationale and Objectives

The NBA's cap system is soft in that it allows franchises to exceed the salary cap by using exceptions to retain current players, sign veteran free agents, etc. The soft cap is unique to the NBA among the four major professional sports leagues. In sports economics, the theoretical goal of salary caps is to generate more optimal league parity, in which all teams have a reasonable chance to reach the postseason.³ However, despite its intention, the soft cap system seems to cause payroll disparity and competitive imbalance. During the 2010-2011 season, the top five teams, by payroll expenditures, spent an average of \$84.5 million on player salaries or \$32.7 million more than the bottom five teams.⁴ Moreover, those same top five teams collectively won 1.7 times as many regular season games this past season. While these facts may be circumstantial, they point to a possible relationship between payroll spend and on-court performance. At the very least, further analysis is necessary.

The structural problems of the league's CBA have been a long-standing issue, especially as the pay dispersion between low-revenue and high-revenue teams widened in recent years. During the course of the 2011 CBA negotiations, the soft salary cap faced the brunt of the owners' criticism and created a rift with the players union. The league's position was shepherded by a hardline faction of small-market owners, who have long clamored for aggressive measures to promote parity.⁵ For instance, during training camp in 2006, eight of these owners petitioned the league to address this growing

¹ David Bauder, "NBA Finals Give ABC Best Summer Ratings in Decade," *Boston Globe*, 14 June 2011

² Larry Coon, "Is The NBA Really Losing Money?," *ESPN*, 4 October 2011

³ Rodney Fort, "Salary Caps," *Sports Economics*, (Upper Saddle River, NJ: Pearson Prentice Hall, 2006), 188

⁴ Patricia Bender, "2010-2011 NBA Salaries," 25 February 2011

⁵ Howard Beck, "Hard-Line Factions Threaten Latest NBA Negotiations," *The New York Times*, 4 November 2011

problem of financial disparity, asking NBA Commissioner David Stern “to embrace this issue because the hard truth is that (the NBA’s) current economic system works only for larger-market teams” and claiming that they “are looking at significant and unacceptable financial losses.”⁶

The crux of the argument against the soft cap system, most often made by the faction of small-market owners, is that large-market and high-revenue teams abuse the system by circumventing the salary cap through various exceptions. This allows them to take a disproportionate portion of the league’s talent pool. They further argue that these high-revenue teams justify the additional spending with the knowledge that the increase in talent and the following increase in attendance, local media rights contracts, and overall revenue will likely compensate them for any additional payroll outlays and luxury tax penalties. This cycle comes at the expense of the small-market and low-revenue teams, which generally cannot justify expenditures above the luxury tax. Consequently, these franchises have claimed that they are inherently at a disadvantage in acquiring and retaining talent, causing on-court performance to decline. This decreases team revenue and perpetuates a vicious circle.

The owners’ rejection of the soft cap system stems from the idea that, by allowing exceptions over the payroll limit, the NBA is implicitly promoting a league of haves and have-nots. With a finite talent pool, if large-market and high-revenue teams are able to utilize their comparatively higher amount of resources in acquiring star players, then the NBA’s other franchises will suffer, as they cannot match these high spending practices. According to the owners’ framework during the CBA negotiations, small-market teams have to rely on superior better player evaluation and drafting abilities in order to keep up and field a competitive team. All other things being equal, these teams are at an inherent disadvantage. As such, the NBA seems to have the least balance among the professional sports, in which small-market franchises cannot compete. The owners contended that this imbalance alienate fans, prompting franchise relocation concerns due to fan disinterest.

This lack of parity in the NBA stands in stark contrast to the National Football League, the “poster child of balance” among professional sports leagues.⁷ According to the owners’ framework, which presumes a relationship between pay dispersion and competitive balance, the probable basis for the NFL’s relatively high league parity is the lack of any significant pay dispersion, because of its hard cap, and its revenue sharing program. The NFL’s immense fan popularity and financial strength raises the question whether parity really matters in professional sports. In economic theory, competitive balance is a fundamental requirement for professional sports leagues. Simon Rottenberg’s seminal 1956 “uncertainty of outcome” hypothesis first suggested that fans prefer to see the home team win close games and reach the postseason often, but not assuredly.⁸ Therefore, competitive imbalance decreases the entertainment fans derive from sports, as they are more likely to predict the winner.

The MLB *Blue Ribbon Panel Report* buttresses this idea in its study of the value of competitive balance in professional sports. The panel ultimately concluded “the presence in the game of clubs, perhaps a majority, that are chronically uncompetitive, alongside clubs that routinely dominate the postseason, undermines the public interest and confidence in the sport.”⁹ In the NBA, fans are “quite

⁶ Brian Windhorst, “How ‘Small Market’ Owners Took Control,” *ESPN*, 25 October 2011

⁷ Rodney Fort, “Competitive Balance in the NFL,” in *The Economics of the National Football League: The State of the Art*, ed. Kevin G. Quinn, (New York, NY: Springer, 2012), 207-224

⁸ Fort, “Sports Economics: Making Sense of it All,” 9

⁹ *Ibid.*, 157

certain” that the lesser team will lose to the superior team.¹⁰ Therefore, if this uncertainty of outcome holds, less competitively balanced seasons should result in a decline in fan attendance and television ratings. However, anecdotal evidence seems to suggest they still fans do not mind this lack of parity, as the league reached its highest level of popularity during a competitively imbalanced era.

The relative competitive imbalance in professional basketball does not seem to hurt the league, as it would in the NFL. With 11 players on the field and 46 players on the active roster per team, the NFL is largely a faceless game. As such, the NFL markets its games as competitions between cities, rather than between star players.¹¹ The NBA’s marketing strategy is strikingly different. Since the early 1980s, during the superstar era of Larry Bird and Magic Johnson, the NBA positioned itself as a star’s league. With this prodigious marketing shift, through the creation of its NBA Entertainment division, and a new media contract with CBS, the league experienced a rapid increase in popularity.¹² Parallel to this increase in fan interest was the gradual decline in league-wide balance, as three teams, Bird’s Celtics, Johnson’s Lakers, and Isiah Thomas’ Pistons, won all ten championships in that decade.

If Rottenberg’s UOH does not apply to the NBA, as the last twenty seasons seems to indicate, the flow of stars to large-market, high-revenue franchises is perhaps a favorable proposal for the casual fan, as it ensures exciting playoff matchups between top teams and drives television ratings. This suggests that the NBA’s failed measures to promote optimal competitive balance, such as the salary cap and the luxury tax, are misguided. However, the NBA has remained committed to its desire for more optimal parity. Adam Silver, the deputy commissioner, stated, “Our view is that the current system is broken, in that 30 teams are not in a position to compete for championships.”¹³ The owners professed that their goal during the course of the negotiations were twofold: 1) facilitate the profitability of each team through a more favorable economic structure; and 2) improve competitive balance. Moreover, they insisted that these goals were distinct and they were unwilling to accept any sort of tradeoff.

The NBA’s ostensible goal for improved competitive balance during the course of the CBA discussion does not indicate whether the league’s owners genuinely place high value on greater parity between their teams. The players union has even suggested that this professed commitment was complete subterfuge, in which the owners made efforts to reduce player salaries under the false pretense of improving competitive balance. For example, Billy Hunter, the NBPA executive director dismissed balance as the owners’ true goal during the lockout: “It was about them making money. It was not necessarily about any competitive balance, and I said that to them in many, many meetings. It was about splitting up the dollars and the owners putting money in their pockets.”¹⁴ The players union asserted the owners of bad faith negotiations by .accusing them of placing their desire for profit maximization far above their desire for parity. This charge warrants further analysis.

Even with the end of the work stoppage and the resumption of the season, the NBA’s competitive balance problem and the growing pay dispersion between high-revenue and low-revenue teams still linger. This past December, the focus of NBA coverage was not on the league’s return on Christmas

¹⁰ David Berri, Martin Schmidt, and Stacey Brook, “Stars at the Gate: The Impact of Star Power on NBA Gate Revenues,” *Journal of Sports Economics*, Vol. 5, February 2004, 35

¹¹ Harvey Araton, “Parity, Great for N.F.L., May Hurt NBA,” *The New York Times*, 26 November 2011

¹² Bill Simmons, “1982-83: The Connection,” *The Book of Basketball*, (New York, NY: ESPN Books, 2009), 148

¹³ Steve Aschburner, “No Deal In Labor Talks, NBA Cancels Season's First Two Weeks,” *NBA.com*, 11 October 2011

¹⁴ Ken Berger, “We’ll Never Know How Close We Came to Losing NBA Season,” *CBSSports.com*, 26 February 2012

Day, but rather trade speculation from two superstars. With the success of the Celtics and the Heat's model, stars are increasingly looking to abandon small-markets in favor of teaming up with other stars in large-market franchises with greater financial resources.¹⁵ This phenomenon has brought greater attention to the growing payroll and talent disparity problems in the league. The objective for this thesis is to test the league's argument impartially and determine whether there is a statistically significant relationship between the soft salary cap and competitive imbalance.

Next, on a qualitative level, this thesis will explore the relative importance of franchise profitability in professional sports leagues. In terms of net income, many teams in the four major NAPSLs lose money. Despite this, there is still incredible demand for ownership, even at generally high valuations, by conventional business metrics. Therefore, this suggests that many owners do not view sports franchises as a business. Conventional business models do not apply to the ownership of NBA franchises. Instead, ownership generally involves the willingness to accept financial losses in exchange for considerable asset appreciation.¹⁶ Despite their annual operating losses, many sports franchises have experienced a considerable increase in valuation due to the rising importance of media rights contracts. Furthermore, sports franchises bring owners prestige in the business world, introduce them to other wealthy individuals, and fuel their competitive desire to win. As such, the owners' desire for profitability for all teams may be imprudent, if not excessively greedy.

Roadmap

Prevailing research on the possible existence of a statistically significant relationship between pay dispersion, competitive balance, and consumer demand in professional sports leagues is inadequate. Considering the shifting dynamics of professional sports, especially with the considerable increase in the influence of media right, it is insufficient to apply existing literature to the CBA negotiations in the most recent lockout. Scholarly research on this topic often falls into two categories. First, there is significant theoretical analysis of the importance of competitive balance and the discussion of the effectiveness of various policy measures in changing league parity, often using abstract models. Second, several studies have conducted multiple regression analysis of the NBA's consumer demand. However, they often used stale data and seemingly extraneous variables.

By employing multiple regression and time series analysis with more relevant data and variables and applying it the NBA lockout, this thesis will ultimately determine whether there is a statistically significant and meaningful relationship between the league's competitive balance and pay dispersion over the last twenty years. In doing so, this thesis will evaluate the effectiveness of the league's various policy measures, such as the soft salary cap, and conclude whether the league's current financial system is currently broken. Additionally, this thesis will ultimately evaluate whether the league's arguments were accurate or misleading. On a larger scale, the empirical analysis may also indicate whether certain policy measures are actually optimal for the NBA going forward.

The empirical analysis conducted within this thesis eventually yields several insightful conclusions on the relative strength of the relationship between competitive balance and pay dispersion and their associated influence on NBA consumer demand. First, this thesis conclusively finds that the NBA has

¹⁵ Kevin Clark, "How the NBA Became English Soccer," *The Wall Street Journal*, 23 February 2011

¹⁶ Scott Rosner and Kenneth Shropshire, *The Business of Sports*, (Sudbury, MA: Jones & Bartlett, 2011), 345

comparatively less competitive balance the other major NAPSLs. Furthermore, the league has historically been unable to change league-wide parity meaningfully through policy measures in the various revisions to its collective bargaining agreement. Next, using regression analysis, this thesis finds that consumers do not base their purchasing decision of the NBA product on relative changes to the league's competitive balance. As such, the owners' consumer demand argument is baseless.

Furthermore, in the analysis of the league's pay dispersion, this thesis finds that while there is some level of pay dispersion between the NBA's 30 teams, it is low because of the soft cap system. In addition, there is no apparent relationship between team market size and its payroll. Moreover, a team's revenue, on a relative basis, only marginally explains variance in relative team payroll. Next, in the team performance model, the analysis ultimately shows that additional expenditures on player salaries do not have a meaningful impact on winning percentage. This conclusion indicates that small-market and low-revenue teams do not face an inherent disadvantage. Finally, there is no relationship between competitive balance and pay dispersion. Therefore, this thesis concludes the league's argument during the course of the 2011 CBA negotiations was based on false pretenses.

Going forward, Chapter 2 discusses the history of the league's CBA and the background of the 2011 NBA lockout. Chapter 3 reviews the existing scholarly literature on competitive balance in sports, including its theory, the various measures of parity, and its application to the NBA, and discusses the need for additional empirical analysis. Chapter 4 further details the methodological design of this thesis. Chapter 5 surveys the various statistical relationships that fall within the scope of this thesis by evaluating the NBA, as it relates to competitive balance, consumer demand, pay dispersion, team performance, and the soft salary cap system. Next, Chapter 6 discusses several conclusions from the empirical analysis and methodically explains the extent of the league's subterfuge in each area of their argument. In addition, it also analyzes the various motivations behind ownership of professional sports franchises. Finally, this thesis project concludes with Chapter 7, which outlines several policy recommendations for the NBA's economic system going forward.

BACKGROUND

Overview

The earliest trace of the NBA is the Basketball Association of America, which merged with the rival National Basketball League in 1949 and created the NBA in the process.¹ However, 1974 truly marked the inception of the modern NBA after the merger with the American Basketball Association. Since then, the league has grown from 22 to 30 teams. The economics of the NBA is based on its cartel nature. The non-statutory labor exemption gives the NBA and other NAPSLs certain antitrust exemptions from the Sherman Act, as long as they engage in collective bargaining with their labor force. Therefore, without the existence of the league's CBA and the players union, the NBA could dissolve for antitrust violation. As such, players have some protection from the will of the owners. As the league grew and became wealthier over time, their bargaining power has increased considerably.

From its modest beginnings, the NBA has developed into a large-scale business, with revenues of \$3,817 million in 2011.² However, the league's significant wealth has brought extensive scrutiny to the growing revenue disparity problems. For example, during the 2010-2011 season, the New York Knicks' total revenue was \$244 million, nearly three times the \$89 million earned by their crosstown rivals, the New Jersey Nets.³ Moreover, this relative revenue dispersion does not exist exclusively between franchises. Rather, this controversial matter of income distribution, specifically between teams and players, has been a frequent topic throughout the league's labor relations history. As such, it is necessary to examine the development of the NBA's collective bargaining agreement.

Collective Bargaining and the NBA

The soft salary cap system is a unique institution of the NBA among the four major NAPSL. It arose out of gradual modifications to the NBA's labor arrangements, made to meet the ever-changing requirements of the league. The history of the CBA is marked with the rapid escalation of players rights, as the league became more profitable and players demanded a greater proportion of the revenue that their on-court performance was generating. There has been some form of player organization and a salary cap since the inception of the BAA in 1946, and especially with the creation of the National Basketball Players Association in 1954.⁴ With the 1976 CBA, players gained limited free agency. However, this was rather minor compared to the sweeping changes brought by the modern CBA, the 1983 agreement, which instituted the soft cap system.⁵

Parity during the 1980s was shrinking, as some owners sought to maximize wins rather than profits, prompting an arms race for talent between top teams. Moreover, concerns about the NBA's financial health in 1980 prompted the league to consider contracting five teams, as player salaries had grown to 70% of league revenue in 1977.⁶ The owners and the NBPA ratified a new CBA in 1983 to alleviate these issues. The solution was a salary cap. The goal was to promote balance by limiting spending.

¹ John Grasso, "Introduction," *Historical Dictionary of Basketball*, (Lanham, MD: Scarecrow Press, 2011), 15

² Larry Coon, "Question 15," NBA Salary Cap/Collective Bargaining Agreement FAQ, 2005

³ Kurt Badenhausen and Mike Ozanian (Eds.), "The Business of Basketball," *Forbes Magazine*, 25 January 2012

⁴ Robert Bradley, "Labor Pains Nothing New to the NBA," *The Association for Professional Basketball Research*

⁵ Coon, "Question 9," NBA Salary Cap/Collective Bargaining Agreement FAQ

⁶ Rosner and Shropshire, *The Business of Sports*, 345

The first salary cap, for the 1984-1985 season, was \$3.6 million.⁷ Despite this, salaries remained high. The CBA guaranteed them 53% to 57% of the league's basketball-related income.⁸ In addition, despite the league's insistence for a hard cap, the 1983 CBA ushered in the soft salary cap, instead. The CBA created the "Larry Bird Exception," in which teams were allowed to exceed the payroll limit to re-sign veteran free agents, and therefore compromised the integrity of the salary cap.⁹

The intended goal of the Larry Bird Exception was to allow low-revenue teams to re-sign their own star free agents to a fair value contract and spend above the cap without having to clear payroll first. Like other CBA provisions, the Bird Exemption attempted to restrict player mobility in the interest of small-market teams. However, large-market teams soon began to use the exception in order to circumvent the cap, as they could sign free agents using their remaining cap room and then use the Exception to re-sign their own players. As such, these teams would significantly exceed the salary cap most years. Without any revenue sharing provisions at this time, small-market teams generally kept the payrolls relatively in line with the salary cap, as they did not have the resources to exceed it.

The 1990s and 1980s were the NBA's "golden era," in which star-focused marketing and landmark television deals, allowed the league to attain record popularity.¹⁰ However, this era seems to have the least parity in league history, in which the arrival of superstars created a group of dominant teams. As such, fans did not seem to care about parity, at this time. Moreover, with the increasing importance of media rights, including the league's \$2.4 billion television contract with NBC, the NBA became wealthy. Likewise, as the CBA guaranteed player salaries as a function of the season's BRI, as revenue rose, they also sharply increased. In the past twenty seasons, only 3.75 teams per year have spent below the cap, on average. Overall, this era is marked by the escalation of the labor rights of players, as they had gained "unrestricted" free agency and other favorable provisions in the 1988 CBA.

The matter of revenue and payroll disparity persisted in the 1990s, during the era of dominant high-revenue teams, like Michael Jordan's Chicago Bulls, further cut the perceived of competitive balance. After the 1995 Finals, the NBA decided to lockout the players to strengthen its position after the expiration of the temporary one-year labor agreement. During the new CBA negotiations, each side attempted to work together to close the loopholes and tighten the salary cap. As with the Bird Exception, the goal was to facilitate the retention of veteran players by small-market teams. However, each side hardened their positions on BRI distribution and cap exceptions. Stalled negotiations forced the players to threaten to decertify the NBPA and sue the NBA for violating the Sherman Act.¹¹

These decertification threats forced the owners to relent and the two sides agreed to the 1995 CBA, which not only provided for unrestricted free agency for all players at the conclusion of their contract, but also, brought about various other salary cap exceptions as the league's cap system became even softer. Even a tentative agreement to introduce a luxury tax was soon abandoned, signaling a victory for the players union. Average player salaries and team payroll expenditures continued to rise. Furthermore, the shift towards marketing star players and dynasty teams drove record television

⁷ *Ibid.*

⁸ Bradley, "Labor Pains"

⁹ Coon, "Question 3," NBA Salary Cap/Collective Bargaining Agreement FAQ

¹⁰ Joe Flood, "NBA Parity?," *Sports Illustrated*, 7 September 2011

¹¹ David Steele, "NBA Players Vote for Union," *San Francisco Chronicle*, 13 September 1995

ratings on the NBC network.¹² This escalation in fan interest was paralleled by decreasing league competitive balance, as the Chicago Bulls dominated the decade, winning six championships.

The 1995 CBA called for player salaries to account for about 48.04% of league revenue, but for the 1997-1998 season, NBA players received about 57% of BRI, prompting fifteen teams to lose money according to the league.¹³ As such, during the 1997-1998 season, the owners enacted their opt-out clause from the 1995 CBA. They raised the issue of the NBA's lack of competitive balance and the rising differences in payroll spend by large-market teams and the remaining franchise. They were especially concerned about the soft cap's ineffectiveness in limiting spending. With the looming retirement of Michael Jordan and the uncertainty over the league's popularity and profitability going forward, NBA owners were determined to dominate the upcoming CBA negotiations and come away with favorable provisions to curb the rapid escalation in player salaries.

The problem of the excessive distribution of BRI to the players proved to be acrimonious, as NBA owners were steadfast in trying to gain concessions in order to gain a much more favorable labor agreement. After months of failed negotiations for a revised CBA, the owners decided to lockout the players yet again, as they had done in 1995. However, this time, the work stoppage was not an empty threat, as continued differences over several issues, including revenue distribution, the hard versus soft cap system, the rookie salary scale, prompted the cancellation of much of the season, the first time in league history when games were lost due to a work stoppage. This was a momentous event in league history, as the divide between each side grew to such an extent that both sides were willing to sacrifice revenue to secure favorable terms. This petty, unwavering attitude would reappear in 2011.

Several issues were controversial for both sides during the 1999 CBA negotiations. While the rising payroll disparity between the 30 teams and the choice between a soft and a hard cap were significant, ultimately the owners placed considerably more value on gaining a more favorable distribution of league revenue. As such, their primary concern was not attempts to enact measures to reach optimal competitive balance, but rather to redistribute income from players. Their recommendation was an escrow system to place hard restrictions on unexpected increases on expenditures for player salaries. Finally, after 204 days and the loss of 464 regular-season games, the two sides ended the lockout and ratified the 1999 CBA, which included terms that were widely viewed as favorable to the owners.¹⁴

With the 1999 CBA, the owners forced the players into accepted maximum salaries, an escrow tax if total salary expenditures exceed 55%, and longer rookie contracts.¹⁵ Most importantly, the league instituted a measure to curtail payroll spending with the NBA's first luxury tax, which imposed a marginal penalty for teams that had player salary expenditures at a certain level above the cap. As compensation for these concessions, the players received additional salary cap exceptions. Among them, the most notable were the mid-level exception, which allowed teams to sign one or more free agents for a total of the league's average salary, and the "million dollar exception," which teams could use every other year. Again, the NBA's salary cap system became even softer, as the league seemingly encouraged teams to exceed the payroll limit in order to re-sign star players.

¹² Bill Gorman, "NBA Finals TV Ratings, 1974-2008," *TV by the Numbers*, 22 May 2009

¹³ Dave D'Alessandro, "It Looks Like as if the NBA is Headed for a Lockout," *The Sporting News*, 29 June 1998

¹⁴ Phil Taylor, "To the Victor Belongs the Spoils," *Sports Illustrated*, 18 January 1999

¹⁵ Bradley, "Labor Pains"

With the expiration of the 1999 CBA, the next revision in the league’s labor agreement came in 2005. The pivotal 2005 CBA avoided another lockout. Major points of the agreement are the introduction of a stronger, dollar-for-dollar luxury tax in every season, reductions in contract length and salary raises, higher salary caps, etc. This CBA was amicable for both players and owners. Neither side wanted another lockout, as the 1999 work stoppage caused substantial losses and a decrease in fan interest.¹⁶ As such, the reception of deal was positive, as the media noted each side’s concerted effort to reach a compromise.¹⁷ However, the 2005 CBA did not do enough to address the growing pay dispersion problem that was afflicting the league at this time, as the top five teams, by 2005-2006 payroll expenditures, spent on average \$92.6 million on player salaries relative to the \$49.5 million cap.¹⁸ This pay dispersion is likely the result of the following ten salary cap exceptions in the 2005 CBA:¹⁹

Table 1: NBA Salary Cap Exceptions (2005 CBA)

Exception	Description
Larry Bird	Teams may exceed the cap to re-sign their own free agent, up to the league’s maximum salary, who must have played three continuous seasons with the team.
Early Bird	Teams may exceed the cap to re-sign their own free agent, who must have played two continuous seasons with the team, for a minimum of two years. The restriction is the greater of the MLE (the average salary) or 175% of the player’s previous salary.
Non-Bird	Teams may exceed the cap to re-sign their own free agents who do not qualify for the Larry Bird or Early Bird exception. The salary restriction is the greater of 120% of the minimum salary or 120% of the player’s previous salary.
Mid-Level	Teams may exceed the cap to sign any free agent for a maximum of the average salary. This exception may be split between multiple players.
Bi-Annual	Teams may exceed the cap once every two years to sign any free agent for a maximum of two seasons at a salary calculated by the league.
Rookie	Teams may exceed the cap to sign first-round draft picks at the rookie scale salary.
Minimum	Teams may exceed the cap to sign any free agent at the minimum player salary, which is calculated by the league, for a maximum of two years
Disabled Player	Teams may exceed the cap to acquire a replacement for a disabled player who will be out for the remainder of the season at a maximum of the lesser of 50% of the injured player’s salary or the league’s average salary. Approval from the league is required.
Reinstatement	Teams may exceed the cap to re-acquire reinstated players, previously banned by the league, to a maximum contract of the player’s previous salary.
Traded Player	Teams may exceed the cap through trade exceptions from a non-simultaneous trade, in which teams have up to one year to complete a trade. Moreover, teams may add salary to their payroll, even if they have already exceeded the cap, as long as the combined incoming salary is within 125% of any outgoing salaries.

¹⁶ Steve Aschburner, “Lockout FAQs: What, How and What’s Next in Labor Standoff,” *NBA.com*, 11 October 2011

¹⁷ Janny Hu, “NBA Strikes Labor Accord,” *San Francisco Chronicle*, 22 June 2005

¹⁸ Bender, “2005-2006 NBA Salaries”

¹⁹ Coon, “Question 16,” NBA Salary Cap/Collective Bargaining Agreement FAQ

The various exceptions from the 2005 CBA significantly reduce the effectiveness of the NBA's salary cap, as they are fundamentally inconsistent with the principles behind a payroll spending restriction. While they seem to restrict player mobility and allow low-revenue franchises the opportunity to retain crucial players, this comes at the expense of higher player salaries, on average. During the lead up to the 2011 lockout and labor negotiations, the owners reportedly made repeated and unwavering demands for a hard cap, which would remove all of these cap exceptions, so that no franchise could exceed the salary cap.²⁰ Whether this hard cap would eventually promote more optimal competitive balance through a reduction in payroll disparity is not apparent without further empirical analysis.

For most years under the 2005 CBA, only certain small-market owners mentioned competitive imbalance as a problem in the NBA. They specifically blamed the soft salary cap for the gradual increase in player salaries, and the resulting pay dispersion between NBA franchises. In doing so, they did not seem to consider other factors that may have contributed to their low team revenue and poor on-court performance, including poor personnel decisions and drafting ability. For example, the Cleveland Cavaliers and San Antonio Spurs were remarkably profitable for most of the 2000s, not because of their market size, which was relatively meager. Rather, fans responded to these teams with high demand because they had star players and ultimately produced a successful on-court product. However, as the 2005 CBA neared expiration, many owners began to reevaluate the NBA's system.

2011 CBA Negotiations

During the years preceding the 2011 CBA talks, league owners seemed to be increasingly dissatisfied with the current labor arrangement. They specifically cited the soft cap system and the resulting escalation in player salaries, as they began to reconsider its value in promoting competitive balance. Dissatisfaction with the 2005 CBA was especially high during the global financial crisis. The slumping economy had widespread effects on the league's financial health. Demand for the NBA regular season product decreased, as consumers had less disposable income to allocate towards entertainment. As such, the owners argued that with falling attendance and rising player salary expenditures, the NBA's current system was broken and its financial future was in jeopardy. In early 2009, the league admitted that it was seeking changes upon the expiration of its current CBA in July 2011.

Given the extent of the economic downturn, in which the NBA lined up \$175 million in loans to distribute among its teams, the NBPA acknowledged that modest changes, at the very least, were necessary.²¹ Speaking on behalf of the players union during the All-Star break, NBPA executive director Billy Hunter remarked, "The last thing we want to do is see it lose its vitality."²² As the economy worsened, it soon became clear that the players union did not anticipate the full weight of the coming changes. David Falk, one of the league's most respected agents, forewarned that the NBA and NBPA were on a collision course for a labor standoff. Falk asserted that the league would likely seek "radical measures" to remedy the league's "broken" system, including "a hard cap, shorter contracts, a higher age limit on incoming players, elimination of the midlevel cap exception, and an overall reduction in the players' percentage of revenue."²³ His assessment proved to be prescient.

²⁰ Steve Aschburner, "Labor Standoff All About Hard Cap vs. Soft Cap," *NBA.com*, 13 September 2011

²¹ Daniel Kaplan and John Lombardo, "NBA Securing \$175M for Clubs," *SportsBusiness Journal*, 16 February 2009

²² Mark Heisler, "NBA Labor Agreement May Be Reopened," *The Los Angeles Times*, 15 February 2009

²³ Howard Beck, "Powerful Agent's Blunt Warning About Future of the NBA.," *The New York Times*, 22 February 2009

Despite the NBA and its owners' best efforts to keep their intentions reserved during the early stages of the labor negotiations with the players union, they soon revealed their hand and confirmed Falk's prediction. Glen Taylor, chairman of the NBA Board of Governors, suggested that player salaries, on average, would necessarily decrease. Afterward, Minnesota general manager Kevin McHale argued "good changes" were coming and that "a correction (was) needed" to the league's system, since player salaries were increasing at an unsustainable rate.²⁴ The league quickly rebuked both Taylor and McHale for their public comments, in an effort to curtail negativity. However, their remarks indicated that the owners' top concern was a significant transfer of wealth from the players.

As "substantive discussions" began, the league clarified its position. Rather than framing their preferences for significant changes to the current system as extreme or radical, they positioned them as the new normal given the harsh economic backdrop. According to this framework, even though it may soon appear that the owners' terms are an extreme departure from the current system, the league argued that this comparison was inherently irrelevant. David Stern prepared fans for sweeping changes and suggested that "at the end of this agreement, it's not going to be (owners) taking a hard line, it's going to be (both sides) dealing with new financial realities."²⁵ Regardless, the negotiations were nothing more than an exchange of information. NBPA President Derek Fisher lamented that "negotiations would not begin until they see what we are offering and we see what they are offering."²⁶

The discussions took a sharply negative turn early in 2010 when it became clear that the owners were prepared to make the players succumb to drastic salary cuts at all costs. On a more fundamental level, the divide between the two sides was most apparent in how the NBA and its owners' viewed their labor force. In a callous statement, one executive remarked, "they need us more than we need them" and "they will not make squat and no one will remember who they are in a few years."²⁷ At least some owners considered the players as readily expendable. Given the league's monopoly exception, they reasoned that there were not many other labor opportunities for the players. Therefore, they had less incentive to negotiate in good faith, under this framework. As such, the owners were "determined to crush the union" in the increasingly partisan and uncompromising CBA talks.²⁸

In their first proposal, the owners made demands for a drastic reduction in player salaries, the elimination of the cap exceptions through the implementation of a hard salary cap system, a 40% rollback in salaries, non-guaranteed contracts, shorter contract lengths, among other hardline provisions. By setting these terms, the NBA's league office, which has historically aligned itself with the owners under Commissioner David Stern, and the owners were taking charge of the negotiations. However, after considerable outrage from the players union, which characterized the proposal as a "non-starter" and "regretful," the owners withdrew their first offer.²⁹ Stern responded that with the NBA's projected \$400 million operating loss in the 2009-2010 season, owners were only taking the necessary steps to create "a sustainable business model" and player salaries were simply too high.³⁰

²⁴ Jerry Zgoda, "Correction is Coming in NBA," *Star Tribune*, 8 March 2009

²⁵ Marc Stein, "Weekend Dime: Lockout FAQ," *ESPN*, 20 March 2009

²⁶ Ken Berger, "NBA, Union to Exchange Proposals at All-Star," *CBS Sports*, 18 December 2009

²⁷ Ken Berger, "Weekly Post-Ups," *CBS Sports*, 29 January 2010

²⁸ *Ibid.*

²⁹ Mark Heisler, "NBA Labor Deal is Off the Table," *Los Angeles Times*, 13 February 2010

³⁰ Jonathan Feigen, "Stern Projects \$400 Million in Losses for the NBA," *The Houston Chronicle*, 13 February 2010

The NBPA, in turn, responded with their collective bargaining proposal exactly one year before the expiration of the 2005 CBA. Relative to the current system, they did not suggest many changes, as they indicated their steadfast desire to keep the soft salary cap system and its various exceptions in place. They pushed back on every one of the owners' demands, with a more aggressive revenue-sharing system as their only concession. Given that NBA franchises were willing to commit \$449 million towards player salaries in only the first 36 hours of the free agency period, the players union argued that the current economic system was functioning properly, despite the economic hardship that some teams were facing. Furthermore, they suggested that the owners' financial troubles were their own doing. One player remarked, "The owners are the ones that are signing these deals."³¹ The NBPA felt they should not be punished for the owners' poor financial and personnel management.

With less than a year until the expiration of the current CBA, the labor talks became even more frequent and allegedly less acrimonious. However, each side remained far apart from even agreeing to basic facts. For example, the players were especially suspicious of David Stern's claim that the league lost \$380 million in the 2009-2010 season. They argued that given the unexpected increase in BRI in the past season and the significant spending during the free agency period, the NBA was overstating its actual operating losses. Despite this, tensions were low at this point. Billy Hunter characterized the talks as positive, noting, "Things felt a lot better in the room – the atmosphere, the environment, the nature of the discussions – more so than in February. Things have thawed a lot."³² As such, the possibility of a lockout at this time seemed distant.

This optimism would not carry over into future negotiations, however. The league reasserted the apparent severity of its financial distress and, once again, demanded harsh policy measures to remedy the allegedly broken NBA economic system. Speaking on behalf of both the league office and the owners, David Stern told reporters that he would not stop until every team could attain profitability. Further, he argued that owners should have the opportunity to realize a return on their investment. In order to achieve this, he suggested that the players would inevitably have to transfer \$750 to \$800 million of their contracts to the owners, which would effectively reduce their salaries by about one-third in the new CBA.³³ Moreover, Stern specifically mentioned that an additional goal of these policy measures, other than ensuring profitability, was to promote competitive balance. As such, he suggested that there was a direct relationship between lower pay dispersion and greater balance.

As the 2010-2011 season wound down, the league sent the NBPA all of its financial records for the previous season in an effort to increase transparency and corroborate its earlier claim that the NBA had suffered about a \$370 to \$400 million operating loss in total. They specifically cited the \$100 million decrease in gate receipts as indicative of the overall decrease in consumer demand and the key justification for a complete overhaul of the current 2005 CBA.³⁴ Moreover, the league controversially claimed that 22 of 30 teams lost money during the 2010-2011 season.³⁵ Since, other than competitive balance, small-market profitability was one of the key motivations behind the lockout, this claim of financial distress quickly became a lightning rod of contention for the NBPA.

³¹ Ken Berger, "Sources: Players Submit CBA Proposal to Owners," *CBS Sports*, 2 July 2010

³² Art Garcia, "NBA, NBAPA Have Constructive Talk Over Collective Bargaining," *NBA.com*, 12 August 2010

³³ Jeff Zillgitt, "NBA Commish David Stern: League Wants to Reduce Player Salaries," *USA Today*, 22 October 2010

³⁴ Ken Berger, "Sources: NBA Sends '09-'10 Data to Union," *CBS Sports*, 30 March 2011

³⁵ Kurt Helin, "League says 22 Teams to Lose Money, \$300 Million Total this Season," *ProBasketballTalk*, 15 April 2011

The league's charge about the extent of its financial distress during the crucial months preceding the actual lockout incited both media frenzy about the likeliness of a cancelled season and speculation from the NBPA about the veracity of the claim. The league office asserted that these losses totaled about \$370 million per season.³⁶ As such, they commanded public support and framed the players as greedy and unwilling to accept significantly less compensation. However, the players union rebuked this argument by citing the league's questionable accounting practices. The reported loss refers to net income, which includes ancillary and non-recurring charges. In addition, it also includes the amortization of the purchase price of each team. Billy Hunter declared that he does not consider the "stated loss figures reflect an accurate portrayal of the financial health of the league."³⁷ Moreover, speaking to reporters after a failed negotiation session, NBPA President Derrick Fisher remarked that the owners were "interested in telling you one side of the story that is not true."³⁸

More importantly, the players union acknowledged that some teams were suffering and announced their willingness to work with the league to improve its financial health. Given access to the NBA's audited financial statements, the NBPA indicated their belief that only a "small number" of franchises had operating losses in recent seasons, after adjusting for irrelevant line items. They further suggested that the owners could alleviate many of these problems by adopting a more effective and widespread revenue sharing system in the next CBA.³⁹ At this time, the league had only limited revenue sharing provisions, such as the transfer of a portion of the luxury tax penalties to teams whose payroll does not exceed the luxury tax and the sharing of revenue from national media rights contracts. By instituting a greater transfer of local television revenue, the NBA's small-market teams would have less of a financial disadvantage, according to the players union.

The NBPA specifically cited the substantial local media rights contracts for high-revenue teams and the resulting revenue dispersion among all teams as one of the major reasons behind the league's financial problems. In February 2011, the Los Angeles Lakers signed a considerably lucrative television contract with Time Warner Cable for a maximum total of \$5.0 billion over 25 years, for the creation of two RSNs.⁴⁰ This contract represents a significant departure from their previous deal with Fox Sports West, in which the Lakers received \$30 million per year in rights fees.⁴¹ Later, in July 2011, the Boston Celtics extended its broadcast contract with Comcast and added about \$20 million per year in fees.⁴² Moreover, the Celtics' owners added a 20% equity stake in the Comcast RSN, giving them an additional source of income.⁴³ Since the BRI calculation includes local media rights, the players' were entitled to the majority of this revenue under the 2005 CBA.

Given the NBA's limited revenue sharing at this time, in which local television fees were not shared between teams, low-revenue owners would not receive any of the additional income generated by these lucrative media rights deals. Therefore, perhaps the most significant implication that these

³⁶ Coon, "Is The NBA Really Losing Money?"

³⁷ *Ibid.*

³⁸ K.C. Johnson, "Contentious NBA Contract Talks Break Off," *Chicago Tribune*, 20 October 2011

³⁹ Henry Abbot, "Hunter: 'Small Number' Losing Money," *ESPN*, 21 March 2011

⁴⁰ Kevin Ding, "Lakers Still Have 5 Billion Reasons to Believe," *The Orange County Register*, 30 November 2011

⁴¹ Joe Flint, "Time Warner Cable, Lakers Strike 20-Year TV Deal," *Los Angeles Times*, 14 February 2011

⁴² John Ourand and John Lombardo, "New deal to give Celtics stake in RSN," *SportsBusiness Journal*, 18 July 2011

⁴³ Mike Ozanian, "The Real Value In Boston's New Cable Deal," *Forbes Magazine*, 19 July 2011

contracts had, with regard to the upcoming CBA negotiations, was bringing the issue of the NBA's projected revenue dispersion to light. Small-market owners, with comparatively meager local television contracts, were startled to learn the magnitude of the impact that broadcast rights were going to have in the modern, star-driven NBA. One league official commented that the "Lakers' television deal scared the hell out of everybody. Everyone thought there is no way to compete with that. Then everyone started thinking that it was not fair that they did not have to share it with the teams they are playing against."⁴⁴ As such, once the CBA negotiation talks were underway, many small-market owners began to reassess revenue sharing, creating factionalism among their side.

Eventually, the NBA and its owners submitted a counteroffer to the players union, a full nine months after the NBPA proposal. However, relative to their January 2010 proposal, they did not make many adjustments or compromises. Instead, they seemingly kept all of the controversial and hardline demands that had made the course of the CBA negotiations so hostile in the past year with a phase-in as their only concession. The owners' new proposal retained the salary rollback, the hard cap system, shorter contract lengths, less allocation of revenue towards the players, etc. Given that the expiration of the 2005 CBA was less than one month away, this indicated that the owners were negotiating in bad faith with full intentions of forcing a work stoppage upon the players to improve their position. NBPA attorney Jeffrey Kessler remarked that he was "discouraged because there has been so little movement from (the owners') side, which makes us wonder what their real intentions are."⁴⁵

Finally, as the expiration of the 2005 CBA and the lockout neared, both sides made some progress in their negotiations for a new labor agreement. Only nine days before the eventual work stoppage, the league and its owners made significant concessions. Rather than a hard cap set at \$45 million or the retention of the current soft cap, the owners relented on this "blood issue" and presented a proposal involving a "flex cap," which would be a hybrid between the two systems. Under this system, the league would guarantee, through an escrow system, an average payroll of \$62 million for each team. Furthermore, teams would be able to exceed this amount using current cap exceptions, in which they could spend up to a maximum amount. Therefore, this system would use both a soft and a hard cap. Overall, according to the league, this concession represented a \$650 million difference, favorable to the players, from their original demand for a hard cap system.⁴⁶

While NBA owners finally made some compromise, it was not enough. The players were highly critical of this proposal. They did not feel that the league was matching their own willingness to settle. For example, the players had decreased their demand of revenue allocation from 57% under the current CBA to 54.3% of league BRI up to a certain point and 50.0% past that value. This represents a significant concession of at least \$500 million in player salaries. However, regardless of how much the players conceded, the owners generally remained steadfast in their demands. Even the flex cap, according to the NBPA, was not a step forward. Rather, Derrick Fisher characterized it as "a total distortion of reality" and "not a flexible cap," but rather "a hard cap."⁴⁷ Ultimately, after several days of intense negotiations, it became clear that the two sides were too far apart. At midnight on July 1, the two sides let the CBA expire, forcing the NBA into its second major lockout in league history.

⁴⁴ Windhorst, "How 'Small Market' Owners Took Control"

⁴⁵ Ken Berger, "Players: 'No Change at All' in Owners' Demands," *CBS Sports*, 8 June 2011

⁴⁶ Ken Berger, "NBA Relaxes Stance on Hard Cap," *CBS Sports*, 21 June 2011

⁴⁷ Coon, "Is The NBA Really Losing Money?"

The 2011 Lockout

One of the major impediments that prevented an agreement during the last few days of negotiation before the work stoppage was the growing rift among the owners. While the league assured the players and the media that the owners were all complacent in a united effort to secure significant, even drastic measures from the players to ensure each team's profitability, there was considerable dissension in the ranks among NBA owners. The split between the younger, hawkish owners and the more experienced, moderate owners became increasingly apparent as the lockout became more and more likely. These younger, hardline owners were not necessarily from small-markets, but they fundamentally viewed their franchises as profit centers. They include Mark Cuban (Dallas), Robert Sarver (Phoenix), Dan Gilbert (Cleveland), and Wyc Grousbeck (Boston). In their handling of negotiations, they have ultimately been unsuccessful, despite their hardline stance.

Given the failure of these hawkish owners, the more experienced and moderate NBA team owners began to increasingly voice their concern with the leadership of their side. One insider familiar with the negotiations claimed, "Stern has been letting this cadre of owners lead the charge for months" and suggested that at some point, he would have to let the moderate step in and take over.⁴⁸ These owners, including Peter Holt (San Antonio), Glen Taylor (Minnesota), and James Dolan (New York) were more willing to consider solving some of the league's financial problems through increased revenue sharing programs. The players tried to capitalize on this dissension by encouraging unity on their own side. In a letter to the players during the lockout, NBPA President Derek Fisher reminded them "there are a number of team owners that will not lose the season over the hard cap system."⁴⁹

A second major cause of the lockout was the league's insistence that every team must attain profitability under any new revision to the CBA. This demand for "guaranteed profitability" before revenue sharing was especially troublesome.⁵⁰ The league made repeated claims during the course of the negotiations that revenue sharing was not a solution to the league's overall financial problems. David Stern claimed it "does not solve the problem if there are losses because you cannot revenue share your way to a profit as a league."⁵¹ As such, the league seemingly disregarded the sharing of local television revenue in its discussions and focused on attaining profitability for all teams, rather than for the NBA overall. As such, the owners hardened their position for drastic reductions in player salaries during the negotiations and abandoned the possibility for compromise.

The players fundamentally disagreed with the concept that NBA ownership implies guaranteed profitability. They argued that since many owners viewed their franchises, not as investments, but rather expensive toys, they could not be held to the standards of normal businesses. Furthermore, they argued that given the historical asset appreciation of sports franchises, owners should be willing to accept small operational losses in exchange for significant capital gains after they sell their teams. Union lawyer Ronald Klempner suggested, "It is not about wiping out losses. "They are not running a Staples. They are not running a car dealership. Ownership of an NBA team is a completely different animal. What turns up at the bottom of a balance sheet is not the entire financial picture."⁵²

⁴⁸ Ken Berger, "Biggest Event for NBA this Week is Tuesday, Not Draft Day," *CBS Sports*, 20 June 2011

⁴⁹ Marc Stein, "Derek Fisher Urges Unity, Patience," *ESPN*, 27 September 2011

⁵⁰ Chris Sheridan, "What to Expect in Tuesday's NBA Labor Talks," *ESPN*, 20 June 2011

⁵¹ Coon, "Is The NBA Really Losing Money?"

⁵² Abbot, "Hunter: 'Small Number' Losing Money"

The 2011 CBA talks between the owners and the players were perhaps the most contentious in league history. Each issue was divisive and the players union sought to maintain the status quo, as they rejected nearly every proposal made by the owners. While the league abandoned its commitment towards the elimination of a soft salary cap, several issues remained combative. In particular, the allocation of revenue to the players was a significant area of dispute. Each side lobbied percentages at each other, but even after making some progress with a proposed 50% to 50% revenue split, they were ultimately unable to reach a consensus. As such, the league office cancelled the preseason and soon after, the first two weeks of the regular season.⁵³ Additional sticking points in the negotiations included the luxury tax and contract lengths. According to the players union, in the NBA's flex cap suggestion, a tiered tax with strict penalties would inevitably lead to an effective hard cap.⁵⁴

After an unsuccessful attempt at resolving the work stoppage through federal mediation, in which the revenue allocation towards the players remained the most divisive issue, the NBA cancelled all games through November 30 and it looked increasingly likely that the entire season was in jeopardy. The players remained unwilling to accept an even share of revenue, as they argued that without the league's labor force, there would be no NBA product. After little progress, including the refusal to accept a salary band, in which they would receive between 49% and 51% of BRI, the players openly discussed union decertification.⁵⁵ By dissolving the union, the players would gain the ability to sue the NBA for a violation of its antitrust exemption of the Sherman Act. After the players rejected an ultimatum from David Stern and the owners' final offer on November 14, they choose to decertify.⁵⁶

Later in November, a delegation of players, now organized as a trade association rather than a union, resumed serious negotiations with the league. After two days, in which the entire season was nearly cancelled and prolonged negotiation, each side made the necessary concessions to save the remainder of the 2011-2012 season with a tentative labor agreement, on the major issues, on November 26. The players soon reformed as a union in order complete the negotiations for minor considerations. Under the agreement, regular season games would resume on Christmas Day. On December 8, 2011, the NBA, its owners, and the NBPA ratified a ten-year, 2011 collective bargaining agreement and ended the second major lockout in league history, after the loss of 240 regular season games were lost.⁵⁷

With the 2011 CBA, the owners did not receive anywhere near the policies they originally desired, but still gained significant concessions relative to the previous 2005 CBA.⁵⁸ For one, revenue allocation between owners and players decreased from 43%-57% to a band of 49%-51%. Additionally, the new CBA retained a slightly modified the soft cap system with little changes to the salary cap exceptions. More specifically, franchises whose payroll total exceeds the luxury tax limit only have the opportunity to use a reduced MLE. Other provisions include a decrease in contract lengths and salary raises and an amnesty provision. Owners also gained several policies to decrease pay dispersion, such as a stricter luxury tax, which will penalize high-spending teams on a tiered basis.

⁵³ Howard Beck, "NBA Cancels First 2 Weeks of Play," *The New York Times*, 10 October 2011

⁵⁴ Jeff Zillgitt, "The Chasm of Difference Continuing the NBA Lockout," *USA Today*, 12 October 2011

⁵⁵ Henry Abbott, "Union: Players Won't See This Offer," *ESPN*, 6 November 2011

⁵⁶ Marc Stein, "NBA Players Reject Owners' Offer," *ESPN*, 15 November 2011

⁵⁷ Ken Belson, "NBA Owners and Players Ratify Labor Deal," *The New York Times*, 8 December 2011

⁵⁸ Larry Coon, "Breaking Down Changes In New CBA," *ESPN*, 28 November 2011

Overall, the players emerged victorious, despite agreeing to seemingly unfavorable terms relative to the 2005 CBA, which will ultimately reduce salaries by about nearly \$300 million per year.⁵⁹ The concessions they made were nowhere as severe as the demands initially made by the owners. Perhaps most importantly, they showed incredible resolve in standing up to the owners.⁶⁰ Not only did they seem to exercise incredible patience in the face of the owners' strong-arm tactics, they NBPA made a concerted effort to educate all NBA players about the importance of financial management during the work stoppage. Furthermore, the players ultimately proved that without them there would be no NBA product. As such, they reasserted their bargaining power, signaling an ultimate victory for the NBPA.

The latest CBA between the owners and the NBPA, ratified this past December, made some progress towards alleviating some of the league's structural issues that have may have plagued the league's competitive balance, especially in the last few years. Some of the CBA changes, including a more severe luxury tax, shorter contract lengths, and less revenue allocation towards player salaries, will decrease the payroll dispersion between the 30 teams. However, relative to more sweeping measures, these changes are minimal. The players' actions to strike down the hard cap and further restrictions against excessive spending may have far-reaching, negative consequences. Overall, while the 2011 CBA should reduce salaries, for many of the owners it does not address the competitive imbalance problem adequately. Therefore, its success depends on the relative value of each goal. For example, if the NBA truly cared about competitive balance, they would have likely instituted more revenue sharing in the 2011 CBA and focused less on reducing allegedly excessive player salaries.

According to the league's framework, the 2011 CBA was only a mild success. However, it does not appear to be a long-term solution in addressing the owners' growing parity concerns, especially with the trend of superstars, such as LeBron James, Dwyane Wade, Carmelo Anthony, Dwight Howard, and Chris Paul, demanding to play together in large-market franchises.⁶¹ The NBA is seemingly at its lowest levels of competitive balance in recent history. As such, the 2011 CBA may be an incomplete solution to an ever-present issue, especially for a league that remains committed to operating in small-market cities, including Memphis, Oklahoma City, San Antonio, Salt Lake City, and Portland, which other professional sports leagues ignore entirely.⁶² To determine this conclusively, it is necessary to empirically research the owners' demand for stricter policy measures during the lockout negotiations and see whether they were motivated by improving balance or decreasing salaries.

⁵⁹ William Gould IV, "The 2011 Basketball Lockout," *The Stanford Law Review*, Vol. 51, January 2012

⁶⁰ Steve Aschburner, "New CBA Spreads Gains, Pains to Both Sides," *NBA.com*, 26 November 2011

⁶¹ Clark, "How the NBA Became English Soccer"

⁶² Lee Jenkins, "'tis the Season," *Sports Illustrated*, 5 December 2011

LITERATURE REVIEW

Overview

The existing scholarly research on the effectiveness of the soft salary cap system in professional sports is limited. Several sports economics journals research the competitive balance, or lack thereof, of the four major professional sports leagues. However, few look at whether the NBA's lack of optimal competitive balance is the product of the pay dispersion caused by the soft cap. In addition, the few articles that attempt to determine the importance of competitive imbalance relative in driving consumer demand in the NBA do so either theoretically or with stale data.

Fortunately, there is significant research on the several issues related to competitive balance: which league is most afflicted by imbalance, the effectiveness of various policy measures in promoting league parity, whether consumer demand is a function of competitive balance, the proper measure of balance, etc. Since no scholarly research connects all of these topics together, it is necessary to review each of the associated subjects and then draw conclusions on how they relate to each other.

Competitive Balance in Theory

The pursuit of optimal competitive balance is perhaps the most essential challenge of sports leagues. Rottenberg (1956) first analyzed the importance of balance when he proposed the uncertainty of outcomes hypothesis. He explained that the profitability of sports franchises depends on the viability of their competitors. Therefore, leagues have an incentive to create policies that encourage the "equal distribution of playing talent."¹ However, Rottenberg limited his research to the impact of the reserve clause in redistributing wealth between players and owners. Building on this idea, El-Hodiri and Quirk (1971) analyzed whether the structure of professional sports result in the "equalization of playing strengths."² They found that gate receipts depend "crucially" on outcome uncertainty. As such, teams have a motive to be somewhat, but not substantially superior to their competitors.³

The cartel model of professional sports drives this idea. Fort and Quirk (1995) determined that sports leagues limit the number of teams, and therefore exclude competition. As such, they enjoy monopsony power as the dominant buyer for player services. However, unlike business cartels, professional sports leagues "are in the business of selling competition on the playing field."⁴ This distinction is important. Sports leagues have incentive to collude by creating "subsidization devices" between high-revenue and low-revenue teams and establish an acceptable level of parity to attract fans.⁵ These devices are a direct transfer of revenue through the indirect transfer of talent. Further, many of these policy measures are favorable to owners, as they redistribute revenue from players. They include the salary cap, the luxury tax, revenue sharing, and player mobility restrictions.

¹ Simon Rottenberg, "The Baseball Players' Labor Market," *Journal of Political Economy*, Vol. 64, June 1956, 255

² Mohamed El-Hodiri and James Quirk, "An Economic Model of a Professional Sports Leagues," *Journal of Political Economy*, Vol. 79, December 1971, 1303

³ *Ibid.*, 1306

⁴ Rodney Fort and James Quirk, "Cross-Subsidization, Incentives, and Outcomes in Professional Team Sports Leagues," *Journal of Economic Literature*, Vol. 33, September 1995, 1265

⁵ *Ibid.*, 1266

Fort and Quirk suggested that it is in the interest of strong-drawing teams to subsidize weaker teams, as it ensures the financial viability of these low-revenue franchises and gives them the profit incentive to be competitive. They argue that optimal competitive balance leads to higher revenue. However, optimality, in this regard, refers to the sum of owner and fan surpluses, rather than equal winning percentages for all teams. In their analysis, Fort and Quirk concluded that the salary cap is the most effective subsidization device.⁶ However, they cautioned that caps are inconsistent with revenue maximization. By limiting the amount that high-revenue teams can spend on player salaries, salary caps decrease the potential value of national television contracts, as national audiences prefer to watch dominant teams.⁷ In addition, owners of large-market teams generally oppose them, as they potentially decrease profits. Therefore, salary caps are susceptible to several enforcement problems.

Fort and Quirk's analysis indicates that even among the league's owners there are disagreements over the use of subsidization devices. Specifically, they suggest that the high-revenue teams, which often derive a significant portion of their revenue from local television deals, are generally opposed to them. Fan interest in these teams depends on their dominant performance. As salary caps make it difficult to field superior rosters, owners of these teams are generally unwilling to support salary caps, as they decrease team performance by making it more expensive to retain player talent. Consequently, salary caps can threaten lucrative local television contracts for these teams.⁸ This divides the owners into two factions of small-market and large-market owners, as it did in the 2011 CBA negotiations.

Vrooman (1995) also explored the policy structure of professional sports. He suggested that salary caps might not achieve optimal balance. Rather, he contended that payroll restrictions are collusive attempts by owners to decrease player salaries, and therefore maximize the league's profitability.⁹ He argued that the salary cap allows the league's 30 owners to act as a single firm and decrease salary expenditures across the board. Therefore, the salary cap allows the NBA to reduce its goal for profit maximization to revenue maximization. As such, it is in the financial interest of all owners to allow large-market, high-revenue teams to continue to take a disproportionate share of the talent pool, as this will improve the league's national television deals, which all franchises share. Vrooman suggested that competitive imbalance is in the best interest of the league's profit-maximizing owners.¹⁰

Quirk and Fort (1992) attribute this preference for competitive imbalance among sports leagues, in which national broadcast rights are a significant portion of gross revenue, to the notion that North American fans embrace dynasties.¹¹ These dominant teams attract higher national television ratings and fan excitement, as they especially draw casual fans. As such, leagues and fans alike prefer some degree of competitive imbalance, as it generates high television ratings. Zimbalist (2003) argues that leagues would prefer to have "teams from the largest media market playing in the championship series."¹² Leagues desire imbalance, in which dynasty teams can exist and all teams still have a

⁶ *Ibid.*, 1296

⁷ Roger Noll, "Professional Basketball: Economic and Business Perspectives," in *The Business of Professional Sports*, eds. Paul Staudohar and James Mangan, (Champaign, IL: University of Illinois Press, 1991), 33

⁸ Fort and Quirk, "Cross-Subsidization," 1281

⁹ John Vrooman, "General Theory of Professional Sports Leagues," *Southern Economic Journal*, Vol. 61, 1995, 980

¹⁰ *Ibid.*, 989

¹¹ James Quirk and Rodney Fort "Competitive Balance in Sports Leagues," *Pay Dirt: The Business of Professional Team Sports*, (Princeton, NJ: Princeton University Press, 1992), 242

¹² Andrew Zimbalist "Competitive Balance: Leveling the Playing Field," *May the Best Team Win: Baseball Economics and Public Policy*, (Washington, DC: Brookings Institution Press, 2003), 36

reasonable chance of reaching the postseason. However, this idea seems to be inconsistent with Rottenberg's UOH. This contradiction suggests that league parity may not drive consumer demand.

El-Hodiri and Quirk's assertion that there is a "crucial" relationship between a league's gate receipts and its outcome uncertainty does not align with the idea that American fans embrace dynasty teams. This has been a consistent issue throughout the research on competitive balance. Szymanski (2003) notes that among 22 studies on the UOH, there is no apparent conclusion on the whether seasonal uncertainty, or competitive balance, has a significant impact on attendance and consumer demand.¹³ Schmidt and Berri (2001) approached this problem by analyzing MLB data. Their time series analysis found that competitive balance was the only significant variable in determining league attendance. More notably, the authors concluded that attendance decreases relative to a single-year improvement in balance, but increases relative to a multi-year improvement to competitive balance.¹⁴

Complicating matters further is the idea that not all owners of professional sports teams are profit-maximizing. Therefore, their actions are not consistent with the pursuit for optimal competitive balance. Vrooman (2009) expounded on previous research on the open markets of European football to show that some NAPS owners are *sportsmen*, as they are willing to trade profits in exchange for wins.¹⁵ Vrooman argued that sportsmen dominate these leagues. As such, there is a decrease in monopsony power, as franchises are not collusively restricting player salaries. The historical rise in the players' share of the gross revenue supports this assertion. Since sportsmen are willing to pay players at their average revenue product, Vrooman concludes that "win-max" leagues, unlike "profit-max" leagues, can improve competitive balance through revenue sharing.

Measures of Optimal Balance

After having established the theoretical role that competitive balance has in shaping the economic structure of professional sports leagues, the next area of scholarly research is the proper measure of competitive balance. There are multiple calculations of balance, each with their own strengths. In recent literature, three measures have emerged: 1) the ratio of standard deviation of winning percentage; 2) winning percentage Gini coefficients; and 3) the Competitive Balance Ratio. In addition, there are several variations to these calculations to adjust for different circumstances, like home advantage. These measures are important, as they may indicate whether the NBA, under its current policy measures including the soft cap, has optimal competitive balance already.

The relative standard deviation measure of competitive balance traces back to the research from Noll (1988) and Scully (1989), later popularized by Quirk and Fort (1992).¹⁶ The intention was to create a method to compare balance between different sports. The number of games that make up a season differs in most professional sports leagues. For example, NBA teams play 82 games in a season, far less than the 162 game MLB season, and far more than the 16 game NFL season. The more games a league plays the less possibility of random variation. As such, adjustments are necessary to compare

¹³ Stefan Szymanski, "Economic Design of Sporting Contests," *Journal of Economic Literature*, Vol. 41, 2003, 1156

¹⁴ Martin Schmidt and David Berri, "Competitive Balance and Attendance: The Case of Major League Baseball," *Journal of Sports Economics*, Vol. 2, May 2001, 164

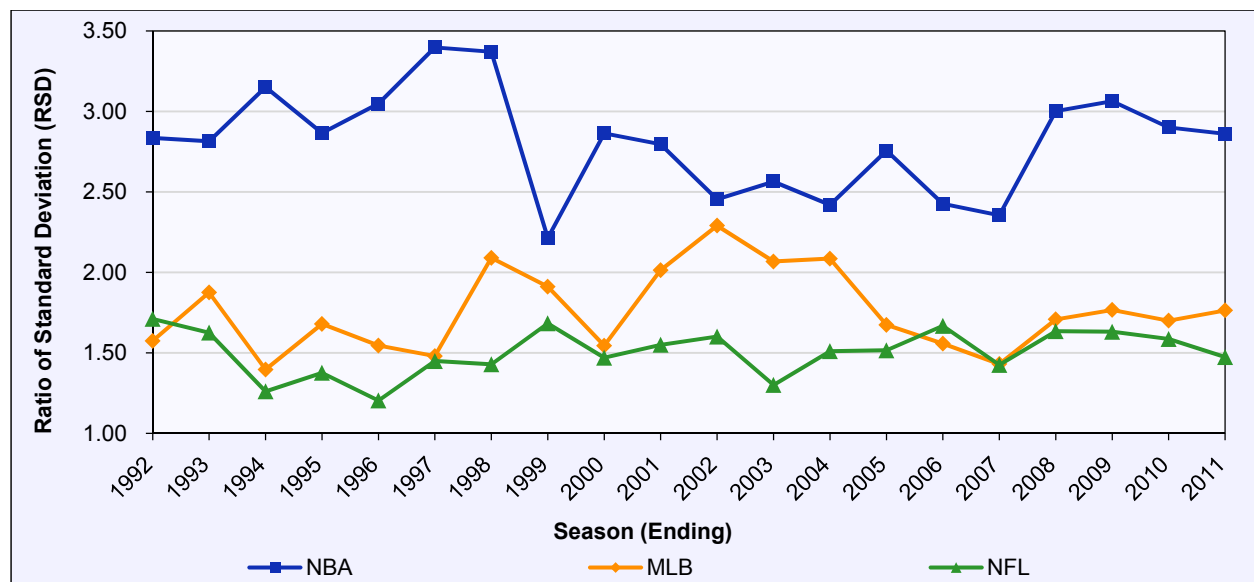
¹⁵ John Vrooman, "Theory of the Perfect Game: Competitive Balance in Monopoly Sports Leagues," *Review of Industrial Organization*, Vol. 34, February 2009, 6

¹⁶ Quirk and Fort "Competitive Balance in Sports Leagues," 244

the standard deviation of winning percentage between leagues. The RSD measure adjusts for this by dividing the actual standard deviation by the ideal standard deviation that would exist in a perfectly balanced league, in which all teams have an equal probability to win each game.

The RSD approach allows for comparisons of competitive balance over time and between different sports leagues, as it controls for both season length and number of teams. This measure is especially useful since its results are easy to interpret. For an actual perfectly balanced league, ASD equals ISD, and therefore RSD is equal to unity. Therefore, as ASD decreases relative to ISD, RSD increases beyond unity. As such, competitive balance decreases, as there is more dispersion in wins between teams than expected given the ideal.¹⁷ Under this approach, the NBA has, by far, the least competitive balance among the four NAPSLs. In this past decade, the NBA has an average RSD of 2.68, which is greater than the NFL (1.54) and MLB (1.81). While this measure of balance is widespread, often under other nomenclature, it does not adjust for factors that may influence ISD, like home advantage.

Figure 1: NAPSL Competitive Balance (RSD) 1992 to 2011



Trandel and Maxcy (2009) expounded on the RSD measure by questioning the ISD assumption that, in a perfectly balanced league, each team is equally likely to win. Instead, the authors call for a better explanation of competitive balance in order to consider home advantage, which they argue is rather significant, as home teams win more than they lose. In the NBA, for example, from 1990 to 2007, the home winning percentage was 60.8%.¹⁸ The authors briefly consider explanatory factors for home advantage, including crowd noise, travel time, rest, familiarity with the playing field, and so on. They assert that with the RSD measure, the ISD denominator is too large, as it does not adjust for home advantage. This deflates the value of the RSD, and “overestimates a league’s degree of competitive balance.” Further, they find that the NBA, despite its significant home advantage, has the least competitive balance among sports leagues, but not to the extent that RSD suggests.

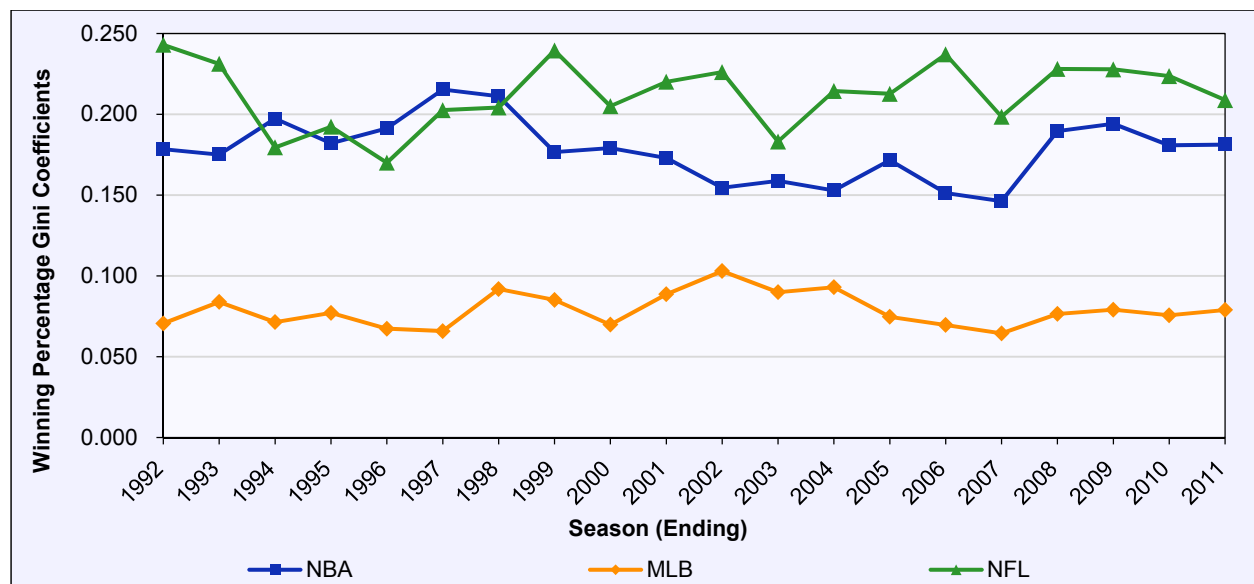
¹⁷ Rodney Fort, “Comments on Measuring Parity,” *Journal of Sports Economics*, Vol. 8, December 2007, 643

¹⁸ Gregory Trandel and Joel Maxcy, “Adjusting Winning-Percentage Standard Deviations and a Measure of Competitive Balance for Home Advantage,” *Journal of Quantitative Analysis in Sport*, Vol. 7, January 2011, 3

Schmidt (2001) rejected the RSD approach as a measure of competitive balance in favor of a “more conventional economic measure” of inequality, the Gini coefficient. This measure uses a defined range between perfect equity (0) and perfect inequity (1).¹⁹ Perfect equity shows a perfectly balanced league in which there is an even distribution of wins. As the value of the coefficient approaches one, there is greater dispersion of wins among the teams, and therefore, there is less competitive balance. The NBA’s Gini coefficient in the past decade is 0.168, which is between the NFL (0.216) and MLB (0.080). To put this into perspective, the NBA’s winning disparity is low relative to other Gini applications, such as a measure of U.S. income inequality (0.450 in 2007).²⁰ The NFL is interesting, as it has the highest competitive balance according to the RSD measure, but the highest Gini coefficient. This discrepancy raises concerns about Gini as a proper measure of balance.

Utt and Fort (2002) argued that Gini coefficients have several disadvantages. First, perfect inequity is impossible, as one team cannot possibly win all the number of games played in a season. This idea understates competitive imbalance.²¹ Moreover, unstandardized Gini coefficients are incapable of addressing some features of professional sports, such as unbalanced schedules or differences in season lengths. For example, since the NFL plays less than one tenth the amount of games in a season as MLB, the variance between league winning percentages is generally higher. In the NFL, teams like the 2007 New England Patriots can win all their games, while teams like the 2008 Detroit Lions can lose all their games. This level of dispersion is improbable in the NBA and MLB. Ultimately, Utt and Fort asserted that RSD is the more appropriate measure of within-season competitive balance. Unstandardized Gini coefficients are more relevant for measuring income and spending inequality.

Figure 2: NAPSL Competitive Balance (Gini Coefficient) 1992 to 2011



¹⁹ Martin Schmidt, “Competition in Major League Baseball,” *Applied Economics Letters*, Vol. 8, 2001, 22

²⁰ “Distribution of Family Income - Gini Index,” *The World Factbook 2009*, (Washington, DC: CIA, 2009)

²¹ Joshua Utt and Rodney Fort, “Pitfalls to Measuring Competitive Balance with Gini Coefficients,” *Journal of Sports Economics*, Vol. 2, November 2002, 368

The RSD and Gini coefficient measures of balance refer to “within-season” competitive balance. As such, they do not adequately capture season-to-season changes in relative standings. Humphreys (2002) argued that for time-series data, both RSD and Gini are insufficient. For one, RSD depends on the number of games played in a season, which may change, as it did in Major League Baseball in 1962. In addition, RSD does not address within-team variation in winning percentages “that capture team-specific variation during seasons.”²² To address the impact of variation in league standings over time, he developed a complementary measure of competitive balance, the CBR. Its calculation is a simple ratio of the average team-specific variation over a number of seasons by the average within-season variation of winning percentage over the same period.

Humphreys argued that there are several applications of the CBR measure of competitive balance. On the demand side, CBR is superior to other measures of balance, such as RSD and Gini coefficients, in explaining the relationship between fan interest, in terms of attendance, and parity. Humphreys found that consumer demand depends not on the league’s competitive balance in that particular season, but the “amount of turnover in relative standings in the league.”²³ As such, attendance may lag behind changes in competitive balance. According to this, a higher relative win dispersion in previous seasons will likely result in a decrease in fan perception of balance. Therefore, the analysis of this relationship uses a regression of current year demand against current and previous year balance.

This theory for consumer demand corroborates the conclusion found in Schmidt and Berri (2001). This idea is an extension of Rottenberg’s UOH. For example, if a team’s winning percentage in a particular season is unexpectedly inconsistent with its performance in previous seasons, then that team’s attendance will likely suffer in the following year, but not in the current year. Overall, CBR is useful in explaining relative change in balance over a time series and in buttressing the general theory of outcome uncertainty in professional sports. Ultimately, RSD remains superior for measuring within-series competitive balance and comparing them across professional sports leagues.

The NBA’s Competitive Imbalance

The empirical evidence of competitive balance, by all relevant measures, shows that the NBA is the least balanced among the four major North American professional sports leagues. The theoretical justification of competitive balance demonstrates that the NBA’s relative lack of parity may have long-term consequences. Most importantly, according to the UOH, it may reduce consumer demand. In addition, the NBA’s low competitive balance may offer insight into the effectiveness of certain policy measures, such as the soft salary cap, which are unique to the league. As such, the discussion of scholarly research now turns to the explanation of the NBA’s competitive imbalance first and the analysis of its impact on consumer demand for the NBA product second.

Perhaps the most interesting explanation of the NBA’s relative competitive imbalance does not focus on the league’s economic structure or the effectiveness of its policy measures. Instead, Berri et al. (2005) focused on the underlying talent pool that the league has drawn upon. They analyzed the cause of historical shifts in balance through the lens of evolutionary biology. They reviewed the

²² Brad Humphreys, “Alternative Measures of Competitive Balance in Sports Leagues,” *Journal of Sports Economics*, Vol. 3, May 2002, 136

²³ *Ibid.*, 146

applicability of Stephen Jay Gould literature on sports, which concluded: “As the amount of talent closer to the biomechanical limit increases, the distribution of wins should improve.”²⁴ The NFL and MLB’s increase in balance in the 1990s relative to preceding decades was consistent with this idea. However, the NBA experienced the least competitive decade in league history during the 1990s. The authors’ explanation for this trend was the “short supply of tall people” in the population.²⁵

Unfortunately, for most of the population, “you can’t teach height.”²⁶ Since the NBA draws upon not only a highly skilled, but also an extremely tall talent pool, it inherently restricts most of the world’s adult male population. The authors noted, “97.9% of young adult males are six feet three or smaller; however, for the NBA, which is only true for less than 20% of players during the 2003-2004 season.”²⁷ This disparity widens as height increases. This limited talent pool results in greater variation in playing skill and performance among extremely tall players, usually at the center position. The authors conclude that this large “variability of performance” causes competitive imbalance.²⁸ One area that the authors neglect to consider is the relationship between player height and salary. It is reasonable to assume that high-revenue teams are willing to pay more for taller players, all other things equal. As such, revenue disparity leads to talent disparity and competitive imbalance.

The most frequent explanation for the NBA’s relative competitive imbalance is the lack of meaningful subsidization devices to ensure the transfer of revenue and talent from large to small market teams. In particular, unlike other professional sports leagues, the NBA only has minimal revenue sharing programs. Rottenberg (1956) cautions against revenue dispersion among teams: “the nature of the industry is such that competitors must be approximately equal ‘size’ if any are to be successful.”²⁹ Until the most recent 2011 CBA, the NBA did not have any provisions to distribute local television revenue, which accounts for a significant portion of the league’s annual BRI. In addition, home teams do not distribute any portion of gate receipts to away teams. This revenue disparity between teams results in pay dispersion between high-revenue and low-revenue franchises.

Revenue disparity is a persistent problem in the NBA, yet league attendance does not seem to suffer, since fans embrace dominant franchises, especially in large markets. As such, the league has employed a “dynasty” strategy in order to maximize national television contracts by funneling its marketing budget to highlight star players on these dominant teams. The strategy is consistent with the idea that fan interest, and therefore television ratings and overall league revenue, increased as the NBA’s competitive balance decreased in the golden era. Vrooman (2009) explains that the NBA’s historical growth in league revenue and player salaries has largely come as a result of windfall television contracts.³⁰ As monopoly power has replaced monopsony power in shaping the economic structure of professional sports, television revenue has become more important.

²⁴ David Berri, Stacey Brook, Bernd Frick, Aju Fenn, and Roberto Vincente-Mayoral, “The Short Supply of Tall People: Competitive Balance and the National Basketball Association,” *Journal of Economic Issues*, Vol. 39, 2005, 1033

²⁵ *Ibid.*, 1034

²⁶ David Berri, Martin Schmidt, and Stacey Brook, “Notes to Pages 63-65?,” *The Wages of Wins: Taking Measure of the Many Myths of Modern Sport*, (Stanford, CA: Stanford University Press, 2006), 235

²⁷ Berri et al., “The Short Supply of Tall People,” 1034

²⁸ *Ibid.*, 1037

²⁹ Rottenberg, “The Baseball Players’ Labor Market,” 242

³⁰ Vrooman, “Theory of the Perfect Game,” 25

Vrooman (2012) argued that since revenue maximization is the result of the collusive attempts by NBA franchises to limit franchises, the league has adopted a dynasty strategy to increase the revenue it derives from national media rights contracts. Since national fans place a higher value on dominant teams, the NBA has greater incentive to promote competitive imbalance and favor large-market and high-revenue teams. Furthermore, since the league shares national television revenues equally, small-market teams, if they are profit maximizing, are willing to go along with imbalance.³¹ Therefore, since consumers have historically preferred some level of win dispersion between teams, imbalance is optimal. Going forward, Vrooman concluded that since local television rights is becoming increasingly important in recent years, the NBA may abandon the dynasty strategy to improve competitive balance and make the NBA product more preferable to local fans.³²

Connected to the explanation of the NBA's relative competitive imbalance is the discussion of the relationship between league parity and fan interest. The increase in NBA popularity during the 1980s and 1990s places the applicability of Rottenberg's uncertainty of outcome hypothesis in question. As league attendance, television ratings, and BRI rose during this golden era, competitive balance was at historically low levels.³³ Berri, Schmidt, and Brook (2006) discuss this paradox, in which "from 1986 to 2007, when most teams were shut out from the NBA title picture, per-team attendance rose 49%.³⁴ In their regression analysis of gate revenue, they find that competitive balance, in terms of RSD, is not a statistically significant factor. As such, they find that the NBA does not fall within the scope of the UOH. Instead, they propose that fans care more about star power than parity.

Berri, Schmidt, and Brook (2004) evaluated NBA consumer demand by analyzing the relationship between star power and relative changes in gate receipts. They argued that performance, in terms of team standings, does not drive fan interest, in terms of gate receipts and local television ratings. In addition, they noted previous research, which found that "the presence of stars had a substantial effect on television ratings, even after adjusting for team quality."³⁵ To analyze this relationship, the authors constructed an empirical model to explain the demand for professional basketball given the lack of competitive balance. While the authors found that while star power was significant, they ultimately concluded that a team's ability to generate wins is "the engine that drives consumer demand."³⁶ Further, they found that competitive balance does not explain gate receipts at a statistically significant level, which suggests that it matters less to NBA fans than it does in other sports.

Overall, multiple areas of scholarly research do not address the various topics discussed in this thesis. For one, while the relationship between competitive balance and fan interest has been explored in theory with Rottenberg's, and empirically with Berri's star power model, the explanations for the NBA's lack of balance during the 1990s are inadequate. Second, the importance of pay dispersion among teams seems to be relatively unexplored in research scope. Specifically, this thesis will focus on whether high-revenue or large-market teams spend more on player salaries. Ultimately, empirical research into the link between payroll disparity and the NBA's competitive balance is necessary.

³¹ John Vrooman, "Two to Tango: Optimum Competitive Balance in Pro Sports Leagues," in *The Econometrics of Sport*, eds. Placido Rodriguez, Stefan Kesenne, and Juame Garcia, (Edward Elgar Publishing Limited, 2012), 14

³² *Ibid.*, 20

³³ Berri, Schmidt, and Brook, *Wages of Wins*, 67

³⁴ *Ibid.*, 71

³⁵ Berri, Schmidt, and Brook, "Stars at the Gate," 34

³⁶ *Ibid.*, 45

RESEARCH DESIGN

Overview

The methodology of this thesis is primarily quantitative. This study will measure the historical relationship between pay dispersion and competitive balance in the NBA by using various regression models. Additionally, the research design includes several time series charts to show the relative change in pay and revenue dispersion and competitive balance over the past twenty seasons. The focus of the thesis will be on data from the 1991-1992 to 2010-2011 seasons, as these years most accurately reflect the modern NBA. In the current section, the discussion will turn towards the each component of the regression models, including the data sources, the relevant variables for each statistical test, and finally an overview of each aspect of the empirical analysis.

Data Sources and Variables

NBA franchises are generally subsidiaries of limited liability corporations, which are not obligated to disclose their financial records publicly. In particular, the NBA does share data for team gate receipts, total revenue, and team payroll spend. As such, the empirical analysis in this thesis uses unofficial data from several sources, some of which are estimates. NBA payroll data is from Patricia Bender's estimates of player salaries. The salaries for individual players are not completely precise, as there are minor inconsistencies, especially in the salaries for players who changed teams during the course of the season. For the purpose of this thesis, these discrepancies are insignificant. For the statistical analysis of pay dispersion, each team's payroll spend during a season was calculated as a percent of total league payroll. This removed the linear trend, which would have distorted the analysis.

For the analysis of the league's revenue dispersion and its influence on pay dispersion and imbalance, this thesis calculated each team's per game gate receipts. They are the product of average per game team attendance, from data in the public domain, and a team's average ticket price in that same year, from the NBA's team marketing reports. Since this information is sourced directly from NBA teams, it is official data. However, teams calculate their average ticket price for home games based on maximum arena capacity. Since not all games sell out, this average understates the actual ticket price. Furthermore, the TMRs for the 2006-2007 and 2009-2011 seasons are unavailable. As such, gate receipts for these years are also unavailable. This thesis will also use 1998-2001 and 2002-2011 team revenue approximations from *Forbes Magazine*. These values estimate total team revenue, which may include revenue derived from media rights, merchandising, naming rights, and revenue sharing.

Additional data sources for non-public information include the average annual Nielsen household television ratings for the NBA Finals for the 1991 to 2010 seasons from the media analytics website *TV by the Numbers*. While these values are official, they do not convey much information about fan interest. Since they only capture the television ratings during the NBA Finals, they do not show the relative change in consumer demand for non-playoff teams. As such, attendance or gate receipts are a better measure of fan interest and how it relates to other variables, including competitive balance, revenue and market categorizations, etc. Related to this is the estimation of the current television market size for each NBA team and its rank relative to other teams in the league. This information is unofficial data from another sports media analytics site, *Sports Media Watch*. Since this data does not sort by year, its use for empirical analysis is limited to categorizing teams by market size.

The remaining data sources for other variables are all public information. In this thesis' empirical analysis of competitive balance of league regular season winning percentages, the data comes from annual team standings for each professional sports league. Specific data sources include the *Sports-Reference* websites. Since for the NBA and MLB, winning percentages for each team are defined as team wins divided by the number of total games in a season, there is no adjustment necessary for ties. However, because ties are possible in the NFL, each team's annual winning percentage is calculated as the sum of its wins and one-half of its ties divided by the number of games in the season. The NHL uses points for standings. Teams gain two points for wins, one point for ties, and one point for overtime losses and ties, which existed before the 2005-2006 season. Since the conversion of points into winning percentage is troublesome, the NHL was excluded from the empirical analysis.

Additionally, it is necessary to adjust several variables for inflation in order to remove the general increase in prices over time. Otherwise, this trend would distort the various regressions in the empirical analysis. As such, this thesis uses data from the BLS to measure the United States' CPI over time. By using monthly CPI data, it is possible to create an average CPI for the NBA regular season rather than an annual average. The data uses the average of monthly CPI from October to April to replicate inflation between seasons, not years. The CPI adjustment for inflation is necessary to adjust for the relative trend in NBA franchise gate receipts from 1992 to 2011. This inflation-adjusted gate receipts (in 2011 dollars) will be useful in the regression for the consumer demand model.

The final source of data comes from Maxwell (2010) and his analysis of NBA franchise market size, which uses 2000 United States census information to measure the population within a certain radius from the team's home arena.¹ This data is available in two forms. The first measures market size based on shared population. Therefore, it does not allocate population and markets entirely to one team. This is important for the New York market, which is shared by the Knicks and Nets. The second form measures market size by not sharing population between teams. Instead, it is allocated completely towards the closest team. Since this data will facilitate categorizing teams into large or small-markets in the analysis of pay, revenue, and winning dispersion, it is important that the data is accurate. Unfortunately, Canadian census information does not allow for this type of categorization. As such, market size data for the Toronto Raptors and Vancouver Grizzlies is not available.

Furthermore, since the market size data is a static measure of population from the 2000 Census, it does not describe changes in market size over time. A second concern is that many teams, especially dynasties, derive a significant portion of their fans from across the world. These fans live outside of the 40-mile radius from their team's home arena. As such, this data serves as only an approximation of market size, as it is clearly understated. An additional concern is that the data is not a true reflection of market size. It does not take into account the strength of each team's individual markets, in terms of buying power. If teams are in wealthier markets, it is reasonable to assume that their fanbase is more willing to pay premiums for their tickets, all other things equal. Overall, the categorization of market size may not even yield significant results, and therefore alternate measures of classification, such as each team's total revenue from *Forbes Magazine*, may be more appropriate.

¹ Christopher Maxwell, "NBA Population Bands and Per Capita Income," *cMaxxSports.com*, 2010

Since the empirical analysis of this thesis will employ multiple time series regressions, it is necessary to use multiple dummy variables to account for any interventions in the data, which may distort the results otherwise. For example, revisions to the CBA, as in 1988, 1995, 1999, and 2005, will influence any type of analysis. Since each of these changes to the labor agreement introduce and revise the league's various subsidization devices, like further exceptions to the soft salary cap and the luxury tax, they very likely impact revenue and pay dispersion among teams. They also may have an impact on the league's competitive balance. As such, time series graphs will visually indicate the effect of these revisions to suggest whether they had any measureable effect. Furthermore, dummy variables will assess the statistical significance of these revisions in the regression analysis.

Dummy variables are also necessary to account for significant changes in the league. For example, record fan interest in the 1990s may, in some level, been the result of the immense popularity of Michael Jordan. The regression analysis in this thesis will introduce multiple dummy variables to account for his retirements and subsequent comebacks. Additionally, there will be additional dummy variables to see the effect of the NBA lockout in 1998-1999, Shaquille O'Neal's signing with the Los Angeles Lakers, the arrival of LeBron James, etc. Statistical analysis will determine whether any of these events had a measureable impact on the league's gate receipts and attendance. Finally, a dummy variable will determine whether a particular NBA team plays in a market without any competitor franchises from other professional sports leagues. This will see whether certain teams, such as Oklahoma City, benefits from having no sports team counterparts in the NFL, MLB, or NHL.

Statistical Relationships

The methodology of this thesis depends on empirical analysis of five statistical relationships. Overall, these tests will provide insight into each research question. First, this thesis will examine the NBA's competitive balance relative to that of the other major NAPSLs using a time series. Specifically, this test will evaluate balance as it relates to deviation of regular season winning percentages between teams in a season. To account for differences in season length and the number of teams between the leagues, this thesis will use ratio of standard deviation, as the measure for balance. The Gini coefficient measure does not account for these discrepancies. The home-adjusted RSD approach is not applicable to this thesis, since it requires home winning percentage data for each professional sports league in the past twenty seasons, which was unavailable.

Furthermore, in the time series analysis, any revision to the CBA will indicate a break point. The test will show the average RSD during each CBA revision to evaluate how each subsidization device has historically affected competitive balance. Regression analysis will provide further, measureable evidence on the significance of these changes. Overall, this analysis will only show whether the NBA has more or less competitive balance than other sports leagues. It will not offer any insight into whether the NBA's relative competitive balance is optimal. To determine this, analysis into the NBA's consumer demand model and its relationship to league parity is necessary.

Second, this thesis intends to determine the relationship, if any, between competitive balance and fan interest. This test will show whether fans care if the NBA has parity or not. As such, this test will analyze the applicability of Rottenberg's UOH in the modern NBA. The consumer demand model will use a multiple regression of the annual RSD measure of balance against multiple variables that measure fan interest. These variables include annual league attendance, Nielsen household television

ratings for the NBA Finals, and average inflation-adjusted gate receipts per year. It is necessary to include several dummy variables in this regression, as well, in order to account for various changes in consumer demand. For example, the retirement of Michael Jordan and the arrival of LeBron James may have influenced fan interest at a statistically significant level.

This analysis of consumer demand in the NBA may yield significant results. If NBA gate receipts do not depend on the league's current competitive balance at a statistically significant level, as research by Berri, Schmidt, and Brook (2004) specified, the correlation between the two variables would likely be either minimal or immaterial. The results of this regression also may indicate whether the league's present level of balance is optimal in terms of revenue-maximization. Furthermore, this test may explain the increase in league popularity during the golden era of the 1990s. At the very least, it will show the relevance of Rottenberg's uncertainty of outcome hypothesis in the star-driven NBA.

Next, this thesis will determine whether payroll disparity exists in the NBA. This thesis reasonably assumes that the soft cap system is the cause for the league's payroll disparity. This analysis will include several tests. First, a Gini coefficient test of historical pay dispersion between franchises will measure the actual value of pay dispersion in the NBA over time, relative to the other professional sports leagues. This analysis will determine whether pay dispersion can exist in a league that has several subsidization devices to limit payroll spend for all teams uniformly, including the salary cap, maximum player salaries, the luxury tax system, etc. The Gini coefficient test will coincidentally analyze the effectiveness of each subsidization device in adjusting overall payroll spend in the context of the NBA by using vertical breaks and averages in the time series to indicate the impact of each CBA. Furthermore, regression analysis of the explanatory significance of each CBA revision and time on the NBA's historical pay dispersion will provide additional insight into the effectiveness of each policy.

The Gini coefficient test does not determine the significance of pay dispersion in terms of competitive balance and consumer demand. As such, it is necessary to test the relationship between franchise market size and their normalized payroll spend to see whether large-market teams in the NBA spend more, on average, than teams in smaller markets. This measure uses a cumulative distribution function to assign a standard score for each team's payroll spend, relative to other teams, in a given season. The categorization of market size will depend on population reach of each team within a 40-mile radius from their home arena. Next, a time series chart of the historical ratio of revenue to payroll spend for each team, grouped into thirds by their market size, over the past twenty seasons, may provide further insight into the financial incentive for teams to spend more on player salaries. This analysis could explain pay dispersion in the NBA, as it may show that large-market teams may justify high payrolls because it may not only lead to additional wins, but also incremental revenue.

Additionally, a second pay dispersion test will determine whether high-revenue teams in the NBA, spend more, than low-revenue teams. The first time series chart will analyze the normalized payroll spending of teams, grouped into thirds by their average revenue ranking. The categorization of revenue will depend on ranking each franchise's annual revenue as a percent of total revenue for that season, using the data from *Forbes Magazine*. Next, a linear regression of percent of total payroll spend against percent of total league revenue may indicate whether revenue can explain the variance in player salary expenditures for each team over the last twenty seasons. This regression will provide additional insight into the historical impact of revenue dispersion on pay dispersion.

Fourth, in the team performance model, this thesis will analyze team payroll relative to its on-court performance, to see whether payroll spend has a statistically significant effect on winning percentage. In short, does additional payroll spending, made possible by the exceptions to the salary cap system, result in more wins? This may also show whether there are other, more meaningful factors in play in explaining variance in team performance. For this analysis, it is necessary to regress each team's winning percentage in a season against their relative payroll spend. This test will also rely on a time series of high, middle, and low-spending teams and their respective average winning percentage over time. Finally, an additional time series chart will measure the winning percentage of teams, grouped into thirds by their market size rankings. Overall, this team performance analysis may show that seemingly excessive spending is not in the best interest for teams, in terms of win maximization, depending on their particular market size, revenue, or payroll spend ranking.

The final regression model will test the league's claim that the relative payroll disparity between high-revenue and low-revenue or large-market and small-market teams, from the league's soft salary cap system, has produced low competitive balance. This test uses a regression of the league's annual RSD measure of competitive balance against the annual Gini coefficient of payroll spend measure of pay dispersion. In addition, the model will use several dummy variables, provided they are statistically significant and not correlated with each other, to account for changes to the league's CBA in the past twenty seasons. This intervention analysis will test the impact of the NBA's existing subsidization devices. Overall, this regression model will determine whether the league should have adopted the new policy measures that transfer additional revenue to low-drawing teams.

Hypothesis

As there are several research questions and statistical relationships in the scope of this thesis, there are similarly multiple hypotheses related to this issue of the effectiveness of the NBA's soft salary cap in decreasing pay dispersion and increasing balance. This thesis will test five distinct hypotheses. First, there is competitive balance in the NBA. Second, fans would prefer to have a league with more parity, like the NFL. Third, the soft system allows large-market or high-revenue teams to take a disproportionate portion of the league's talent pool, as they spend more. In other words, there is payroll disparity. Fourth, franchises that spend more, generally win more, at a statistically significant level, as they have more talent. The overall hypothesis of this thesis is that the NBA's argument is economically reasonable and the league's soft salary cap system does indeed create payroll disparity between small-market and large-market teams, and competitive imbalance.

EMPIRICAL ANALYSIS

Competitive Balance

The most fundamental aspect of this thesis' empirical research is the analysis of the NBA's relative balance among the other professional sports leagues. Since this thesis intends to evaluate the league's argument from the 2011 CBA negotiations that the NBA's pay dispersion among its franchises has produced competitive imbalance, this analysis is critical. The results of this analysis are predictable. The NBA has considerably less competitive balance than MLB or the NFL, in terms of the ratio of standard deviation measure, which adjusts for differences in season length and number of teams. At no point within the past twenty seasons did the NBA have a lower RSD than these other professional sports leagues. These results confirm common fan sentiment on the league's relative lack of parity.

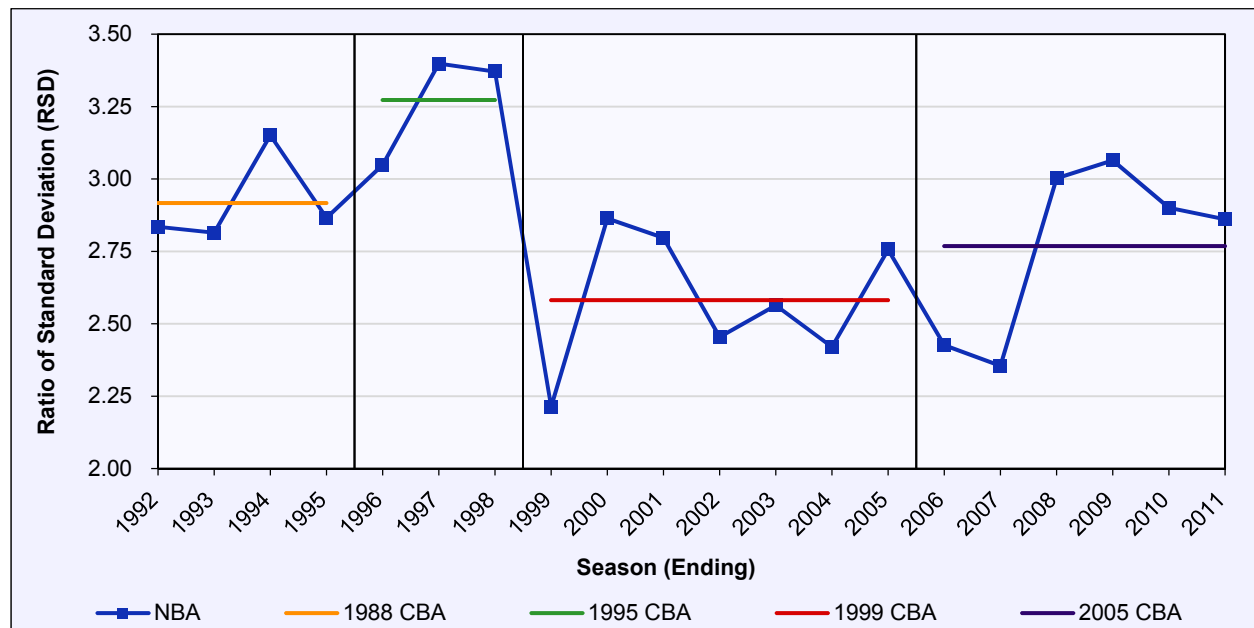
Table 2: NAPSL Competitive Balance (RSD) 1992 to 2011

<i>Season (Ending)</i>	<i>NBA</i>	<i>MLB</i>	<i>NFL</i>
1992	2.83	1.57	1.71
1993	2.81	1.88	1.63
1994	3.15	1.40	1.26
1995	2.87	1.68	1.38
1996	3.05	1.55	1.20
1997	3.40	1.48	1.45
1998	3.37	2.09	1.43
1999	2.21	1.91	1.68
2000	2.86	1.54	1.47
2001	2.80	2.01	1.55
2002	2.45	2.29	1.60
2003	2.56	2.07	1.30
2004	2.42	2.09	1.51
2005	2.76	1.67	1.52
2006	2.43	1.56	1.67
2007	2.35	1.43	1.43
2008	3.00	1.71	1.63
2009	3.06	1.77	1.63
2010	2.90	1.70	1.59
2011	2.86	1.76	1.47
<i>Average</i>	<i>2.81</i>	<i>1.76</i>	<i>1.51</i>

Additionally, this conclusion highlights the differences among these leagues. Even without a salary cap system, MLB competitive balance remained impressively high during this period. Remarkably, unlike the NBA or the NFL, baseball rarely has dominant teams in terms of regular season winning percentage. The average winning percentage of the best and worst teams for each season over the past twenty ears is 63.4% and 36.3% respectively. This spread is far tighter than the NBA (77.6% and 19.2%) and the NFL (85.6% and 11.9%). However, while the NFL's comparatively short schedule may

produce extensively outlier teams, such as the 2007 New England Patriots and the 2008 Detroit Lions, the typical winning percentage dispersion among most of its teams is low. In other terms, there are far less outliers, in terms of winning percentage, in the NFL than there are in the NBA.

Figure 3: NBA Competitive Balance (RSD) 1992 to 2011



While these results suggest that the NBA has less relative balance, they do not point to the cause of balance or the effectiveness of the league’s various subsidization devices. The NBA and its owners have repeatedly claimed that it desires additional policy changes to the league’s collective bargaining agreement, all in a professed effort to improve competitive balance. As such, it is necessary to examine whether each policy measure, measured in terms of changes to the CBA, has accomplished its professed goal and materially influenced competitive balance. In the time series chart of the NBA’s RSD measure in the past twenty years, each revision to the CBA seems to have had a measureable impact on the league’s competitive balance. In particular, the changes made in the 1995 CBA, which introduced additional cap exceptions, seem to have decreased balance. Likewise, the time series seems to indicate that the 1999 CBA, which introduced the league’s first luxury tax, reduced RSD.

Regression analysis on the impact of each CBA revision and their respective changes to the league’s subsidization devices provides more insight into the effectiveness of the NBA’s various subsidization devices in increasing balance. The linear regression model of the RSD time series in the past twenty years uses intervention analysis with each CBA revision as dummy variables to produce a model that describes the relative influence of the changes in each CBA. Since this test does not distinguish between the various policy changes in each revision to the labor arrangement, it cannot possibly determine the impact of the specific policy measures. For example, even though the 1995 CBA may have increased league RSD at a statistically significant level, it would be impossible to attribute this exclusively to the introduction of several additional salary cap exceptions, at least without additional analysis. As such, the conclusions that this competitive balance model yields is inherently limited.

Table 3: Multiple Regression of NBA Competitive Balance (RSD) 1992 to 2011**Model Summary^b**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.775 ^a	.600	.525	.223835	2.018

a. Predictors: (Constant), Lockout_1999, CBA_1995, Time

b. Dependent Variable: RSD_Current

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.204	3	.401	8.009	.002 ^a
	Residual	.802	16	.050		
	Total	2.005	19			

a. Predictors: (Constant), Lockout_1999, CBA_1995, Time

b. Dependent Variable: RSD_Current

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.825	.119		23.723	.000
	Time	.037	.016	.665	2.245	.039
	CBA_1995	.228	.180	.257	1.267	.223
	Lockout_1999	-.669	.227	-1.008	-2.951	.009

a. Dependent Variable: RSD_Current

This multiple regression model of competitive balance is statistically significant. However, it does not explain one hundred percent of the variance in observations of the league's RSD measure of balance in the past twenty years. The model indicates a statistically significant positive trend in RSD in the NBA from 1992 to 2011. This result aligns with the sentiment that the NBA's competitive balance has decreased over time, especially during its golden age of the 1990s. Moreover, the model suggests that only the 1999 lockout and the subsequent policy measures that it produced is material. Additional dummy variables, such as CBA revisions in 1988, 1999, and 2005 are not included to remove multicollinearity in the interest of parsimony. Since its coefficient is negative, the 1999 lockout likely promoted balance by creating effective policy measures in the following 1999 and 2005 CBA revisions.

Overall, it is difficult to conclude whether any revision to the CBA caused an increase in the league's competitive balance. Even the statistically significant dummy variable, the 1999 lockout, does not point to whether a specific policy measure or even the subsequent CBAs in 1999 and 2005 actually influenced the decrease in RSD in the following years. As such, the league's argument for a hard salary cap or additional owner-friendly policies would improve competitive balance is unfounded. In addition, while these results make it clear that the NBA has less balance than the other professional sports leagues, they do not suggest whether the NBA's relative imbalance is any less optimal. This

conclusion requires further analysis into whether competitive balance has been among the historical drivers behind fan interest and the applicability of Rottenberg's UOH in the modern NBA.

Consumer Demand

In contrast to the general consumer demand model in Berri, Schmidt, and Brook (2004), this thesis focuses on the relationship between the NBA's competitive balance and fan interest in the league. As such, the scope of this analysis is limited to whether NBA fans care about parity at a statistically significant level. Several variables measure the league's consumer demand. For example, the regression of competitive balance in terms of RSD against the average fan attendance in each season may indicate whether additional dispersion of league winning percentages results in less team attendance. However, since the 1998 lockout shortened the 1999 season to just fifty games, each team's per game attendance for home games is more appropriate. Moreover, since attendance likely depends on additional factors beyond competitive balance, such as arena capacity constraints, star power, and ticket prices, it may not be a relevant measure of NBA consumer demand.

An additional measure of league fan interest includes Nielsen household television ratings for the NBA Finals. However, like attendance, there are several flaws to this metric. For one, the NBA Finals is a national television event. As such, it often attracts interest from individuals who do not normally consume the NBA regular season product. Therefore, this measure inflates consumer demand in the league. Furthermore, it is very likely that the relative change in television ratings for NBA Finals depends on the league's media rights contract with a broadcast network. For example, the transition from NBC to ABC in 2002 may have influenced the Nielsen ratings. Additionally, NBA Finals ratings are likely very dependent on the market size and the fan following of the two teams competing in the championship series. It is more suitable to use another measure of NBA consumer demand.

The most appropriate measure of fan interest in the league's past twenty years is average, inflation-adjusted, per game gate receipts for each season. To arrive at this metric, it is necessary to multiply each team's average ticket price from their official TMR by their average home game attendance in each season. Next, the average of these values is adjusted for inflation that would have distorted the regression. Manipulating CPI data from the BLS to account for the increase in the CPI between seasons, not years, makes it possible to remove the linear trend caused by inflation in the time series for per game gate receipts. This is the most relevant measure of consumer demand since it only consists of direct sources of revenue from the NBA regular season product, and not ancillary drivers of revenue, such as licensing or the sharing of national television revenue.

Next, in the empirical analysis of the relationship between gate receipts and competitive balance, additional dummy variables from the dataset are necessary to account for interventions in the league that may have a material impact on consumer demand. The regression analysis used three dummy variables for this analysis: the playing careers of Michael Jordan, Shaquille O'Neal, and LeBron James. It is reasonable to assume that the presence of these superstars in the regular season may increase gate receipts in the league. For example, the first retirement of Michael Jordan from the league before the 1993-1994 season likely decreased attendance among non-season ticket holders, not only for the hometown Chicago Bulls, but also for teams that the Bulls played on the road. As such, it is necessary to test whether events have had a statistically significant impact on consumer demand.

Finally, the regression of inflation-adjusted gate receipts against current season RSD, rather than previous season RSD, produced superior results, in terms of statistical significance. This conclusion contrasts with the analysis of competitive balance and consumer demand in Humphreys (2002). He determined that the amount of relative turnover in league standings influenced fan interest. However, by using current year RSD measure for competitive balance as the independent variable, the regression improved. As such, not only does fan interest not lag one season behind changes in balance, there is no statistically meaningful relationship between fan interest and balance overall.

Table 4: Multiple Regression of NBA Per Game Gate Receipts 1992 to 2011

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.659 ^a	.434	.353	121.18371	0.334

a. Predictors: (Constant), LeBron_Career, RSD_Current, Time

b. Dependent Variable: Gate_Receipts_Infl_Adj

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	157711.499	2	78855.750	5.370	.019 ^a
1	Residual	88654.313	14	14685.493		
	Total	363308.395	16			

a. Predictors: (Constant), LeBron_Career, RSD_Current, Time

b. Dependent Variable: Gate_Receipts_Infl_Adj

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	927.709	287.760		3.224	.002
1	RSD_Current	-76.110	94.296	-0.169	-0.807	.433
	Time	17.038	6.004	0.593	2.838	.013

a. Dependent Variable: Gate_Receipts_Infl_Adj

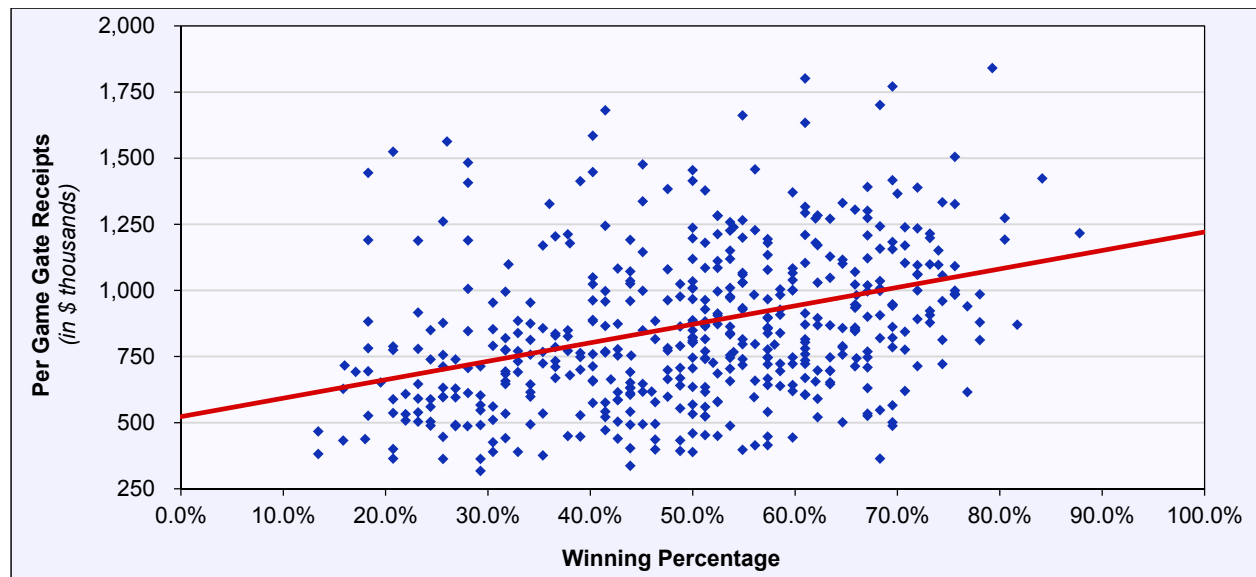
The results of this regression analysis are interesting and seem to have confirmed the NBA's apparent decision to employ a dynasty and star-focused marketing strategy. The league's RSD not explain incremental changes in inflation-adjusted gate receipts at a meaningful level. Even the inclusion of dummy variables to adjust for intervention events that influenced demand did not make the overall multiple regression model significant. Of them, only the 1998-1999 lockout and the playing career of LeBron James were significant. However, their coefficients were positive and negative, respectively, as they were intuitively incorrect. The results suggest that the dummy variables are misrepresenting other factors that influenced NBA demand. Overall, while the negative coefficient of the RSD variable supports the applicability of the uncertainty of outcome hypothesis, since it is insignificant at a 95% confidence interval, it is reasonable to conclude that NBA fans do not prefer competitive balance.

Given these results, it seems that the league's professed goal of improving balance through various subsidization devices is dishonest. The NBA has historically been unable to do anything to improve balance. Additionally, an increase in competitive balance has no statistical influence on gate receipts. Therefore, the owners' hardline stance during the course of the 2011 negotiations seems to be more about increasing their monopsony power. The luxury tax and the salary cap do not increase competitive balance. Rather, they decrease salaries. As such, all league owners profit through lower costs and they have incentive to act collusively and limit salaries in the guise of improving balance. Furthermore, it seems likely that the league seeks to maintain competitive imbalance in order to facilitate the creation of dynasty teams and maximize revenue from national media rights.

The results of this regression model seem to align with Berri, Schmidt, and Brook's 2004 analysis, which also found that competitive balance has a statistically insignificant relationship with fan interest. Instead, these authors concluded the best determinant of consumer demand is star power. As such, greater concentration of star players in dominant teams, and subsequently less competitive balance, increases demand and television revenue. This analysis shows that the league has a financial incentive to continue to enable this transfer of talent. Moreover, as long as the NBA continues to share national television contracts, it is in the interest of low-revenue owners to allow these policies. Overall, the regression analysis of the league's consumer demand model suggests that Rottenberg's uncertainty of outcome hypothesis is not applicable to the NBA at a statistically meaningful level.

Connected to the NBA demand model, as it relates to competitive balance, is the relationship between team winning percentage and fan interest. The focus of this second model is whether fans were more willing to consume the NBA regular season product if their home team performed well, in terms of winning percentage. The regression of inflation-adjusted, per game gate receipts against winning percentage indicates that an incremental increase in team performance may lead to higher team revenue on a per game basis. This analysis is important. A positive, significant relationship would indicate that teams have a financial interest of improving their team performance. This conclusion may explain why some high-performing, small-market teams may still enjoy financial success.

Figure 4: Regression of NBA Team Revenue to Winning Percentage 1999 to 2011



In this regression, there is a statistically significant, positive relationship between a team's annual gate receipts and their winning percentage. While the correlation is quite low, suggesting other variables also explain variance in team revenue, this regression indicates that teams can earn a significant amount of revenue if they won even one additional game. This result fuels the idea that small-market teams in the NBA can remain financially successful as long as their on-court performance is high. Therefore, the faction of small-market owners that proposed hardline changes during the lockout negotiations was incorrect. As long as they win, these teams do not have a revenue disadvantage.

Table 5: Regression of NBA Team Revenue to Winning Percentage 1999 to 2011

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.438 ^a	.192	.189	293.428353	1.994

a. Predictors: (Constant), Time, Win_Percent

b. Dependent Variable: Gate_Receipts_Infl_Adj

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	9946208.226	2	4973104.113	57.759	.000 ^a
1	Residual	41844696.276	486	86100.198		
	Total	51790904.502	488			

a. Predictors: (Constant), Time, Win_Percent

b. Dependent Variable: Gate_Receipts_Infl_Adj

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	371.609	49.202		7.553	.000
1	Win_Percent	696.785	83.565	.340	8.338	.000
	Time	.610	.090	.276	6.759	.000

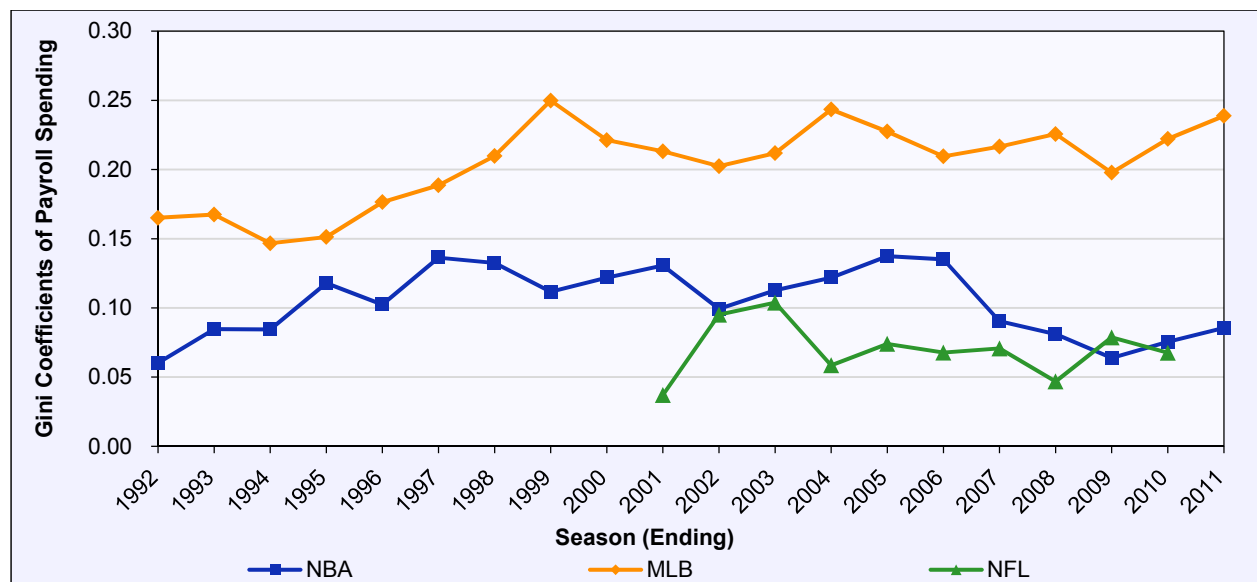
a. Dependent Variable: Gate_Receipts_Infl_Adj

Pay Dispersion

Having established the NBA's relative low competitive balance among the professional sports leagues and its insignificance with regard to consumer demand, the next section of analysis is whether there is dispersion in payroll spend among NBA teams. Unlike the RSD measure for inequality in wins, the proper measure of spending inequality between teams in a season is the Gini coefficient of payroll spending. This metric shows that there is indeed some level of pay dispersion between NBA teams. However, this disparity in total salary expenditures is low, especially relative to U.S. income inequality. The NBA's average Gini coefficient of payroll spending over the last decade is only 0.100, which falls in between the values for MLB (0.220) and the NFL (0.074) during the same period.

The difference between the average Gini coefficient of total player salary expenditures among the NBA, the NFL, and MLB is likely the result of each league’s specific policy measures in their respective collective bargaining agreement. Most notably, the NFL employs a hard salary cap system, in which teams are restricted from spending above the limit. Since nearly all of its franchises are considerably profitable due to high consumer demand and lucrative national media rights contracts, even profit-maximizing owners have an incentive to spend until they reach this cap level. As such, there is little dispersion in payroll spend in the NFL. In stark contrast, the MLB has no salary cap system. Instead, it allows teams to expend as much money on player salaries as they like. While baseball instituted the luxury tax in 2003 to discourage this disparity, large market, high-revenue teams are still more willing to spend more. As such, the absence of a salary cap in MLB explains its relatively high pay dispersion.

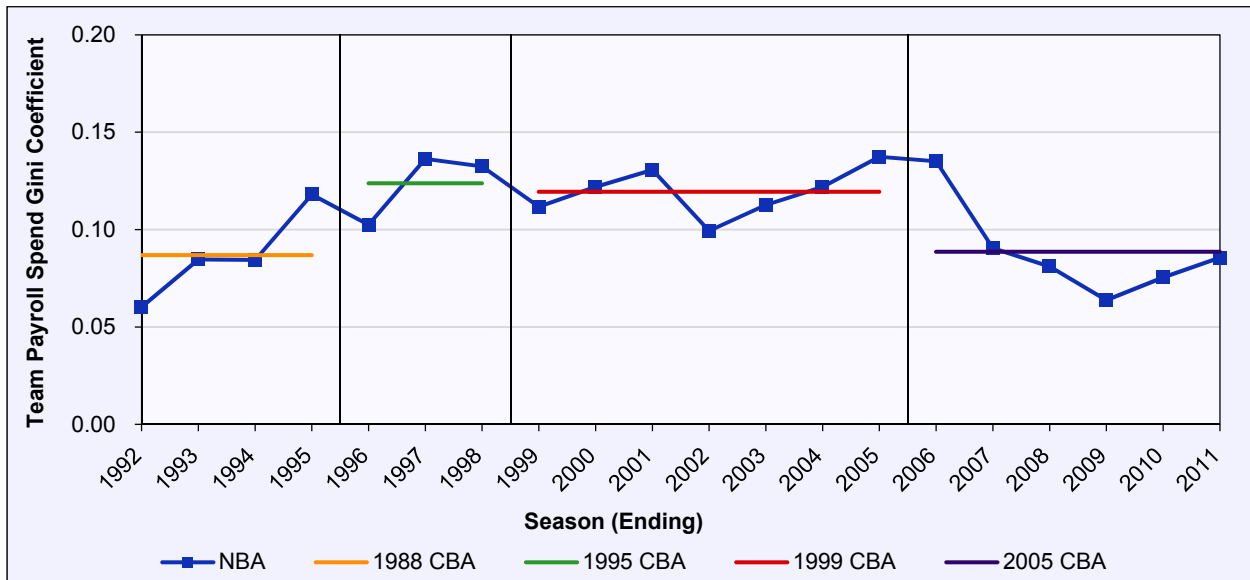
Figure 5: NAPSL Pay Dispersion (Gini Coefficient) 1992 to 2011



Since the NBA employs somewhat of a hybrid of these two policies through its soft cap system, in which teams can use salary cap exceptions to exceed the payroll limit under certain circumstances, its Gini coefficient of payroll spending relative to the other sports leagues seems appropriate. This soft cap allows franchises the ability to spend grossly above the league’s salary cap if they choose to do so. These high-spending franchises generally have win-maximizing owners. As such, the NBA’s pay disparity is the product of the outlier spenders. Since most teams spend above the cap (83.2% over the last ten years), it is reasonable to assume that if the NBA adopted a hard cap, pay dispersion would decrease considerably. Most teams would spend until they reach the cap level. Therefore, if the NBA intends limit its payroll disparity, it should adopt the NFL’s hard salary cap system as a model.

While the previous time series representation of the NBA’s Gini coefficient of spending indicated that the league has historically operated with some level of dispersion, especially relative to the NFL, it does not explain the influence that various policy measures may have had on payroll disparity. Additional analysis is necessary to determine whether the various CBA revisions, and their associated policy changes, have affected the dispersion of total player salary expenditures among teams. Figure 6 indicates that this payroll dispersion generally increased from 1992 to 2005. As such, the 1995 and 1999 CBA seem to be particularly ineffective in decreasing pay dispersion between teams.

Figure 6: NBA Pay Dispersion (Gini Coefficient) 1992 to 2011



From this time series analysis, only the 2005 CBA that introduced a stricter luxury tax and decreased overall player salaries, seems to have measurably decreased the league’s payroll disparity among its thirty franchises. As such, while the policy changes made in the 2005 CBA did not influence competitive balance at a statistically significant level, they had a material influence on the NBA’s pay dispersion, as measured by the annual Gini coefficient of payroll spending. This conclusion indicates that the luxury tax most likely had a favorable impact in discouraging excessive payroll spending far above the salary cap. However, it is impossible to determine whether this was the goal of the luxury tax or simply a side effect of the owners’ conscious attempt to reduce player salaries overall.

While this time series representation only suggests the relative impact that certain revisions to the CBA may have had on payroll disparity in the NBA, regression analysis is perhaps more telling. Only the 2005 CBA dummy variable had a statistically significant impact in reducing the Gini coefficient of payroll spending. Even then, the correlation is low. Overall, this result indicates that the NBA historically has been unsuccessful in its alleged effort to close the dispersion in total player salary expenditures between teams. Furthermore, it shows how increased exceptions made the NBA soft salary cap even more ineffective. While the luxury tax seemed to have slightly reduced excessive spending, as long as the NBA employs a soft cap system, there will be pay dispersion in the league.

Table 6: Intervention Analysis of Payroll Disparity Time Series 1992 to 2011

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.573 ^a	.328	.249	.021587	1.252

a. Predictors: (Constant), CBA_2005, Time

b. Dependent Variable: Gini_Payroll

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.004	2	.002	4.152	.034 ^a
	Residual	.008	17	.000		
	Total	.012	19			

a. Predictors: (Constant), CBA_2005, Time

b. Dependent Variable: Gini_Payroll

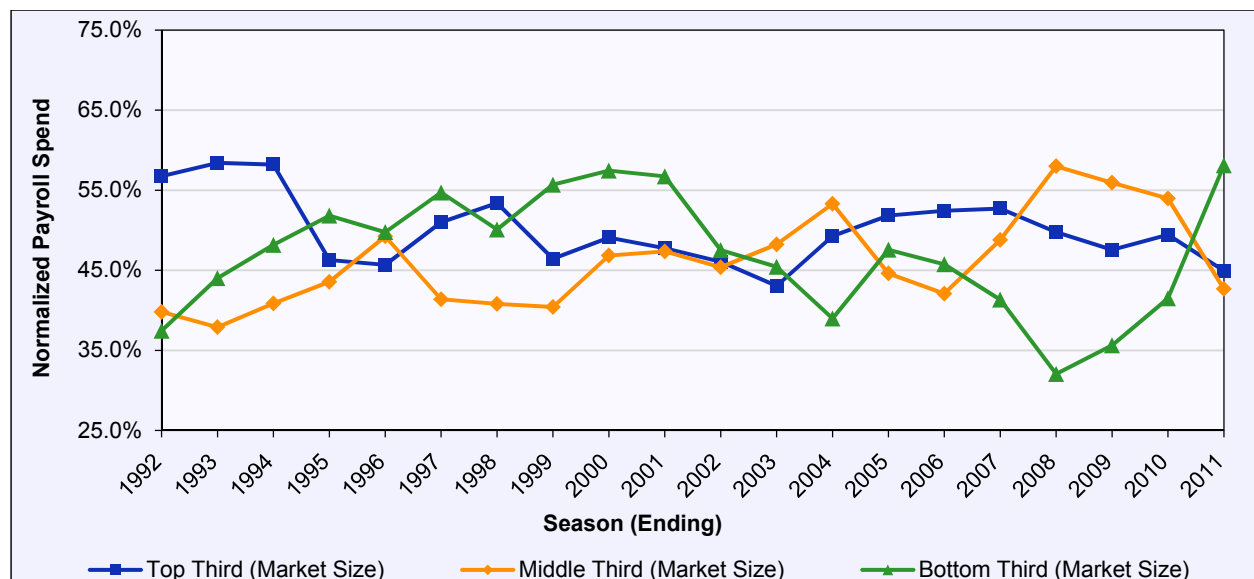
Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.091	.012		7.670	.000
	Time	.003	.001	.636	1.941	.069
	CBA_2005	-.049	.017	-.929	-2.835	.011

a. Dependent Variable: Gini_Payroll

The existence of pay dispersion among NBA teams over the past twenty seasons suggests a possible relationship between a team's total player salary expenditures and its annual revenue or its market size. This analysis may point towards several conclusions that may aid in the understanding of the positions taken by league owners during the 2011 CBA negotiations. For instance, the relationship between market size and normalized payroll spend may explain why small-market teams adamantly supported a hard salary cap system during the course of the negotiations. Likewise, the relationship between revenue and normalized payroll may explain why high-revenue teams seem more willing to spend excessively above the salary cap. These relationships are visible in a time series of normalized payroll for teams, ranked into either market size (Figure 7) or revenue (Figure 8) categories.

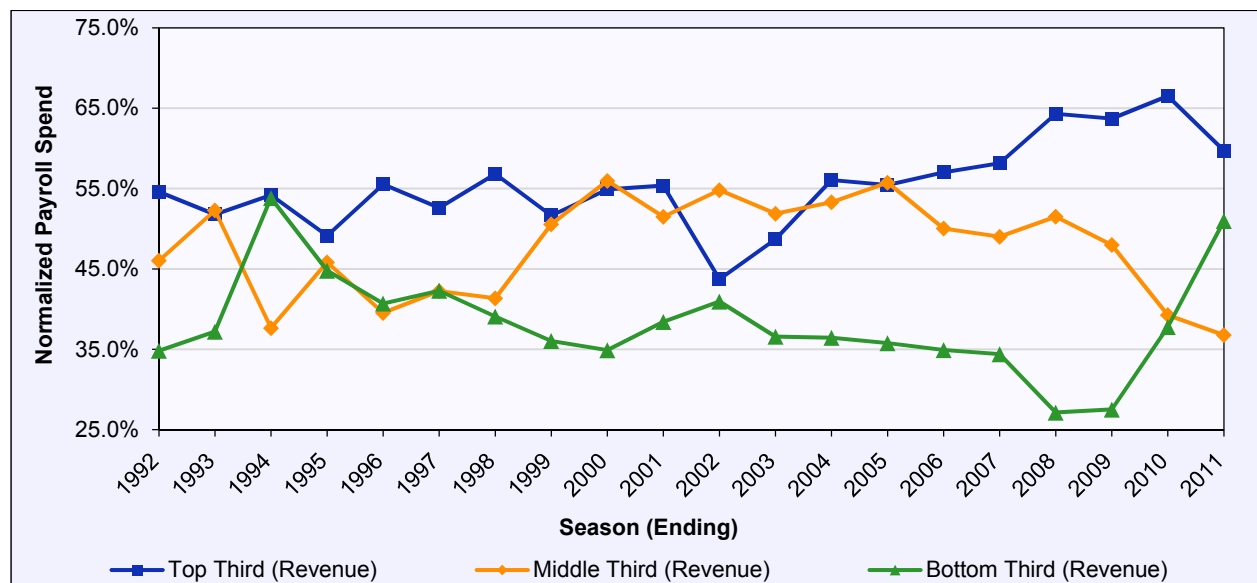
Figure 7: NBA Pay Dispersion by Market Size Classification 1992 to 2011



These time series charts seem to indicate a discernible relationship between payroll spend and revenue, but not market size. In the first time series, the top ten teams, in terms of population within a forty-mile radius of the home arena, do not appear to spend more than other teams. Interestingly, in some years, the bottom third of teams by market size have significantly higher player salary expenditures. This phenomenon is likely the result of the NBA's salary cap, which discourages excessive payroll spending by teams, to some degree. As such, it is more likely for small-market teams to have higher payroll than large-market teams in the NBA than it would be in MLB. Furthermore, outlier small-market teams, like the San Antonio Spurs and the Orlando Magic, have generally been willing to spend more, given their on-court success, in an effort to retain star players. Overall, there does not appear to be a significant relationship between team payroll spend and its market size.

Revenue classification; however, does appear to have some type of correlation with player salary expenditures. In the time series of the normalized payroll spend of teams, grouped into thirds by their average contribution to league revenue, there is noticeable pay dispersion between each revenue groupings. This analysis suggests that high-revenue, not large-market, teams spend more on player salaries on average. Teams may try to justify additional, even excessive spending on the idea that it will likely result in more wins, and therefore more revenue. At the very least, this time series shows that owners of NBA teams are not generally concerned with reducing the pay dispersion in the NBA, since it has increased over time despite the introduction of various policy measures. Rather, they seem more motivated by decrease player salaries uniformly.

Figure 8: NBA Pay Dispersion by Revenue Classification 1992 to 2011



Regression analysis tests the relationship between team revenue and its payroll spend in a particular season more empirically. In the statistically significant linear regression model, team revenue, as measured by the percent of total revenue, explains about 25% of the variance in total payroll spend over the past twenty seasons. This result shows that high-revenue teams are more likely to spend more on player salaries than low-revenue teams. Since these teams have greater resources, they can justify spending more in order to acquire a disproportionate level of talent. Owners of these teams are often win-maximizers. By paying players at their average revenue product, they have decreased the

league's monopsony power. As such, one interpretation of the hardline stance taken by owners in the 2011 lockout was a collusive effort to regain their monopsony power during this sportsmen era.

Figure 9: Regression of Team Payroll Spend to Team Revenue 1999 to 2011

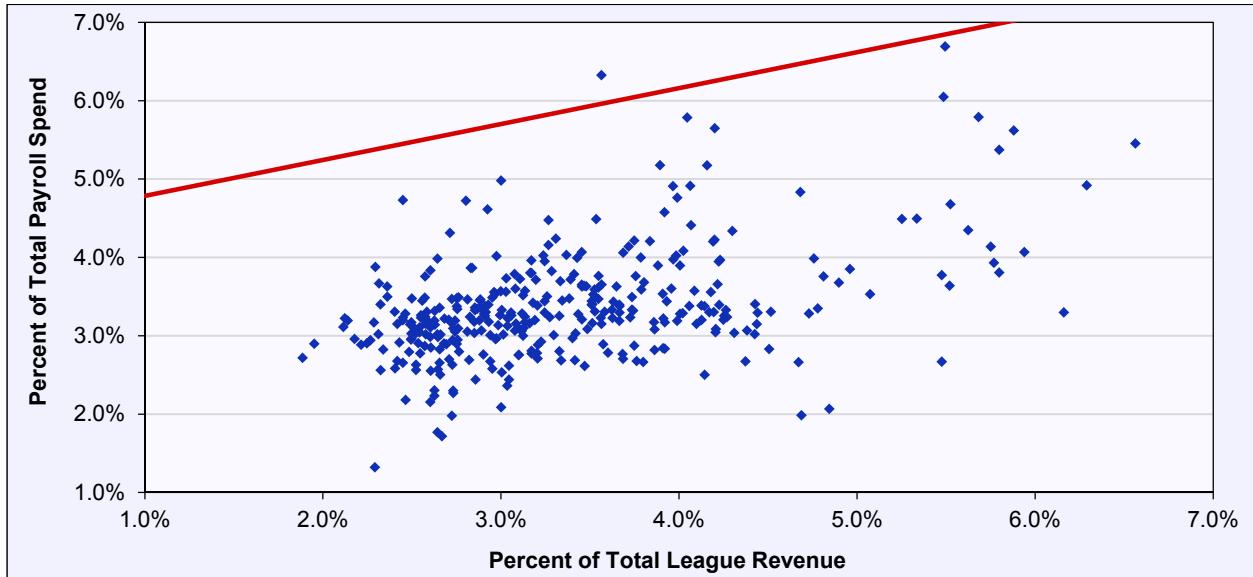


Table 7: Regression of Team Payroll Spend to Team Revenue 1999 to 2011

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.501 ^a	.251	.249	.006209	1.986

a. Predictors: (Constant), Percent_Total_Revenue

b. Dependent Variable: Percent_Total_Pay

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	.005	1	.005	118.209	.000 ^a
1	Residual	.014	353	.000		
	Total	.018	354			

a. Predictors: (Constant), Percent_Total_Revenue

b. Dependent Variable: Percent_Total_Pay

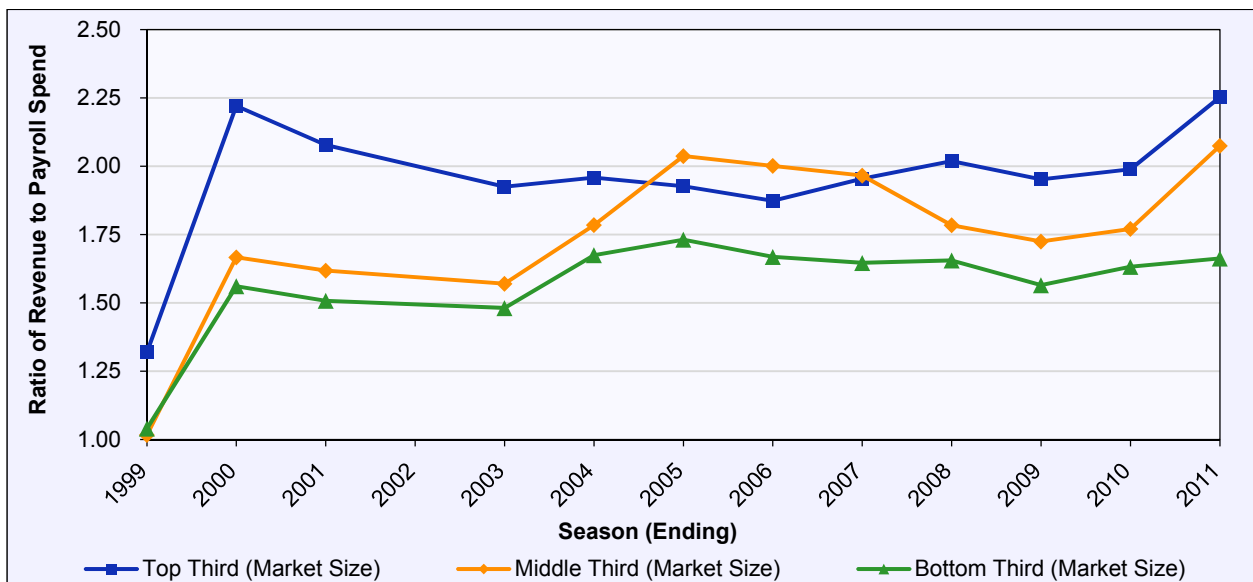
Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.020	.001		15.387	.000
	Percent_Total_Revenue	.406	.037	.501	10.872	.000

a. Dependent Variable: Percent_Total_Pay

The regression analysis suggested that win-maximizing owners, in an effort to acquire more talent and field a more competitive team, justify their excessive payroll spend due to their greater resources. However, they also have a financial incentive to spend more. In the time series representation of the ratio of team revenue to its payroll, sorted by market size, it is clear that large-market teams have a financial interest in spending more on salary expenditures. For each additional dollar of payroll spend, they earn about two dollars in total team revenue. Player salaries are not exceptionally high, since all teams still derive incremental revenue from additional payroll expenditures. While this does not suggest causation since other factors likely influence revenue, it shows that while seemingly excessive spending may not necessarily lead to more wins, it does seem to result in additional revenue. In fact, large-market teams, on average, spend more efficiently than small-market teams.

Figure 10: NBA Profit Maximization by Market Size Classification 1992 to 2011



The empirical analysis on the NBA’s pay dispersion produces several key implications. First because of the soft cap, the NBA has some level of inequality of team payroll relative to the NFL. Second, other than the policy measures introduced in the 2005 CBA, the NBA has historically been unable to reduce this payroll disparity despite its several professed attempts to do so. Third, high-revenue, not large-market, teams are more willing to spend more on player salary expenditures. They have the resources to justify excessive spending, since incremental spending leads to higher revenue. Overall, both win and profit-maximizing owners have incentive to spend more on salaries, perpetuating this pay dispersion. A hard cap would reduce this disparity, but it is not yet clear if spending equality is optimal and whether there is a relationship between payroll spending and winning percentage.

Team Performance

After establishing the possible explanations and implications of the NBA’s relative pay dispersion among its teams, the next section of the empirical analysis turns to the team performance model. This analysis will indicate whether certain factors influence a team’s on-court performance. As such, the results could provide insight into the relevance of the economic rhetoric used by the league and the

hardline faction of small-market owners during the most recent 2011 lockout and the associated CBA negotiations. The intended goal of this model is twofold. First, regression analysis will show whether there is correlation between salary expenditures, on a relative basis and winning percentage. In short, do high-spending teams win more? Next, the analysis will examine whether high-revenue teams win more. If these tests indicate that a marginal increase in player salaries do not add wins at a significant level, it will show that reckless spending is not in the best interest for teams.

In the regression of winning percentage against percent of total payroll spend over the past twenty seasons, a statistically significant relationship emerges, indicating a positive trend. This suggests that as payroll increases, teams win more. However, the correlation between the two variables is minimal, as the percent of total payroll spend only explains 10.2% of the variance in winning percentage, which indicates a relatively weak relationship. Therefore, it is difficult to draw any meaningful conclusions. There are several possible explanations for this low correlation. For one, the dataset includes many outliers, wherein some teams spend excessively without much returns in terms of incremental wins and some teams spend frugally, but win frequently. Furthermore, it is unlikely that all player salaries are efficiently priced by the NBA market. Most notably, some players under rookie scale contracts and maximum contracts are likely to outperform their contract. Therefore, a frugal team that has many productive, young players may have a high winning percentage, which distorts the correlation.

Figure 11: Regression of Team Winning Percentage against Payroll Spend 1992 to 2011

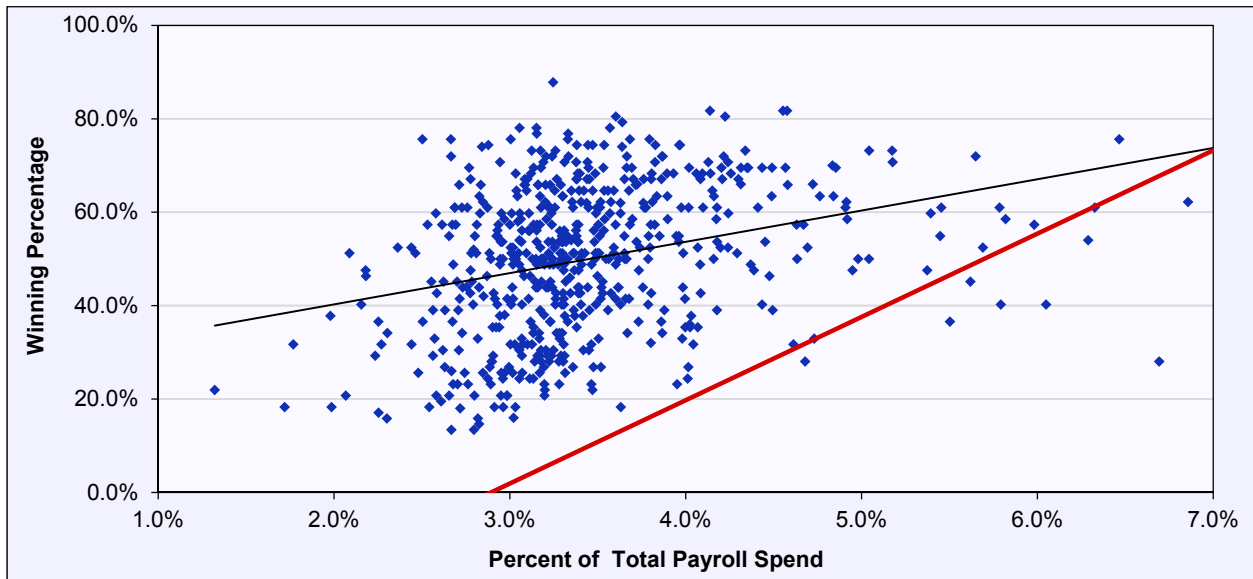


Table 8: Regression of Team Winning Percentage against Payroll Spend 1992 to 2011

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.319 ^a	.102	.100	.1494669	2.107

a. Predictors: (Constant), Percent_Total_Pay

b. Dependent Variable: Win_Percent

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.465	1	1.465	65.569	.000 ^a
	Residual	12.890	577	.022		
	Total	14.355	578			

a. Predictors: (Constant), Percent_Total_Pay

b. Dependent Variable: Win_Percent

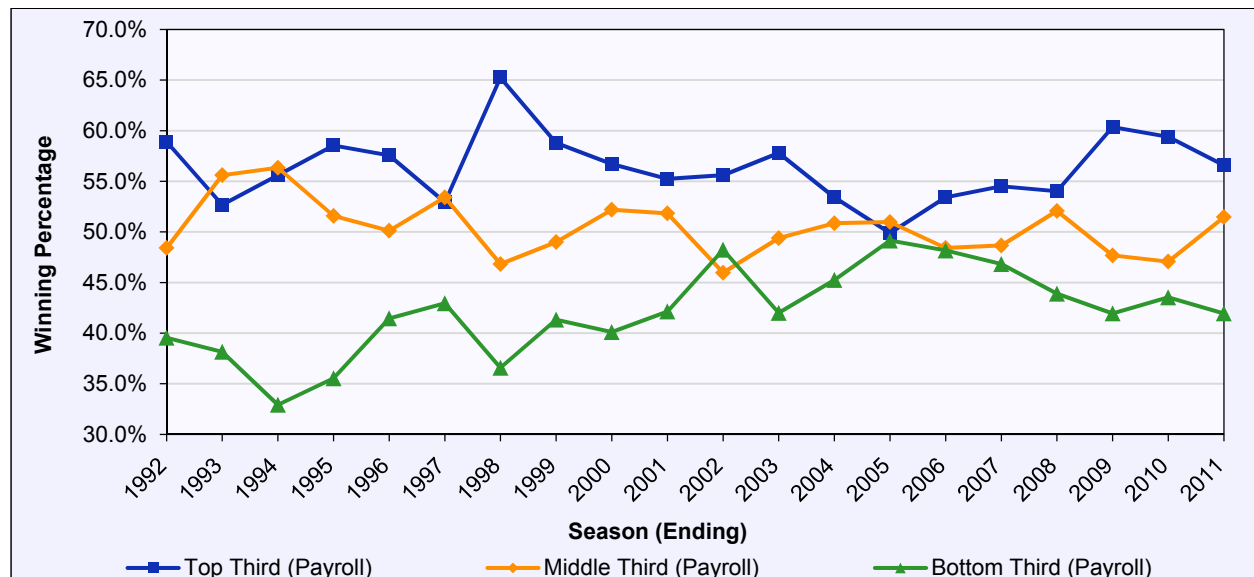
Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.269	.029		9.182	.000
	Percent_Total_Pay	6.700	.827	.319	8.097	.000

a. Dependent Variable: Win_Percent

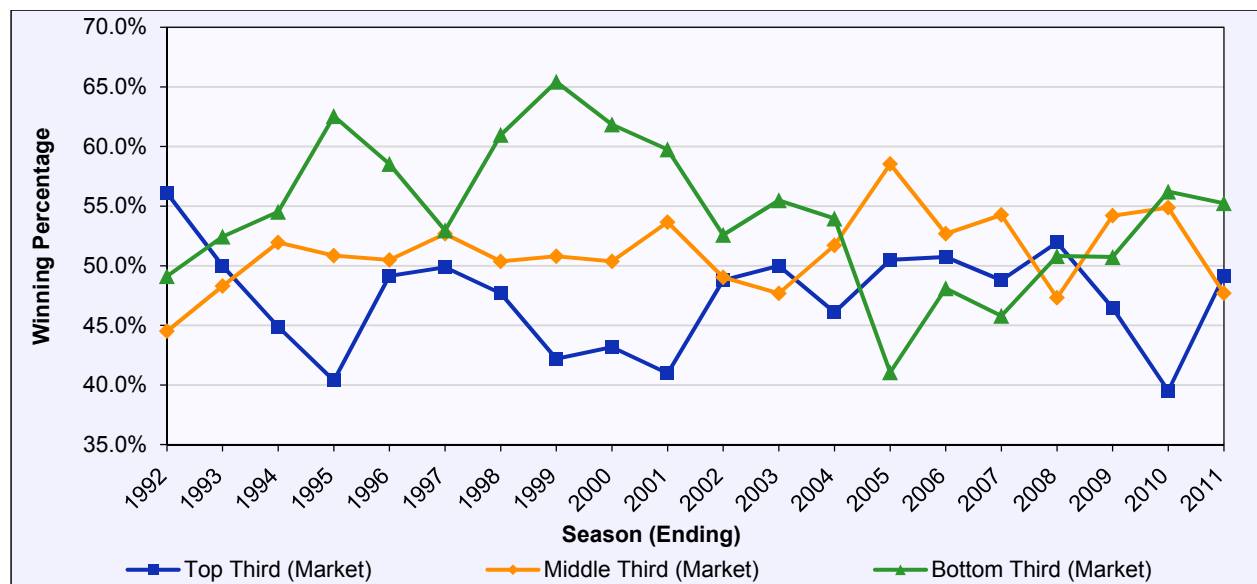
While it is clear that there is a significant relationship between a team’s total payroll spend and its associated winning percentage, the correlation is low, suggesting that additional salary expenditures will only minimally improve team performance. For example, in the 2010-2011 season, the average payroll was \$67.12 million. If a team spent 25% in excess of this average on player salaries, or \$16.78 million, for a total payroll of \$83.91 million, according to this linear regression model, they would only win about 4.6 additional games, on average. This suggests that the other explanatory factors affecting win percentage are ultimately more important. From a profit-maximizing standpoint, this extra spending could produce incremental revenue (Figure 11). However, in terms of win-maximization, there is little meaningful impact. Furthermore, while high-revenue teams undoubtedly spend more, small-market teams can still be successful, as long as they spend more efficiently by drafting well.

Figure 12: NBA Winning Percentage by Payroll Spend Classification 1992 to 2011



Visually, the relationship between team payroll spend and winning percentage is most apparent in the time series representation in Figure 12. For most seasons, it is clear that high spending teams have generally been more successful, all other things equal. Likewise, low spending teams, especially in the 1990s, have typically had poor regular season performance. On a more intuitive basis, the top third of all teams in total player salary expenditures, in a given season, have averaged 11.7 more wins than the bottom third. However, as the regression analysis indicates, it is imprudent to attribute this win dispersion entirely to differences in spending. The low correlation shows that it is still very much possible for low-spending teams to succeed in the NBA. Again, the most appropriate explanatory variables that influence winning is not how much a team spends, but rather how well they spend it.

Figure 13: NBA Winning Percentage by Market Size Classification 1992 to 2011



A team's relative market size does not seem to have any meaningful correlation with its winning percentage. In the time series analysis in Figure 13, after sorting franchises into thirds based on their market size, as measured by the population within a forty-mile radius of their home arena, it is clear that large-market teams do not seem to win any more than small-market teams. On average, large-market teams outperformed their competition in only two seasons: 1992 and 2008. These results are likely caused, in some part, by outlier teams, such as the large-market, but low-performing Los Angeles Clippers or the small-market, but high-performing San Antonio Spurs. However, these results indicate that it is possible for small-market owners to assemble high-performing and high-revenue teams. As such, these franchises are not at an inherent competitive disadvantage. Rather, their owners' statement that the NBA's financial system is broken is overstated, at the very best.

Overall, the results from this team performance section align with conclusions in previous areas of the empirical analysis. Specifically, the league's argument that small-market teams are at a competitive disadvantage due to their relative lack of resources is insufficient, if not completely dishonest. The results of the team performance model show otherwise. In the regression of team winning percentage against its total player salary expenditures, the correlation, while statistically significant, was rather low. As such, payroll spend is a poor explanatory variable in the variance of observations in winning

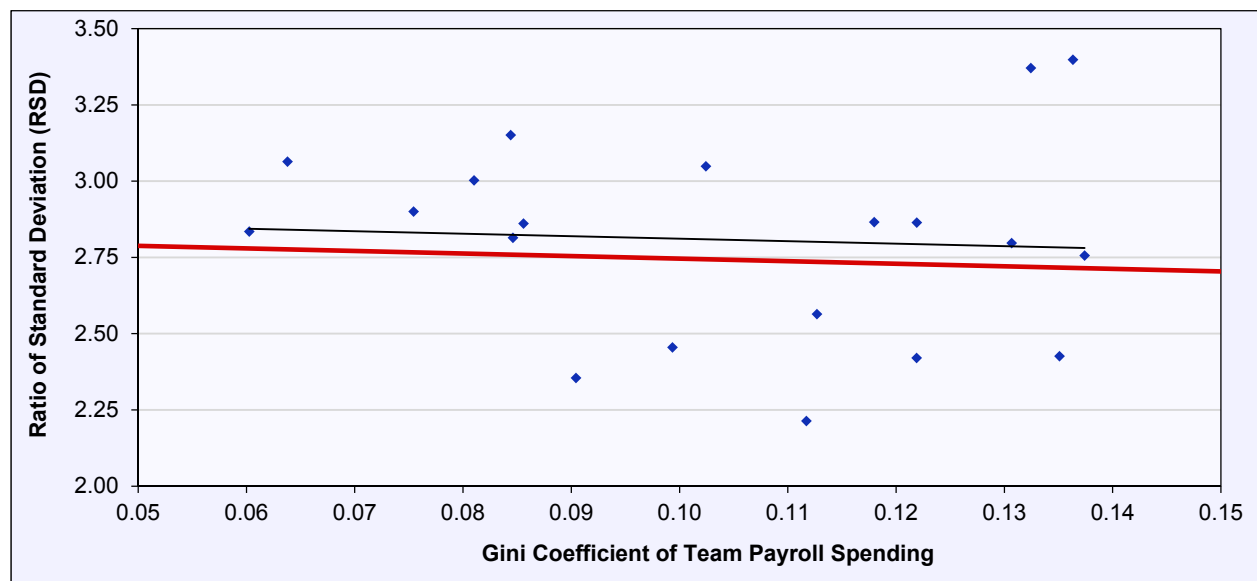
percentage among all teams in the last twenty years. Efficient spending, coaching ability, and health are very likely more important in influencing a team's on-court performance.

While high-spending teams do win more according to the time series in Figure 12, the regression analysis shows that there is little causation. Finally, there seemingly appears to be no measureable relationship between market size and winning percentage in the time series of Figure 13. Therefore, small-market franchises are not at a significant disadvantage. Since the labor market for players is inefficient, shrewd general managers can produce consistently competitive teams, regardless of the team's financial resources or the consumer demand in their particular market. The acquisition of undervalued players, on either rookie salary scale or maximum salary contracts, is perhaps the most effective way for teams to increase their on-court performance without having to resort to reckless spending. As such, it is careless to assume that low-spending teams cannot compete, since winning percentage matters more about the effectiveness of a team's personnel, not its total salary.

The Soft Cap Salary System

The overall hypothesis of this thesis is that the NBA's soft salary cap, and the subsequent payroll disparity that it produced, has enabled the existence of rampant competitive imbalance, relative to other professional sports leagues. This supposed relationship between excessive spending on player salaries and suboptimal parity is the essential argument for increased subsidization devices among the league's hardline faction of owners. They presented their favored policy measures, including less allocation of BRI to players, a hard cap, and salary rollbacks, to the NBPA in the guise of improving the NBA's competitive balance, and therefore increasing consumer demand. However, as previous analysis has indicated, not only has NBA's competitive balance problem persisted despite previous attempts to subdue it, fans do not seem to care about parity. Moreover, even though pay dispersion exists in the NBA, player salaries minimally influence winning percentage. Overall, these findings indicate that the economics behind the league's argument are severely flawed, at the very least.

Figure 14: Regression of NBA Annual RSD to Gini Coefficient 1992 to 2011



In the regression of the NBA's annual competitive balance, as measured by its RSD, against its pay dispersion, as measured by the Gini coefficient of team payroll spending, no statistically significant relationship emerged. While more observations, beyond the twenty seasons, may have produced slightly different results, it does not appear that the NBA's relative pay dispersion among its teams has any sort of relationship with its current competitive balance. Therefore, the various policy measures proposed by the owners during the course of the lockout negotiations, in an effort to close this spending disparity and consequently reduce player salaries, would not have improved the NBA's competitive balance. This analysis is important, as it refutes the league's argument that a decrease in player salaries would improve balance and save small-market franchises. Rather, it suggests that the owners had other, ulterior motives in mind when they made unwavering demands for these polices.

Table 9: Regression of NBA Balance (RSD) to Pay Dispersion (Gini Coefficient) 1992 to 2011

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.066 ^a	.004	-.051	.333042	1.513

a. Predictors: (Constant), Gini_Payroll

b. Dependent Variable: RSD_Current

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	.009	1	.009	.080	.781 ^a
1	Residual	1.997	18	.111		
	Total	2.005	19			

a. Predictors: (Constant), Gini_Payroll

b. Dependent Variable: RSD_Current

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.898	.328		8.833	.000
	Gini_Payroll	-.867	3.067	-.066	-.283	.781

a. Dependent Variable: RSD_Current

Overall, the empirical analysis does not confirm any of the five hypotheses of this thesis. Relative to other professional sports leagues, the NBA has low competitive balance, despite the many professed attempts at improving league parity. Furthermore, fans do not seem to prefer competitive balance at a statistically significant level. Third, while pay dispersion exists in the NBA, only high-revenue spend more and the correlation is low. However, according to the team performance model, they do not seem to take a disproportionate level of talent, as the correlation between relative payroll spend and winning percentage is minimal. Ultimately, regression analysis indicates that the NBA's pay dispersion does not explain its competitive imbalance. As such, the owners' argument that lower salary expenditures would increase competitive balance and consumer demand is unsubstantiated.

DISCUSSION

Misleading Economics

Each component of the empirical analysis seems to reach the same conclusion. During the lockout, the NBA and its owners used misguided, if not fraudulent, arguments for more severe policy measures to seemingly repair the league's current competitive balance and payroll disparity problems. Led by a faction of small-market owners, the NBA deceptively misled the players union during the 2011 CBA negotiations and framed their argument in populist terms in a measured effort to garner public support. What they claimed was a necessary solution to remedy the league's broken economic structure and to save unsuccessful small-market franchises from financial ruin was nothing more than a deliberate and collusive attempt to redistribute income from players to owners.

During the course of the 2011 CBA negotiations, the NBA and its owners inflated the importance of competitive balance to such an extent that they blamed the NBA's seeming lack of balance as the cause for the league's financial troubles. In a feigning attempt to improve league parity and limit pay dispersion, the owners prescribed several policy measures, which they claimed would ultimately improve the financial health of the NBA. However, as previous literature indicates, these provisions do not seem to have much theoretical relevance towards improving the league's competitive balance. This suggests that there were ulterior financial motives behind the owners' argument against the soft salary cap. Their stated desire for competitive balance concealed their true intention for profit.

Furthermore, the league has historically been unable to influence competitive balance. Over the past twenty seasons, the NBA has suffered from competitive imbalance relative to the other NAPSLs. After three revisions to the CBA during this period, in 1995, 1999, and 2005, the NBA still has not markedly improved league parity. As the empirical analysis specifies, each CBA revision had a statistically insignificant influence on the RSD measure of competitive balance. As such, the economic structure of the league does not seem to explain the existence of high imbalance in the NBA. Therefore, the owners' attempts to improve league parity strictly through various economic policies were ultimately futile. Rather, this imbalance may be inherent within professional basketball, relative to other sports leagues. This conclusion suggests that other factors are in play.

The idea that the NBA's relative competitive imbalance may be an established fact of professional basketball aligns with the findings of Berri et al. (2005). The NBA's natural level of competitive balance may indeed be a function of the scarcity of individuals within its talent pool. The saying 'you can't teach height' rings true according to Berri. Since most of the male population is genetically ineligible from joining the NBA's labor force, there is undoubtedly greater variation in playing skill among the individuals tall enough to play in the league. As such, competitive balance ensues, especially given the relative revenue and pay dispersion in the league. Therefore, the various policy measures suggested by the owners during the course of the labor talks were futile, in terms of improving parity. This suggests the owners intended them to improve profitability, not balance.

Additionally, in the consumer demand model of the empirical analysis, no statistically significant relationship between fan interest and competitive balance emerges. Therefore, contrary to the repeated claims by the owners during the lockout, the league, as a whole, does not suffer financially from its relatively high competitive imbalance. As Zimbalist (2003) argued, sports fans seem to prefer

league-wide imbalance, especially if this winning percentage disparity favors dynasty teams in large-markets. Moreover, as Vrooman (2009) indicated, the league seems to desire imbalance, as it allows them to increase their monopoly power over national media rights contracts and maximize league revenue. Therefore, not only was the league and its owners intentionally misleading in their professed desire for increased competitive balance between teams, they generally seem to prefer imbalance, as it is ultimately more profitable for the NBA, especially with its limited revenue sharing program.

Ultimately, only two variables seem to influence consumer demand in the NBA. As Berri, Schmidt, and Brook (2004) first suggested, star power seems to be more suited as an explanatory variable for relative changes in fan interest than the league's level of competitive balance. This result seems to confirm the idea that the league adopted imbalance as a part of its dynasty strategy to maximize revenue from media rights. Second, winning percentage is statistically significant in the regression of consumer demand. Therefore, fans do not necessarily care about a team's market size or its revenue in making their consumption decisions. Rather, on-court performance is much more influential. As such, small-market franchises can prosper in the NBA if they take steps to improve their on-court performance. They are not an inherent disadvantage and the league's financial system is not broken. Rather, the most important factors seem to be drafting ability and shrewd player management.

The pay dispersion analysis invalidates the league's argument further. Specifically, the conclusions of the various regression models and time series charts in this section indicate that the league is mistaken in their contention that the soft salary cap has resulted in rampant payroll disparity between large-market and small-market teams. While the NBA does indeed have some level of pay dispersion among its 30 teams, it is low relative to the MLB's disparity, as measured by the Gini coefficient of team payroll. As such, while the soft salary cap system does not result in complete payroll equality for all teams, it more or less is successful in the tradeoff between pay dispersion and the retention of talent by low-revenue franchises. Therefore, the league's demand for a hard cap, like the NFL, is simply unnecessary. This policy measure would decrease pay dispersion, but would also facilitate a greater transfer of talent to large-market teams in desirable cities and decrease salaries.

Furthermore, additional policy measures seemingly designed to close the NBA's pay dispersion may also be futile. The NBA has only had limited historical success in affecting the payroll disparity between its teams. Regression analysis indicated that only the 2005 CBA and the introduction of a robust luxury tax was able to decrease pay dispersion in the following years. Therefore, the other provisions suggested by the owners during the course of the 2011 CBA negotiations, such as salary rollbacks and less allocation of BRI towards the players, would not change the pay dispersion between teams. Rather, they would uniformly decrease salaries for all teams. Therefore, the owners' professed goal of reducing pay dispersion, like its purported desire of increasing competitive balance, is baseless. Again, their intention was to maximize profits by transferring wealth from the players for all teams, uniformly. By cutting costs across the board, pay dispersion would not improve.

Despite the league's claims that large-market teams spend more than small-market teams, putting the latter at a fundamental talent disadvantage, there is no meaningful relationship between team market size and its payroll. Teams in small-markets, like the Orlando Magic and the San Antonio Spurs, are just as likely to spend more money on player salaries than large-market franchises. As such, it is again careless for the league to assume that small-market teams are at a disadvantage. For example, market size does not indicate whether a team's owner is a sportsman, whose goal is to maximize wins, not

profits. Therefore, the faction of small-market owners that dominated the discussion was deluded in their assertion that team payroll is a function of market size. Finally, while revenue does explain some of the variance in payroll, the correlation is minimal. On balance, the soft cap system seems to have effectively encouraged payroll equality regardless of team market size or annual revenue.

Fourth, in the team performance model, the NBA's argument again fails to stand up to the scrutiny of empirical analysis. One essential framework behind the league's negotiating stance during the 2011 CBA talks was the idea that since small-market teams supposedly spent less money on player salaries, their allocation of overall talent was significantly lower. As such, their on-court performance suffered. The results of this thesis' empirical analysis contradict this argument on several levels. For one, small-market teams do not seem to spend any less on salary expenditures, on average. Second, according to the team performance model, there is no meaningful relationship between winning percentage and market size. Finally, the relationship between market size and wins does not exist.

More specifically, with regard to the team performance analysis, team payroll spend only minimally explains variations in winning percentage. While the relationship between the two variables is statistically significant for teams during the last twenty years, the adjusted r-square value (0.100) indicates that this relationship might as well be non-existent. While high-spending teams certainly win more, on average, the low causation effectively makes this conclusion statistically irrelevant. Moreover, market size appears to have no relationship with winning percentage. For example, from 1993 to 2004, small-market teams won significantly more games, on average, than teams from middle and larger-markets. As such, it does not appear that, from strictly a team performance standpoint, small-market franchises face an inherent disadvantage due to the NBA's relative pay dispersion.

Finally, in the regression of the competitive balance against pay dispersion, it becomes apparent that the league's argument is not only unsubstantiated, but also clearly deceptive. This regression shows that there is absolutely no relationship between balance, as measured by RSD, and payroll disparity, as measured by the Gini coefficient of payroll spending. Therefore, the league's position during the 2011 CBA talks is corrupt on two fronts. Not only is the pursuit for competitive balance misleading and ultimately impossible through the economic measures at the league's disposal, the NBA has historically been unable to reduce pay dispersion among teams, absent severe policy changes. Therefore, the league's twin goals of improving balance and encouraging payroll equality between teams were insincere. Policy measures cannot significantly affect pay dispersion, let alone balance. Overall, this result validates the existence of the effectiveness of the soft cap system.

Ultimately, the transfer of wealth is the most appropriate framework for understanding the league's underlying objective during the lockout negotiations. The key driver behind the league's inordinate demands was not a desire to improve the league's competitive balance and reduce pay dispersion among teams. Rather, according to this framework, the owners conspired to decrease player salaries uniformly, in an effort to cut costs and maximize profits. Likewise, by citing the NBA lingering competitive imbalance and pay dispersion as the basis for the league's financial distress, the owners wrongly assumed that balance and payroll spend had a meaningful impact on consumer demand. They were eventually successful. Even in an apparent compromise, the players accepted provisions that will cost them \$300 million per year. Overall, in every empirical test of the league's argument, the results show the utter untenability of the owners' phony economics during the 2011 NBA lockout.

Profitability and NBA Ownership

Given the NBA and its owners' stated goal of guaranteeing not only profitability, but also a return on investment, for owners during the course of the 2011 CBA negotiations, it is also necessary to evaluate the relationship between profitability and ownership in professional sports leagues on a qualitative level. The NBA's claim that 22 of 30 teams lost money this past season, while likely inaccurate, is in some part insignificant. While operating profit is important, professional sports leagues do not function with the constraints of normal companies. Its business model is markedly different, as these franchises often increase in value despite years of consecutive losses. On a financial level, asset appreciation for most franchises generally makes up for poor operating performance. Craig Leopold, owner of the NHL's Minnesota Wild suggested that with sports teams, "the value of the asset is getting larger and larger even though your losses may continue. That is not a normal business model."¹

Even in the years immediately succeeding the economic downturn, franchise valuations were at unprecedented levels. For example, in April 2011, Tom Gores purchased the Detroit Pistons for \$420 million or about 16.7% above its estimated \$360 million *Forbes* valuation.² Moreover, Joe Lacob purchased the Golden State Warriors for \$450 million, which represents a 42.8% premium above its \$315 million valuation.³ Despite the faltering economy and the subsequent decrease in attendance and consumer demand, these franchises still commanded high sale prices. While previous owners still gained significant asset appreciation from the sale, the fact that there were buyers willing to purchase these franchises at this valuation indicates that the motivations behind ownership are not limited to financial gain. In fact, the other factors that influence the decision to purchase a professional sports franchise may ultimately be more significant.

Perhaps the most prominent non-financial reason for sports franchise ownership is the competitive desire to win. Roman Abramovich, the Russian billionaire and the owner of the Chelsea Football Club, described his reasons for ownership when he said, "The goal is to win. It is not about making money. I have many much less risky ways of making money. I do not want to throw my money away, but it is really about having fun and that means success and trophies."⁴ These win-maximizing owners do not view their franchises as investments, but rather as an expensive toy. As such, profitability is not their main concern, as they are often willing to spend a considerable amount of their personal wealth to attain competitive success and the associated prestige that goes along with it.

Under this framework, the league's desire for guaranteed profitability is unjustified. Since, according to Vrooman (2009), many NBA owners are win-maximizing sportsmen, their main concern is competitiveness, not profit. For example, Mark Cuban has historically spent deeply into the red in order to win a championship. Therefore, since some owners are willing to trade profit for an incremental wins, the league's professed goal for profitability among all teams is unfair. Rather, the league should seek overall profitability and use revenue sharing programs to distribute profit in order to make low-revenue teams financially sustainable. In this scenario, players would still ultimately have to transfer at least a portion of their wealth to help the league turn an overall operating profit, but they would not have to subsidize every single team in the NBA.

¹ Rosner and Shropshire, *The Business of Sports*, 5

² Joanne Gerstner, "Detroit Pistons May Be Sold Soon to Gores," *The New York Times*, 11 February 2011

³ Rusty Simmons, "Warriors Sold for \$450 Million; Ellison Loses," *San Francisco Chronicle*, 16 July 2010

⁴ Rosner and Shropshire, *The Business of Sports*, 5

CONCLUSION

Policy Recommendations

While the empirical analysis definitively dismisses the league's argument and reveals their true intentions to decrease player salaries to maximize profit and reassert their monopsony power, it does not yield many direct conclusions about the most optimal economic structure for the NBA going forward. However, by extending the conclusions from the empirical analysis, this thesis can introduce several policy changes that may ultimately help the league improve the financial health of all of its teams and still result in a fair allocation of income towards the league's labor force. That being said, the following conclusions are unscientific, for lack of any relevant data. Therefore, the following section only outlines policy recommendations for the league in their next labor negotiation.

Since it is more likely that the league's competitive balance is a function of the scarcity of the adult male population with the physical height necessary to play professional basketball, it is difficult to prescribe policy changes that will have a meaningful impact in improving the NBA's balance. Historical evidence, prevailing scholarly research, and empirical analysis has indicated that economic policies do not have a significant effect on competitive balance in the NBA. However, one possible solution to improve league-wide parity, even marginally, is the removal of the maximum player salaries from the CBA. This clause restricts the amount teams can spend on individual players, based on the number of years they have played in the league.¹ This clause allows borderline stars, like Rashard Lewis, to receive the same contract as top-tier players, like Kobe Bryant.

In capping their salaries, the league is creating inefficiencies in the labor market. Under this system, the absolute best players in the NBA are often undervalued relative to their on-court contribution and marginal revenue product. It is very likely that the league's top players, relative to their regular season production, deserve nearly one-half of their team's salary cap limit for a particular season. As such, the teams that are lucky enough to acquire and retain these undervalued superstars are at a significant advantage. They can use their remaining cap space to fill out their roster with a strong supporting cast. All other things equal, these teams will perform better than the teams that pay marginal stars the maximum player salary. Next to productive players still on the rookie salary scale, undervalued superstars at the maximum salary are likely the most cost effective players in the league.

By eliminating this clause, the NBA labor market would naturally become more efficient. Under this policy change, these superstar players would command a considerable salary, perhaps even \$30 to \$40 million dollars per year. More importantly, these teams would have to allocate the majority of their cap space to one player. Therefore, their performance would then hinge on their ability to identify and acquire undervalued players to fill in the remainder of the roster. As such, there would likely be far less dynasty teams like the Boston Celtics or Miami Heat, who are able to sign two to three superstars, unless each player voluntarily accepted contracts far below market level. It is reasonable to assume that the elimination of the soft cap system would also reduce the monopsony power of teams, especially for these superstar players. As such, the NBA labor market's efficiency and league-wide competitive balance would increase considerably.

¹ Coon, "Question 16," NBA Salary Cap/Collective Bargaining Agreement FAQ

Next, it is increasingly clear that the NBA should adopt a significant revenue sharing program for income derived from local media rights. Given the prodigious RSN contracts recently signed by the Los Angeles Lakers and the Boston Celtics, media rights are becoming the key driver of league revenue. As such, the modern NBA should make a concerted effort to introduce this form of revenue sharing to subsidize low-revenue franchises, which do not have the fanbase or market size to attain these contracts. Ultimately, the NBA's current financial system is primarily constrained by its lack of any significant revenue sharing. By implementing this program, the NBA could decrease revenue dispersion among all of its teams, which may ultimately improve league competitive balance.

A final policy suggestion for the NBA, given the statistical results and subsequent conclusions derived from the empirical analysis, is a draft subsidization device, in which top performing teams would be required to sell their first-round draft selection to bottom-performing teams at some nominal rate. This transfer of talent would enable bottom-tier teams to improve gradually, so they may earn more revenue, given the positive relationship between winning percentage and consumer demand. Perhaps more importantly, it comes at little financial cost to the top teams forfeiting a low-value draft pick. Moreover, this subsidization mechanism would also improve the league's competitive balance without decreasing player salaries. Therefore, both players and owners would permit the implantation of this suggestion, as it would make each team more competitive, and therefore increase team revenues.

Ultimately, since the players actually provide the largest portion of the NBA product, is financially irresponsible to cut their salaries. Given the scarcity of the NBA labor pool, it is imprudent to claim that players are easily replaceable. Rather, NBA players represent the collection of some of the world's greatest athletes. As such, they should be compensated accordingly, but at a sustainable level that does not put the league's overall financial health at serious risk. Therefore, by adopting these policy measures, the NBA could genuinely achieve its professed goals of improving competitive balance, payroll equality, and the financial well-being of all of its 30 teams.

APPENDIX

Figure 15: Winning Percentage of NBA Teams 1992 to 2011¹

	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01
Atlanta	46.3%	52.4%	69.5%	51.2%	56.1%	68.3%	61.0%	62.0%	34.1%	30.5%
Boston	62.2%	58.5%	39.0%	42.7%	40.2%	18.3%	43.9%	38.0%	42.7%	43.9%
Charlotte	37.8%	53.7%	50.0%	61.0%	50.0%	65.9%	62.2%	52.0%	59.8%	56.1%
Chicago	81.7%	69.5%	67.1%	57.3%	87.8%	84.1%	75.6%	26.0%	20.7%	18.3%
Cleveland	69.5%	65.9%	57.3%	52.4%	57.3%	51.2%	57.3%	44.0%	39.0%	36.6%
Dallas	26.8%	13.4%	15.9%	43.9%	31.7%	29.3%	24.4%	38.0%	48.8%	64.6%
Denver	29.3%	43.9%	51.2%	50.0%	42.7%	25.6%	13.4%	28.0%	42.7%	48.8%
Detroit	58.5%	48.8%	24.4%	34.1%	56.1%	65.9%	45.1%	58.0%	51.2%	39.0%
Golden State	67.1%	41.5%	61.0%	31.7%	43.9%	36.6%	23.2%	42.0%	23.2%	20.7%
Houston	51.2%	67.1%	70.7%	57.3%	58.5%	69.5%	50.0%	62.0%	41.5%	54.9%
Indiana	48.8%	50.0%	57.3%	63.4%	63.4%	47.6%	70.7%	66.0%	68.3%	50.0%
LA Clippers	54.9%	50.0%	32.9%	20.7%	35.4%	43.9%	20.7%	18.0%	18.3%	37.8%
LA Lakers	52.4%	47.6%	40.2%	58.5%	64.6%	68.3%	74.4%	62.0%	81.7%	68.3%
Memphis										
Miami	46.3%	43.9%	51.2%	39.0%	51.2%	74.4%	67.1%	66.0%	63.4%	61.0%
Milwaukee	37.8%	34.1%	24.4%	41.5%	30.5%	40.2%	43.9%	56.0%	51.2%	63.4%
Minnesota	18.3%	23.2%	24.4%	25.6%	31.7%	48.8%	54.9%	50.0%	61.0%	57.3%
New Jersey	48.8%	52.4%	54.9%	36.6%	36.6%	31.7%	52.4%	32.0%	37.8%	31.7%
New Orleans										
New York	62.2%	73.2%	69.5%	67.1%	57.3%	69.5%	52.4%	54.0%	61.0%	58.5%
Oklahoma City										
Orlando	25.6%	50.0%	61.0%	69.5%	73.2%	54.9%	50.0%	66.0%	50.0%	52.4%
Philadelphia	42.7%	31.7%	30.5%	29.3%	22.0%	26.8%	37.8%	56.0%	59.8%	68.3%
Phoenix	64.6%	75.6%	68.3%	72.0%	50.0%	48.8%	68.3%	54.0%	64.6%	62.2%
Portland	69.5%	62.2%	57.3%	53.7%	53.7%	59.8%	56.1%	70.0%	72.0%	61.0%
Sacramento	35.4%	30.5%	34.1%	47.6%	47.6%	41.5%	32.9%	54.0%	53.7%	67.1%
San Antonio	57.3%	59.8%	67.1%	75.6%	72.0%	24.4%	68.3%	74.0%	64.6%	70.7%
Seattle	57.3%	67.1%	76.8%	69.5%	78.0%	69.5%	74.4%	50.0%	54.9%	53.7%
Toronto					25.6%	36.6%	19.5%	46.0%	54.9%	57.3%
Utah	67.1%	57.3%	64.6%	73.2%	67.1%	78.0%	75.6%	74.0%	67.1%	64.6%
Vancouver					18.3%	17.1%	23.2%	16.0%	26.8%	28.0%
Washington	30.5%	26.8%	29.3%	25.6%	47.6%	53.7%	51.2%	36.0%	35.4%	23.2%
Games	82	82	82	82	82	82	82	50	82	82
Average	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%

¹ "NBA Franchise Win Totals," *Sports Reference (USA Today Sports Media Group)*

Figure 15: Winning Percentage of NBA Teams 1992 to 2011 (continued)²

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2000-01
Atlanta	40.2%	42.7%	34.1%	15.9%	31.7%	36.6%	45.1%	57.3%	64.6%	53.7%
Boston	59.8%	53.7%	43.9%	54.9%	40.2%	29.3%	80.5%	75.6%	61.0%	68.3%
Charlotte	53.7%			22.0%	31.7%	40.2%	39.0%	42.7%	53.7%	41.5%
Chicago	25.6%	36.6%	28.0%	57.3%	50.0%	59.8%	40.2%	50.0%	50.0%	75.6%
Cleveland	35.4%	20.7%	42.7%	51.2%	61.0%	61.0%	54.9%	80.5%	74.4%	23.2%
Dallas	69.5%	73.2%	63.4%	70.7%	73.2%	81.7%	62.2%	61.0%	67.1%	69.5%
Denver	32.9%	20.7%	52.4%	59.8%	53.7%	54.9%	61.0%	65.9%	64.6%	61.0%
Detroit	61.0%	61.0%	65.9%	65.9%	78.0%	64.6%	72.0%	47.6%	32.9%	36.6%
Golden State	25.6%	46.3%	45.1%	41.5%	41.5%	51.2%	58.5%	35.4%	31.7%	43.9%
Houston	34.1%	52.4%	54.9%	62.2%	41.5%	63.4%	67.1%	64.6%	51.2%	52.4%
Indiana	51.2%	58.5%	74.4%	53.7%	50.0%	42.7%	43.9%	43.9%	39.0%	45.1%
LA Clippers	47.6%	32.9%	34.1%	45.1%	57.3%	48.8%	28.0%	23.2%	35.4%	39.0%
LA Lakers	70.7%	61.0%	68.3%	41.5%	54.9%	51.2%	69.5%	79.3%	69.5%	69.5%
Memphis	28.0%	34.1%	61.0%	54.9%	59.8%	26.8%	26.8%	29.3%	48.8%	56.1%
Miami	43.9%	30.5%	51.2%	72.0%	63.4%	53.7%	18.3%	52.4%	57.3%	70.7%
Milwaukee	50.0%	51.2%	50.0%	36.6%	48.8%	34.1%	31.7%	41.5%	56.1%	42.7%
Minnesota	61.0%	62.2%	70.7%	53.7%	40.2%	39.0%	26.8%	29.3%	18.3%	20.7%
New Jersey	63.4%	59.8%	57.3%	51.2%	59.8%	50.0%	41.5%	41.5%	14.6%	29.3%
New Orleans		57.3%	50.0%	22.0%	46.3%	47.6%	68.3%	59.8%	45.1%	56.1%
New York	36.6%	45.1%	47.6%	40.2%	28.0%	40.2%	28.0%	39.0%	35.4%	51.2%
Oklahoma City								28.0%	61.0%	67.1%
Orlando	53.7%	51.2%	25.6%	43.9%	43.9%	48.8%	63.4%	72.0%	72.0%	63.4%
Philadelphia	52.4%	58.5%	40.2%	52.4%	46.3%	42.7%	48.8%	50.0%	32.9%	50.0%
Phoenix	43.9%	53.7%	35.4%	75.6%	65.9%	74.4%	67.1%	56.1%	65.9%	48.8%
Portland	59.8%	61.0%	50.0%	32.9%	25.6%	39.0%	50.0%	65.9%	61.0%	58.5%
Sacramento	74.4%	72.0%	67.1%	61.0%	53.7%	40.2%	46.3%	20.7%	30.5%	29.3%
San Antonio	70.7%	73.2%	69.5%	72.0%	76.8%	70.7%	68.3%	65.9%	61.0%	74.4%
Seattle	54.9%	48.8%	45.1%	63.4%	42.7%	37.8%	24.4%			
Toronto	51.2%	29.3%	40.2%	40.2%	32.9%	57.3%	50.0%	40.2%	48.8%	26.8%
Utah	53.7%	57.3%	51.2%	31.7%	50.0%	62.2%	65.9%	58.5%	64.6%	47.6%
Vancouver										
Washington	45.1%	45.1%	30.5%	54.9%	51.2%	50.0%	52.4%	23.2%	31.7%	28.0%
<i>Games</i>	82	82	82	82	82	82	82	82	82	82
<i>Average</i>	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%

² *Ibid.*

Figure 16: Total Player Salary Expenditures of NBA Teams 1992 to 2011³

(In \$ millions)	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01
Atlanta	12.9	18.0	22.5	21.9	22.2	25.8	30.1	40.1	43.1	39.2
Boston	25.3	25.0	21.2	24.5	20.2	25.1	26.8	32.8	46.2	51.5
Charlotte	12.6	14.2	18.0	19.3	23.1	22.4	27.0	30.8	38.6	46.4
Chicago	16.8	18.5	19.6	22.1	23.5	58.3	61.3	29.5	27.0	29.7
Cleveland	16.9	19.7	23.7	28.1	27.7	20.4	26.7	30.4	46.5	49.8
Dallas	13.0	11.5	14.3	18.1	21.8	26.1	27.3	35.3	39.5	51.9
Denver	11.9	13.8	17.3	21.9	24.6	24.6	26.5	32.0	43.2	51.8
Detroit	15.4	14.0	15.8	16.3	24.0	27.2	24.9	33.6	42.1	40.5
Golden State	12.5	15.5	21.2	19.8	22.9	30.9	32.9	31.5	36.1	41.8
Houston	13.3	15.9	16.8	17.6	25.6	26.3	28.1	37.9	52.3	49.3
Indiana	15.1	16.3	17.2	24.9	23.9	40.9	39.2	52.1	54.2	54.6
LA Clippers	13.0	14.3	20.2	17.9	21.2	26.0	24.5	30.0	22.5	29.6
LA Lakers	15.7	18.9	22.5	42.1	30.1	28.8	36.3	41.5	54.1	58.8
Memphis										
Miami	11.5	15.1	17.8	20.1	22.1	23.8	34.6	47.6	51.0	73.4
Milwaukee	12.5	14.0	15.9	16.3	23.0	24.2	25.9	34.3	45.8	57.4
Minnesota	10.8	13.7	15.5	17.7	22.6	24.4	27.8	33.5	42.1	47.2
New Jersey	12.6	16.3	20.1	23.1	22.6	25.4	28.5	42.0	52.7	69.0
New Orleans										
New York	12.4	14.0	22.1	25.7	43.3	25.9	54.0	69.4	71.3	73.6
Oklahoma City										
Orlando	12.3	15.0	20.8	29.1	36.5	45.1	44.0	41.1	41.6	36.5
Philadelphia	14.1	17.4	15.5	19.7	25.1	24.8	31.4	36.2	42.3	50.6
Phoenix	13.6	14.3	21.6	23.2	36.5	36.1	36.9	37.0	46.5	53.5
Portland	12.7	16.4	23.5	26.7	23.9	24.9	27.8	53.4	73.9	86.5
Sacramento	12.5	14.0	15.9	20.3	24.4	29.1	30.0	33.7	40.1	46.1
San Antonio	11.6	18.2	19.3	22.7	26.6	33.2	38.8	40.2	42.6	57.2
Seattle	13.3	14.0	16.0	24.1	25.9	30.3	37.6	31.9	38.3	50.6
Toronto					18.0	18.6	24.7	36.9	34.7	37.9
Utah	12.8	14.5	17.0	18.7	22.5	25.3	28.5	31.4	49.2	53.7
Vancouver					18.4	18.6	25.6	33.3	37.7	48.2
Washington	12.6	17.2	16.1	17.0	22.2	34.6	40.7	44.4	52.6	59.1
<i>Average</i>	<i>13.7</i>	<i>15.9</i>	<i>18.8</i>	<i>22.2</i>	<i>25.0</i>	<i>28.5</i>	<i>32.7</i>	<i>38.1</i>	<i>45.1</i>	<i>51.6</i>
<i>Salary cap</i>	<i>12.5</i>	<i>14.0</i>	<i>15.2</i>	<i>16.0</i>	<i>23.0</i>	<i>24.3</i>	<i>26.9</i>	<i>30.0</i>	<i>34.0</i>	<i>35.5</i>
<i>Excess</i>	<i>1.2</i>	<i>1.9</i>	<i>3.6</i>	<i>6.2</i>	<i>2.0</i>	<i>4.2</i>	<i>5.8</i>	<i>8.1</i>	<i>11.1</i>	<i>16.1</i>

³ Patricia Bender, "Season Team Salary Listings," *Patricia's Various Basketball Stuff*

Figure 16: Total Player Salary Expenditures of NBA Teams 1992 to 2011 (*continued*)⁴

(In \$ millions)	2001-02	2002-03	2002-03	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
Atlanta	51.2	55.6	64.4	40.7	42.9	48.5	55.5	68.2	65.0	70.1
Boston	47.5	52.4	60.2	64.6	56.9	62.6	74.1	79.2	83.6	81.8
Charlotte	50.0			23.4	33.5	41.7	52.7	62.5	68.1	65.7
Chicago	42.6	44.5	55.0	57.3	57.2	54.8	63.1	67.7	69.2	53.7
Cleveland	45.6	49.6	46.2	49.2	50.8	63.0	81.1	90.8	83.4	53.9
Dallas	57.4	72.2	79.3	91.6	97.9	88.5	101.0	94.8	88.4	84.6
Denver	54.4	49.1	39.3	45.6	56.0	65.4	82.6	69.4	74.3	67.7
Detroit	42.4	47.8	53.3	54.6	59.6	58.8	65.9	71.1	59.2	65.0
Golden State	47.7	47.7	52.9	54.9	57.1	65.0	61.0	67.4	65.2	68.4
Houston	49.2	50.2	55.4	60.2	69.2	63.8	69.4	73.0	69.1	72.3
Indiana	53.2	53.3	57.8	65.8	78.7	63.1	66.2	69.7	66.7	65.1
LA Clippers	33.8	42.8	38.4	45.2	50.9	59.1	64.6	62.2	61.0	53.0
LA Lakers	53.5	62.8	63.4	65.1	72.9	77.1	72.6	78.2	91.4	90.4
Memphis	50.9	61.0	57.4	67.0	67.5	61.8	54.1	55.1	56.3	70.0
Miami	52.6	57.4	46.8	58.9	60.0	63.8	74.6	70.0	73.6	64.3
Milwaukee	56.2	58.0	53.2	57.1	62.6	63.5	62.3	71.1	66.2	68.5
Minnesota	54.6	58.5	70.6	70.1	61.6	66.8	69.0	66.0	62.3	53.5
New Jersey	75.2	60.4	63.3	54.7	66.0	64.4	61.4	62.7	59.4	58.5
New Orleans		44.5	49.0	56.6	41.3	53.7	62.3	66.8	69.7	68.0
New York	85.5	93.5	89.4	102.4	126.6	117.0	96.2	96.6	85.5	66.4
Oklahoma City								68.3	58.0	55.9
Orlando	45.8	50.0	50.2	66.4	75.4	61.0	58.1	69.7	81.2	90.4
Philadelphia	58.1	64.8	60.4	72.0	84.7	69.1	74.0	67.2	64.5	68.4
Phoenix	56.2	54.5	66.6	44.3	53.6	65.4	70.7	76.0	64.8	66.0
Portland	83.8	105.2	82.9	83.7	60.0	75.0	73.2	79.9	56.5	74.4
Sacramento	54.9	70.1	68.0	61.8	62.8	64.0	63.3	68.7	67.4	45.0
San Antonio	45.7	52.8	46.1	47.1	63.0	65.3	69.8	68.0	79.1	69.4
Seattle	45.4	53.2	52.3	53.8	48.9	56.9	60.9			
Toronto	52.3	55.1	63.0	61.7	62.1	50.6	65.6	73.2	67.8	70.0
Utah	52.6	49.9	34.7	43.2	57.4	61.9	65.0	65.8	71.9	75.2
Vancouver										
Washington	54.8	46.3	45.1	49.5	54.6	62.7	65.2	70.5	72.8	58.3
<i>Average</i>	<i>53.5</i>	<i>57.3</i>	<i>57.4</i>	<i>58.9</i>	<i>63.1</i>	<i>64.5</i>	<i>68.5</i>	<i>71.7</i>	<i>70.1</i>	<i>67.1</i>
<i>Salary cap</i>	<i>42.5</i>	<i>40.3</i>	<i>43.8</i>	<i>43.9</i>	<i>49.5</i>	<i>53.1</i>	<i>55.6</i>	<i>58.7</i>	<i>57.7</i>	<i>58.0</i>
<i>Excess</i>	<i>11.0</i>	<i>17.1</i>	<i>13.6</i>	<i>15.1</i>	<i>13.6</i>	<i>11.3</i>	<i>12.9</i>	<i>13.0</i>	<i>12.4</i>	<i>9.1</i>

⁴ *Ibid.*

Figure 17: Total Home Attendance of NBA Teams 1992 to 2011⁵

<i>In thousands</i>	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01
Atlanta	512	491	547	505	497	586	715	332	601	560
Boston	611	608	605	607	733	664	743	441	684	629
Charlotte	972	972	972	972	986	986	960	481	733	615
Chicago	760	760	760	926	969	978	984	560	907	889
Cleveland	677	751	754	834	730	693	695	353	604	651
Dallas	650	555	526	678	684	619	542	363	666	680
Denver	534	603	674	704	675	461	484	297	638	619
Detroit	880	880	785	719	731	821	795	445	678	607
Golden State	616	616	616	616	616	622	500	336	509	592
Houston	593	554	615	653	668	668	668	407	625	519
Indiana	517	531	544	655	674	637	645	405	752	733
LA Clippers	500	533	471	438	415	401	409	257	560	599
LA Lakers	699	634	546	591	650	697	692	430	771	776
Memphis										563
Miami	614	615	617	599	606	615	615	379	707	677
Milwaukee	636	661	634	671	647	636	638	382	629	683
Minnesota	769	755	733	604	586	598	739	428	656	717
New Jersey	517	620	658	684	638	671	719	415	644	566
New Orleans										
New York	731	805	810	810	810	810	810	494	810	810
Oklahoma City										
Orlando	621	621	627	656	707	688	702	411	576	605
Philadelphia	574	515	509	508	489	626	655	436	757	806
Phoenix	594	780	780	780	780	780	780	472	773	738
Portland	528	528	528	530	850	853	844	487	835	831
Sacramento	698	710	710	710	710	710	605	419	687	710
San Antonio	658	658	904	920	811	707	783	537	889	913
Seattle	587	632	602	634	697	700	700	427	616	641
Toronto					950	749	675	439	756	793
Utah	807	816	815	811	813	813	816	493	801	792
Vancouver					704	679	660	418	570	563
Washington	506	559	620	701	688	701	801	402	617	639
<i>Average</i>	<i>643</i>	<i>658</i>	<i>665</i>	<i>686</i>	<i>707</i>	<i>695</i>	<i>703</i>	<i>419</i>	<i>691</i>	<i>684</i>
<i>Per-Game</i>	<i>15.68</i>	<i>16.05</i>	<i>16.23</i>	<i>16.73</i>	<i>17.25</i>	<i>16.96</i>	<i>17.13</i>	<i>16.75</i>	<i>16.86</i>	<i>16.68</i>

⁵ "NBA & ABA League Index," *Sports Reference* (USA Today Sports Media Group)

Figure 17: Total Home Attendance of NBA Teams 1992 to 2011 (*continued*)⁶

<i>In thousands</i>	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
Atlanta	506	529	566	593	618	639	668	687	678	642
Boston	660	709	648	656	693	691	764	764	745	764
Charlotte	463			592	671	638	603	598	649	650
Chicago	776	804	809	828	869	909	902	869	850	893
Cleveland	596	471	750	784	792	838	839	841	843	825
Dallas	803	816	826	823	825	814	832	822	820	804
Denver	634	608	721	724	703	706	712	706	737	697
Detroit	761	839	873	905	883	905	905	897	769	683
Golden State	593	635	646	670	731	742	805	777	739	766
Houston	481	565	623	663	636	678	719	718	678	664
Indiana	687	670	662	697	663	630	501	581	582	555
LA Clippers	740	706	646	696	712	755	692	664	670	727
LA Lakers	779	778	778	770	774	778	779	779	779	779
Memphis	591	611	603	691	648	601	524	520	553	601
Miami	656	628	608	815	818	809	798	749	727	811
Milwaukee	745	666	657	637	681	664	639	631	619	632
Minnesota	732	644	723	704	648	656	594	595	619	625
New Jersey	564	623	613	619	692	679	642	621	537	581
New Orleans		642	588	583	745	731	581	696	617	603
New York	810	779	744	800	776	771	783	791	800	809
Oklahoma City								767	738	726
Orlando	621	606	574	598	638	701	709	699	716	778
Philadelphia	843	807	788	733	677	615	610	648	583	605
Phoenix	669	667	670	726	730	755	755	755	724	720
Portland	798	796	663	680	617	671	802	841	840	841
Sacramento	710	710	710	710	710	710	580	520	543	569
San Antonio	906	736	721	751	771	765	761	749	742	751
Seattle	634	637	625	675	664	654	548			
Toronto	811	778	751	703	699	749	797	770	734	679
Utah	766	786	765	769	752	802	816	816	795	800
Vancouver										
Washington	848	827	628	705	685	753	736	682	664	688
<i>Average</i>	696	692	689	710	717	727	713	718	703	709
<i>Per-Game</i>	16.97	16.88	16.80	17.32	17.50	17.73	17.39	17.52	17.15	17.29

⁶ *Ibid.*

Figure 18: Ranking of NBA Teams by Market Size⁷ and Revenue Classifications⁸

Team	Market Size
New York Knicks	1
New Jersey Nets	1
Los Angeles Clippers	1
Los Angeles Lakers	1
Chicago Bulls	1
Washington Wizards	1
Philadelphia 76ers	1
Golden State Warriors	1
Boston Celtics	1
Detroit Pistons	1
Dallas Mavericks	2
Houston Rockets	2
Miami Heat	2
Atlanta Hawks	2
Seattle Supersonics	2
Phoenix Sun	2
Minnesota Timberwolves	2
Cleveland Cavaliers	2
Denver Nuggets	2
Sacramento Kings	2
Orlando Magic	3
Portland Trailblazers	3
Milwaukee Bucks	3
Charlotte Hornets & Bobcats	3
Indiana Pacers	3
Utah Jazz	3
San Antonio Spurs	3
New Orleans Hornets	3
Memphis Grizzlies	3
Oklahoma City Thunder	3

Team	Revenue
New York Knicks	1
Los Angeles Lakers	1
Chicago Bulls	1
Detroit Pistons	1
Phoenix Sun	1
Houston Rockets	1
Dallas Mavericks	1
Boston Celtics	1
San Antonio Spurs	1
Miami Heat	1
Cleveland Cavaliers	2
Philadelphia 76ers	2
Sacramento Kings	2
Portland Trailblazers	2
Toronto Raptors	2
Utah Jazz	2
Washington Wizards	2
Indiana Pacers	2
Oklahoma City Thunder	2
Minnesota Timberwolves	2
Orlando Magic	3
Denver Nuggets	3
Golden State Warriors	3
New Jersey Nets	3
Atlanta Hawks	3
Seattle Supersonics	3
Los Angeles Clippers	3
New Orleans Hornets	3
Memphis Grizzlies	3
Charlotte Hornets & Bobcats	3
Milwaukee Bucks	3
Vancouver Grizzlies	3

⁷ Maxwell, “NBA Population Bands and Per Capita Income”

⁸ Badenhausem and Ozanian, “The Business of Basketball”

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