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# The Rise in Major League Baseball Salaries: How Salary Arbitration, Free Agency and Personal Performance Statistics Factor into the Rise in Player Salaries

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# The Rise in Major League Baseball Salaries: How Salary Arbitration, Free Agency and Personal Performance Statistics Factor into the Rise in Player Salaries

## Abstract

The purpose of this paper is to discuss the factors supporting the rise in Major League Baseball Player Salaries over the years. In this paper, four "Former Great" players' personal statistics and salaries were compared to "Modern Era" players that achieved similar records, in an attempt to calculate approximately how much each former player would earn if they played today. Personal statistics used to compare position players were, players' batting averages (Avg.), slugging percentages (SLG%), and the number of homeruns calculated (HR's). Pitcher's figures associated were, strikeouts per innings pitched (K:IP), strikeout to walk ratio (K: BB), and walks and hits per innings pitched (WHIP). It was found that salary arbitration and free agency were directly related to the increase in MLB player salaries.

## Document Type

Undergraduate Project

## Professor's Name

Emily Dane-Staples

## Subject Categories

Sports Management

The Rise in Major League Baseball Salaries: How Salary Arbitration, Free Agency and Personal  
Performance Statistics Factor into the Rise in Player Salaries

James Grecco

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## THE RISE IN MLB PLAYER SALARIES

### **Abstract**

The purpose of this paper is to discuss the factors supporting the rise in Major League Baseball Player Salaries over the years. In this paper, four “Former Great” players’ personal statistics and salaries were compared to “Modern Era” players that achieved similar records, in an attempt to calculate approximately how much each former player would earn if they played today. Personal statistics used to compare position players were, players’ batting averages (Avg.), slugging percentages (SLG%), and the number of homeruns calculated (HR’s). Pitcher’s figures associated were, strikeouts per innings pitched (K:IP), strikeout to walk ratio (K: BB), and walks and hits per innings pitched (WHIP). It was found that salary arbitration and free agency were directly related to the increase in MLB player salaries.

## THE RISE IN MLB PLAYER SALARIES

### **The Rise in Major League Baseball Salaries: How Salary Arbitration, Free Agency and Personal Performance Statistics Go Hand in Hand with the Rise in Player.**

#### **Salaries**

For more than a century, professional sports have grown to mean more to people than just a game; sports alone have evolved to play a large role in the entertainment industry. Whether it was through the style of play, rules of the game, or safety precautions, over the years sports have arguably changed for the better. Baseball, commonly referred to as America's pastime, was the first professional sports league seen in the United States (Weiler & Roberts, 2004). When baseball burst onto the scene in 1850's, there was no pitch count, performance enhancing drugs or even batting helmets. Baseball in the past was far different from today; for example, in baseball today, pitchers rarely pitching passed the 7<sup>th</sup> inning, the Designated Hitter is considered a valuable position and players have salaries in the millions. In 1970, the average player salary was \$29,303 (Stone & Pantuosco, 2008). In 1990, the salary average mushroomed to \$597,537 and \$3.15 million in 2009 (Pogroszewski, 2009). This past season seven players had contracts that exceeded \$100 million dollars (Fisher, 2010). This research is designed to discover what has caused player salaries to drastically rise. After researching and analyzing the history of Major League Baseball, the concept of salary arbitration, free agency and the value of individual player statistics seem significantly influence player salaries.

#### **Literature Review**

To fully understand the effects of salary arbitration and free agency, one must know the history of how the two came about. In the early stages of Major League Baseball, players' having the rights to salary arbitration and free agency wasn't even considered by the owners. According to the Reserve Clause players were bound to the team that drafted them until one year

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after their contract expired or they retired for at least one year, whichever came first (Carfagna, 2009). The Reserve Clause had gone unchallenged until 1970, when All-Star and World Series champion Curt Flood shocked the sports world by suing Major League Baseball. In 1969, Flood was traded from the St. Louis Cardinals to the Philadelphia Phillies, a team he wasn't willing to play for (Weiler & Roberts, 2004 p.74). Flood sued MLB for \$1 million, challenging the Reserve Clause. Flood claimed the Reserve Clause violated antitrust laws and was a restraint on player's ability to trade their services. Previously, MLB was given an antitrust exemption after *Federal Baseball vs. Club* (1922) and *Toolson vs. The New York Yankees* (1955) (Weiler & Roberts, 2004 p.74). Flood was not suing for the money, he was suing for precedent. Flood was making \$90,000 per year, one of baseball's highest contracts at the time (Carfagna, 2009). Flood argued that he and the rest of MLB's players were being "treated as slaves and pieces of meat" (Weiler & Roberts, 2004 p.76). Ultimately, Flood believed baseball players had no bargaining power or leverage and the league was anticompetitive towards the players because the owners restricted the players' right's to trade their services (Carfagna, 2009). Flood was supported by all of the MLB players and the MLB Players Association (MLBPA). The MLBPA paid for all of Flood's legal expenses (Weiler & Roberts, 2004). *Flood vs. Kuhn*, (1972) was a landmark in the development of salary arbitration and free agency.

Eventually in 1972, the Supreme Court ruled in favor of MLB. Flood lost the case primarily because of *stare decisis* a legal term that meaning courts following previous precedents set by prior cases. The courts acknowledged the flawed reserve system, however were reluctant to change their earlier rulings on *Federal Baseball Club vs. National League*, (1922) and *Toolson vs. MLB*, (1955) (Weiler & Roberts, 2004). Even though Flood lost his battle with MLB, he put a crack in the league's armor when it came to restricting player's rights because Flood opened the

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door for players to challenge MLB in the courts. Many credit Flood's lawsuit as the beginning of arbitration and free agency (Carfagna, 2009). Flood's brave lawsuit is the reason MLB has salary arbitration and free agency (Weiler & Roberts, 2004).

A year after *Flood vs. Kuhn*, the National Labor Relations Board voted that baseball should be under its jurisdiction because baseball had a players union and labor law was just as important to the success of governing the league as antitrust exemption (Weiler & Roberts, 2004). In the 1973, salary arbitration was negotiated and agreed into MLB's Collective Bargaining Agreement (Hadley & Gustafson, 1991).

### **Salary Arbitration**

According to the MLB Collective Bargaining Agreement (2007-2011), free agency requires that after a player's third accrued professional season, he become eligible for salary arbitration. The player would be allowed arbitration for each year after his third season unless he signs a multiyear contract that extends beyond the player's fifth professional season (MLB Collective Bargaining Agreement, 2007-2011).

Salary arbitration is when a player and team present their desired salary to a panel of three arbitrators for the upcoming season (Hadley & Ruggiero, 2006). The middle of the two desired salaries is considered the midpoint and both sides have to argue that the player's value is on the side of the mid-point closest to their desired salary. The two parties use the player's personal statistics, intangibles, the previous year's salary and comparable players to support their argument (Hadley & Ruggiero, 2006). The arbitrators hear both parties' proposals, arguments and rebuttals. Then make a binding decision based on what side of the mid-point they arbitrator believe is most appropriate. The player is subject to a one-year contract worth the value that the arbitrator rules appropriate for the player based on the hearing (Hadley & Ruggiero, 2006). For

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the players 4<sup>th</sup> season, the one following the initial arbitration, he is eligible for arbitration again unless he and the team agree to a multi-year contract. Each player is eligible for arbitration until after their sixth season when they become unrestricted free agents (MLB Collective Bargaining Agreement, 2007-2011).

In 2008, Ryan Howard set the benchmark for the highest salary arbitration awarded contract (Stark 2008). He was awarded a one-year, \$10 million contract after winning his arbitration hearing against the Philadelphia Phillies and proving that players can earn lucrative contracts through salary arbitration hearings.

As the arbitrators are chosen at random, their decisions are considered extremely unpredictable. Because one never knows which three individuals they will get, decisions cannot be predicted (Hadley & Ruggiero, 2006). Therefore, a negotiation settlement prior to arbitration is favorable for both the player and the team because it reduces the risk of receiving an unfavorable ruling. Annually, there are very few arbitration hearings (Hadley & Ruggiero, 2006). Most players and teams prefer to settle prior to the arbitration hearing. This has resulted in very large contracts for good players because they have more leverage when it comes to negotiating contracts.

A recent example of a player settling prior to arbitration for a multi-year contract happened in 2010 when third year All-Star and Cy Young award winner, Tim Lincecum agreed to a two-year \$23 million contract with the San Francisco Giants minutes before his scheduled arbitration hearing (Ratto, 2010). The Giants were afraid that the arbitrators would have awarded Lincecum the \$13 million one-year contract he was expected to propose. Instead of potentially losing the hearing, being bound to a one year contract and another possible costly arbitration hearing the following year, the Giants decided sign Lincecum to a two-year contract. The Giants



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possibly saved themselves a few million dollars that they could have lost to Lincecum's 4<sup>th</sup> year arbitration hearing (Rotto, 2010).

### **Free Agency**

Overall, arbitration and the threat of arbitration can result in player's receiving higher salaries. However, free agency has led to some of the most lucrative contracts in sports history. Free agency allows players the ability to trade their services on the market for the highest bidder (MLB Collective Bargaining Agreement, 2007-2011). When a player becomes a free agent every team in professional baseball can compete for his services. In a free agent negotiation, previous free agents of the same position with similar personal statistics play a giant factor in determining a player's salary value. For example, in the 2008 off-season, AJ Burnett, the 2<sup>nd</sup> most sought after free agent pitcher signed a 5-year \$82.5 million with the New York Yankees (Crasnick, 2008). The following off-season, free agent pitcher John Lackey, a right-handed power pitcher similar to Burnett, used Burnett's free agent contract as a bargaining point to negotiate the same deal for him (Stark & Crasnick, 2009). One theory that helps explain free agency is the Coase Theorem (Hylan, Lage & Treglia, 1992).

According to the Coase Theorem, free agent players will migrate towards the bigger market cities and teams resulting in players receiving higher salaries (Hylan, Lage & Treglia 1992). According to the Coase Theorem players become attracted to larger cities, the possibility of making more money, and the fact that big market teams often compete for championship (Hylan, Lage & Treglia, 1992). This theorem was evident at the absolute very beginning of MLB free agency.

In 1974, two years after Flood vs. Kuhn, MLB had its first free agent. Catfish Hunter, the ace of the Oakland Athletics staff was granted unrestricted free agency after the Oakland

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Athletics breached his contract. Hunter brought his case to arbitrator Pete Seitz and was awarded free agency (Belth, 2005). As an unrestricted free agent, Hunter was allowed to trade his services on the free market with no restrictions. He met with 11 teams and received at least one phone call from every team in the league concerning their interest in signing him (Belth, 2005). Hunter eventually signed a \$3.35 million contract with the New York Yankees, (Belth, 2005). Hunter's contract was the most lucrative contract at the time (Belth, 2005). Hunter signing with the Yankees, a big market team in an attractive city, supports the Coase Theorem (Hylan, Lage & Treglia 1992). Before 1974, Willy Mays was baseball's highest paid player with a \$200,000 contract (Belth, 2005). Hunter's contract was just the beginning of the radical rise in salary demands because players saw their potential to earn large salaries if they were free from restriction.

In 1976, free agency was collectively bargained into baseball's CBA after the ruling of *Messersmith vs. MLB*, (1975) (Hadley & Gustafson, 1991). The system bargaining in 1976 is the same system today (MLB Collective Bargaining Agreement, 2007-2011). It requires six years of accrued service before they are granted unrestricted free agency. It also includes salary arbitration for years three through six. Salary arbitration and free agency are only granted to the player if they are not under a multiyear contract (MLB Collective Bargaining Agreement, 2007-2011).

### **Personal Statistics**

When explaining the rise in player salaries, personal player statistics go hand in hand with free agency and salary arbitration (Stone & Pantusco, 2008). There are many baseball statistics, yet various personal statistics can be altered by the performance of teammates (Stone & Pantusco, 2008). For example, player X can have a .320 batting average and a low number of

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runs batted in (RBI). Runs batted in are a tally of how many hits a player has that leads to a run for his team. Runs batted in can be severely influenced by the caliber of the players hitting or running the bases prior to player X. If the players batting in front of player X are not getting on base, or are bad base runners, it can result in a lower number of RBI's for player X. Therefore, in order to apply statistics to an individual player's value, one must look at homeruns (HR's), slugging percentage, (ratio of total number of bases achieved, on base hits divided by official at bats--SLG%) and batting average (Avg.) because they are the only statistics not impacted by the play of teammates (Stone & Pantusco 2008). For pitchers, the best individual statistics are strikeouts per innings pitched (K: IP), strikeouts to walk ratio (K: BB) and walks/hits per innings pitched (WHIP). For pitchers, these statistics are only impacted by how talented the pitcher is. A pitcher is the only one who controls how many strikeouts and walks they give up because they are the only one throwing the ball (Stone & Pantusco 2008). The (WHIP) statistic is important because it measures how many base runners a pitcher allows per inning. The pitcher may not have control over if a ball hit by a batter falls in for a hit, but they do control how many walks they give up. Pitchers are going to give up hits, but if they can limit the number of base runners, especially the ones they walk, they are more effective (Stone & Pantusco 2008).

In an empirical study done by Gary Stone and Louis Pantusco in 2008, the two scholars used the previously discussed statistics and found that since 1961 hitters and pitchers have had an increase in productivity elasticity over time, resulting in a rise of player salaries (Stone & Pantusco, 2008). In addition, the two authors also noted that players in the modern era earned more than players who played prior to free agency and salary arbitration (Stone & Pantusco, 2008). The two applied their regression formula using the individual statistics discussed earlier, along with durability consistency to former players Mickey Mantle and Sandy Koufax, both who

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played in the 1950's and 1960's under the reserve clause. Pantusco and Stone found that Mantle, a former center fielder, who in 1961 made \$91,000 would have earned \$1.4 million in 1961 if it weren't for the reserve clause, and \$10 million if he played in 2007 (Stone & Pantusco, 2008). Koufax, a former left-handed pitcher who made \$125,000 in 1966, would have made \$3.6 million in 1966 if not for the reserve clause and over \$25 million if he played in 2007 (Stone & Pantusco, 2008).

The purpose of this study was to examine how much money a former player would have made if given the rights to salary arbitration and free agency that modern players possess. Salary arbitration and free agency are important because they give players a chance to receive market value for their services by comparing one another based on statistics and past contracts. This research, evaluated the hypothetical possibility of former players playing in the modern era, and their potential to have possess more lucrative contracts than modern players.

### **Method**

#### **Sample**

Four players who played before salary arbitration and free agency were selected, and compared to four comparable players in the modern era. For purposes of this study, the modern era begins at 1989 because it was the first year full season for one of our modern players, Ken Griffey Jr. The modern players selected were Ivan Rodriguez, Ken Griffey Jr., Todd Helton and Pedro Martinez. The four former players the modern players were compared to were Johnny Bench, Willie Mays, Lou Gehrig and Bob Gibson. All statistics and career achievements were obtained from [www.baseball-reference.com](http://www.baseball-reference.com) a website whose information comes from the baseball encyclopedia.

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The first pair of players compared was retired catcher Johnny Bench, and current catcher Ivan Rodriguez. Both Bench and Rodriguez are considered two of the best defensive catchers of all time (Neyer, 2004). Both players each have won at least 10 Gold Glove Awards and were selected to 14 All-Star games. Rodriguez holds the record for most Gold Glove Awards for a catcher with 13. Furthermore, both players have won at least one Most Valuable Player Award (MVP). Rodriguez won once while Bench won twice. Lastly, both were right handed batters (G. ("Baseball-Reference", 2011).

The second comparable pair of players was centerfielders Willie Mays and Ken Griffey Jr., who recently retired after the 2009-2010 season. Willie Mays was selected to 24 All-Star Games, while Griffey Jr. was selected to 13. Griffey Jr. won 10 Gold Glove Awards to Mays' 12. Griffey Jr., won the MVP once. Mays won it twice. Even though Mays has won more awards, it is important to note that Griffey Jr. suffered three season ending injuries from 2002-2005. Tim Kurkjian, the heralded baseball writer for ESPN believes if Griffey Jr. didn't suffer from injury, he would have been one of the best baseball players of all time (Kurkjian, 2008). Griffey Jr. retired with 630 career homeruns despite nearly missing three seasons. He and Mays were named to Baseball's All-Century Team ("Baseball-Reference", 2011).

The third pair of players is Lou Gehrig and current first basemen Todd Helton. Both are left handed first basemen known for their offense, not their defense. Helton was selected to five All-Star games and Gehrig seven. Helton has won one National League Batting Title, and four Silver Slugger Awards. On the other hand, Gehrig won the American League MVP Award twice ("Baseball-Reference", 2011).

The fourth and final pair of players evaluated were pitchers Bob Gibson and Pedro Martinez, who recently retired after the 2009 season. Both pitchers were dominant right-handed

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power pitchers who have nearly identical amounts of Cy Young Awards and All-Star selections. Pedro won the Cy Young Award three times while Gibson won twice. Pedro is the only player to win the award in both leagues. However, Gibson was selected to nine All-Star games compared to Pedro, who was only selected to eight (“Baseball-Reference”, 2011).

### **Research Design**

#### **Statistics**

To begin researching, [www.baseballreference.com](http://www.baseballreference.com) was used to achieve each player’s yearly personal statistics and salary. Next, the data was transferred onto a Microsoft Word Excel Spread Sheet. The statistics examined for position players were homeruns (HR’s), batting average (.Ave) and slugging percentage (SLG%). These statistics were chosen because they are statistics solely influenced by the individual. This gives a better understanding of how productive each player truly was. The pitchers were analyzed based on their strikeout to walk ratio (K: BB), strikeout per innings pitched ratio (K: IP) and walks and hits per innings pitched (WHIP). These statistics were chosen because no matter how poor the rest of the team plays behind pitcher, the pitcher is the only person who can influence these statistics.

Each player’s first ten professional season statistics and salaries were recorded. The first ten years were chosen because each pair of players played for at least ten major league seasons. Also, no player had the exact same career length, therefore ten years was a convenient amount of time to analyze how productive and valuable each player was. Lastly, after year ten in their careers, Ken Griffey Jr. and Pedro Martinez suffered injuries that influenced their statistics because they were unable to play the same as before their injury. For example, Griffey Jr. suffered three season ending injuries from years 2002 through 2004 (Kurkjian, 2008). Martinez suffered a shoulder injury in 2001 that lowered his fastball velocity from 97-99 mph to 88-92

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mph. He was no longer the same dominant strikeout pitcher after his injury (“Baseball-Reference”, 2011).

### **Salaries**

The salaries of each former and modern player were collected from [www.baseballreference.com](http://www.baseballreference.com). The salaries of the former players were then put into an exchange rate calculator to calculate how much money the contracts would be worth in the modern era. The year 2004 was used as the exchange year because every modern player hadn't passed their 10<sup>th</sup> professional season in 2004. The website used to calculate each former player's salaries was [www.measuringworth.com](http://www.measuringworth.com). Each comparable pair of player's salaries were put on a line graph for years one through ten. There are four separate graphs (see Appendices A-D).

### **Results and Discussion**

After analyzing the salary regression tables, it is conclusive that the modern players saw significant increases for years four and seven because of salary arbitration and free agency. On the other hand, as predicted, the former players had no significant increase in salary, even though their personal statistics were very similar or better than the modern players.

The overall head to head statistical comparisons were split 2-2 between the modern and former players. Pitcher Pedro Martinez and catcher Ivan Rodriguez had a better statistical first ten years' compared to Bob Gibson and Johnny Bench. Nevertheless, outfielder Willie Mays and first basemen Lou Gehrig had a better first ten seasons' than Ken Griffey Junior and Todd Helton, however both Griffey Jr. and Helton combined to have contracts worth \$24 million by year 10; while Mays and Gehrig combined for only \$130,000.

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### **Salary Regression + Statistical Analysis**

#### **Ivan Rodriguez vs. Johnny Bench**

The first comparable group, Ivan Rodriguez and Johnny Bench were very unique to study (See Appendix A). In the beginning of their careers, Bench actually made more money than Rodriguez. Johnny Bench's \$90,000 contract was actually worth \$420,000 in 2004. Ivan Rodriguez only made \$140,000 in his first contractual season. This trend continued for both players second season. However, when looking at each players fourth season, Rodriguez separated himself drastically after he was given arbitration rights. Rodriguez's contract in his fourth season was worth \$2.675 million compared to Bench's \$670,000, a difference of just over \$2 million dollars. It was interesting to see that Bench was worth more than Rodriguez through their first three seasons' even though Bench's stats were not up to par with Rodriguez's. Rodriguez had a better career average in both batting average and homeruns, yet was worth less than Bench.

After year seven, Rodriguez saw a pay increase of \$2.25 million (\$6.7 million to \$8.95 million), while Bench's salary stayed at \$400,000, which in 2004 was worth \$1.25 million. When looking at both players' average statistics through year seven, Rodriguez only had a better batting average than Bench (.287 to Bench's .255). Bench had more homeruns and a better slugging percentage.

Overall, after analyzing their career averages after ten seasons, Rodriguez narrowly outperformed Bench. Rodriguez had a higher batting average and slugging percentage than Bench, but was less productive at hitting homeruns. If Bench played in the modern era, his salary



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would have been equal to or very close to Rodriguez's based on how similar Bench's statistics were and the fact that Bench would have possessed the rights to salary arbitration and free agency, just like Rodriguez.

### **Ken Griffey Jr. vs. Willie Mays**

After analyzing the salary regression, it was safe to say that Griffey Jr. benefited from both salary arbitration and free agency, two rights Mays wasn't given when he played (see Appendix B). For example, Mays had the same \$7,500 contract for the first four years of his career while Griffey Jr. was given a raise in pay of \$75,000 and \$580,000 in years two and three of his career. After year three Griffey Jr. signed a \$2.025 million contract.

When looking at both players average statistics after their first three seasons, Mays had a better average for both homeruns and slugging percentage (see Appendix B). Yet, he didn't see a pay increase until his fifth season. Mays' contract at the time was \$7,500 for his first four professional seasons. That value actually decreased over the four year span when converted into modern value (see Appendix B). Mays didn't see a raise until his fifth season when he made \$75,000.

When looking at both players' seven year averages, Mays was better in all three statistical categories and saw his pay increase \$15,000 from year seven to eight in his career. On the other hand, Griffey Jr. still saw a more valuable pay increase from year seven to eight (\$50,000). This is even more interesting because Griffey Jr.'s seventh season was his worst statistical season of his first ten. He hit .258, with 17 homeruns and a .481 slugging percentage.

Overall, after analyzing both players' ten year averages Mays had a better batting average and slugging percentage, while Griffey Jr. averaged more homeruns. Mays contract in his tenth season was for \$105,000 which in 2004, would have been worth \$510,000. Griffey Jr.'s contract

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for his tenth season was worth \$8,153,667. However, it is important to note that Griffey Jr. was coming off of back to back seasons with 56 homeruns. In the end, Mays' statistics were better than Griffey Jr.'s, however he was not paid anywhere close to Griffey Jr. because of the restrictions he faced due to the reserve clause. If Mays had played in the modern era, it would have been reasonable to predict that his contract would have been worth more than Griffey Jr.'s based on his statistical consistency over his first ten professional seasons, and the rights he would have been allowed playing in the modern era.

### **Todd Helton vs. Lou Gehrig**

By looking at the salary regression table, it is obvious that Lou Gehrig's rights were vastly restricted (see appendix C). There is a slight degree of increase from his third year to his tenth year. On the other hand, Todd Helton benefited greatly from his ability to negotiate his own contract on the free market. After season four and seven, Helton saw drastic increases in salary due to his negotiating leverage. From the time Helton was first eligible for arbitration to the time he was first eligible for free agency, Helton's salary went from \$750,000 to \$10.6 million. Helton was paid \$15.7 million more than Gehrig at the end of each player's 10<sup>th</sup> season, even though Gehrig's statistics were much better in all three categories analyzed.

Each player's three year average statistics would be considered great, however Gehrig's were superb. Gehrig's batting average was .22 points higher. He hit 6 more homeruns and had a slugging percentage that was .80 points higher than Helton's. Nevertheless, Helton's salary increased \$550,000 while Gehrig's increased \$17,000 (see appendix C).

After year seven of both players careers, again both players had phenomenal statistics, however Gehrig's were the best. He had a better career average in all three statistics. Gehrig's seven year average statistics were .339 with 33 homeruns and a .637 slugging percentage.

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Needless to say, even after seven years of above average performance, the New York Yankees only paid \$25,000 for his services, which in 2004 was worth \$310,000. On the other hand, Todd Helton had a career average of .330 with 31 homeruns and a .599 slugging percentage. Helton's statistics were not as good as Gehrig's. However, Helton's contract after his seventh season was worth \$11.6 million (see appendix C).

Overall, when looking at each player's ten year average statistics, Gehrig vastly outperformed Helton, yet was worth \$16 million less than Helton. After their tenth season, Helton's batting average dropped .2 points, he hit 3 less homeruns and his slugging percentage dropped .17 points. Yet, Helton's contract was worth \$16.6 million, a \$6 million increase from his seventh season. On the hand, Gehrig continued to excel and in return, received a pay decrease of \$2,000. Gehrig's career batting average increase .3 points. He hit an average of 6 more homeruns, and had a slugging percentage of .2. Nevertheless, Gehrig's contract went from \$25,000 to \$23,000, which in 2004 was worth \$335,000. There may not be a better example of a player whose value would have been significantly greater if he had been given the same rights that modern players have today. If Gehrig played in the modern era, his value would be extremely high, specifically because of how high his slugging percentage was. It is very rare to see a player have a slugging percentage over .700 in one year, Gehrig had two seasons where his slugging percentage was above .700. Based on his statistics compared to Helton's, Gehrig would have had a contract worth more than Helton's if he had played in today's era.

### **Pedro Martinez vs. Bob Gibson**

When looking at the salary regression for both players, it is obvious to see the vast difference in salary between both pitchers (see appendix D). Both Martinez and Gibson had a very similar salary in their first four seasons. Gibson's contract was actually worth more when

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converted to 2004. However after year four, the two player's salary similarities ended. After year four, Martinez's salary rose from \$315,000 to \$3.615 million. Bob Gibson didn't see a drastic salary increase until his sixth season when his contract rose from \$85,000 in year five to \$125,000 in year six. In the end, Martinez saw his salary go from \$119,000 in year one to \$14 million in year ten. On the other hand, Gibson saw his salary increase from \$30,000 to \$160,000, which converted in the modern era, is an increase of \$183,000 to \$680,000. When looking at each player's statistics for all ten seasons; Martinez was more effective than Gibson.

After looking at both players' three year averages, Martinez had better stats across the board. Martinez had an average strikeout to walk ratio of 2.63, a strikeout to innings pitched ratio of .998 and a walks and hits per innings pitched ratio of 1.17. Conversely, Bob Gibson made more money and averaged worse statistics than Martinez. Gibson averaged a strike out to walk ratio of 1.27 less than Martinez, .255 less strikeouts per innings pitched, and allowed .380 more batters to reach base through hits or walks. Both players' three year averages were excellent, however Martinez's were so good it doesn't make sense that he didn't receive a larger increase in pay until year four (see Appendix D).

Martinez's average statistics through his first seven seasons were amazing. His statistics explain why he saw such a \$10.875 million growth in salary over years four through seven. He averaged 3.97 strikeouts more than walks. Martinez struck out at least 1.119 batters per innings pitched and allowed only 1.092 batters to reach base an inning through walks or hits. On the other hand, Gibson's seven year average statistics were good, but nowhere close to that of Martinez. Gibson had a strikeout to walk ratio of 1.986, a strikeout to innings pitched ratio of 0.812 and allowed 1.339 batters to reach base due to a walk or hit (see Appendix D).

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When looking at each player's first ten seasons, Martinez was more effective and dominant than Gibson (see Appendix D). Martinez averaged double the amount of strikeouts to walks than Gibson (4.92:2.48). Martinez averaged 0.353 more strikeouts per innings pitched (1.174:0.821) and allowed .265 less base runners an inning (WHIP 0.969:1.234). Therefore it is justified that Martinez's salary after ten years would be worth more than Gibson's. However, Gibson's statistics were good. If he played in the modern era he would have a salary less than but within a few million dollars of Martinez.

### **Conclusion**

The purpose of this research paper was to discover a reason for the drastic increase in MLB player salaries. Also, this research was designed to compare players from a past era to the modern era in an attempt to understand how valuable the former players would be if they played in the modern era. Before researching, the hypothesis was the increase in player salaries was directly related to the rights of salary arbitration and free agency that modern players possess and past players didn't. The hypothesis was found to be true. Two former players possessed better statistics than their modern comparable player and were valued at such a drastically less amount. For example, Willie Mays had better statistics, but was paid \$7,643,667 less than Griffey Jr. (using Mays' converted salary, see Appendix B).

Also, it was expected that the former players would prove to be worth more than their comparable modern player because of the pedigree and awards they won during their era. For instance, Lou Gehrig won two MVP awards. His comparable modern player, Todd Helton, didn't win one. Therefore, it was anticipated that Gehrig's statistics would have been better than Helton's, inferring Gehrig would be worth more in the modern era than Helton. However, it was found that out of the four comparable pairs of players, two of them deserved to be worth more

## THE RISE IN MLB PLAYER SALARIES

than their former comparable. Both Ivan Rodriguez and Pedro Martinez had better statistics which justifies how much money they made. However, it doesn't justify the large amount they made compared to their comparable. If Bench and Gibson, played in the modern era, they would have made less than Rodriguez and Martinez, but it would not have been as drastic as found (See Appendix A and D).

While performing this study, there were some limitations. First, finding comparable players from two different eras was difficult. The study could have been better if it was possible to find comparable players from both eras at each position. For example, not only could a value be put on the players, but potentially each position as well.

Furthermore, discrimination and race was not factored into this study. Pure evidence of racial discrimination was unable to be found. However, if this evidence was discovered, it could have been used to explain why certain former players didn't receive higher salaries. For example, Willie Mays had a contract worth \$7,500 for his first four professional seasons (See Appendix B). Willie Mays was an African American who began his career in 1951, a time when racial tension was present. In those four years, Mays hit a combined 116 homeruns and deserved to earn more than \$7,500 per year (see Appendix B).

Overall, the rights of salary arbitration and free agency have caused a direct increase in the rise of MLB player salaries. If players from the past were to play in the modern era their salaries may not be as high as current players, but they most certainly would not be as low as they were in the past. In some circumstances, players from the past would be more valuable than current players.



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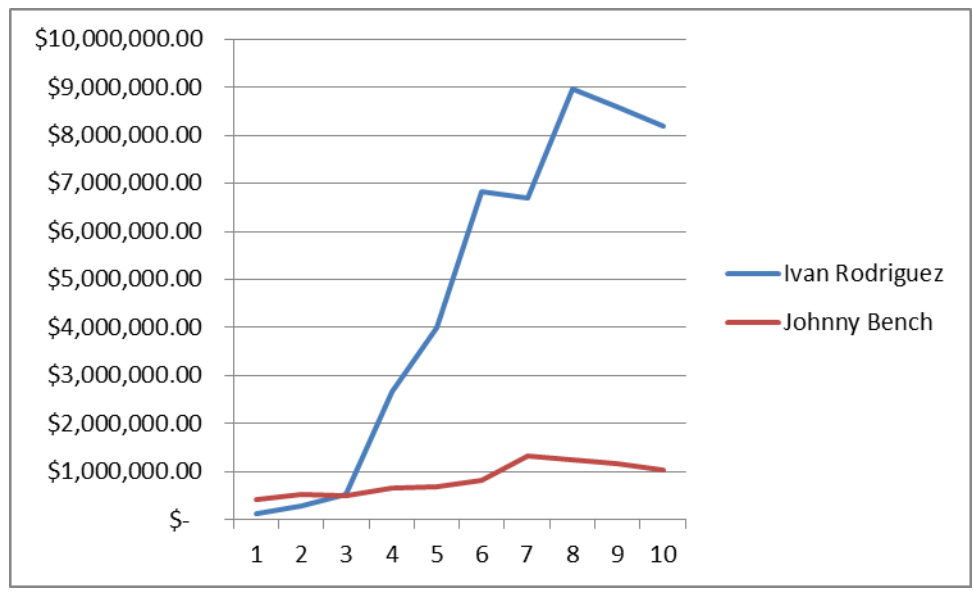
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Appendix

Appendix A

Ivan Rodriguez vs. Johnny Bench

Salary Regression



Ivan Rodriguez vs. Johnny Bench

Statistics

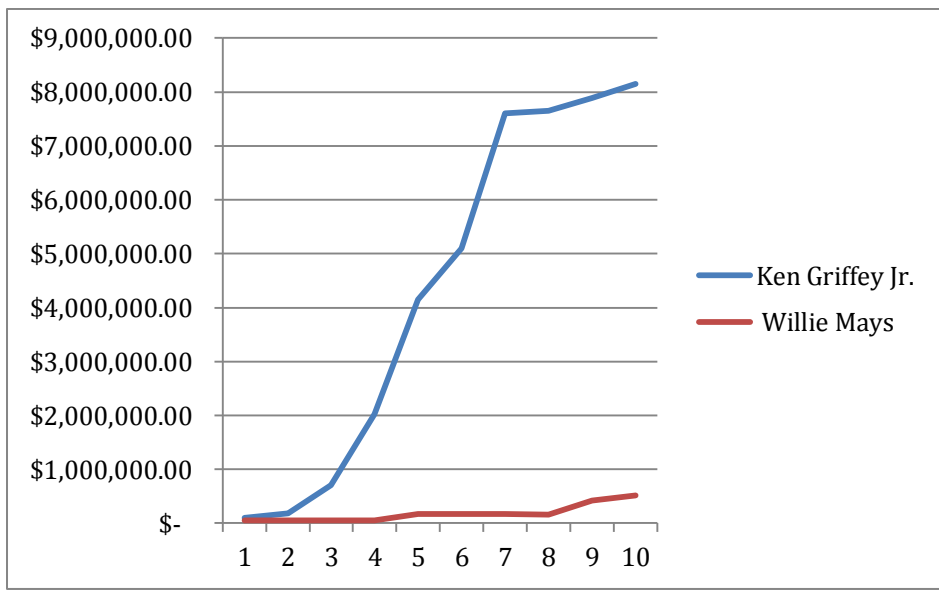
Ivan Rodriguez	.Ave	HR	SLG %	Salary		Johnny Bench	.Ave	HR	SLG %	Salary	\$ Value in 2004
1	0.264	3	0.354	\$ 140,000		1	0.163	1	0.256	\$ 90,000	\$ 420,000
2	0.260	8	0.36	\$ 300,000		2	0.275	15	0.433	\$ 115,000	\$ 519,000
3	0.273	10	0.412	\$ 520,000		3	0.293	26	0.487	\$ 115,000	\$ 489,000
4	0.298	16	0.488	\$ 2,675,000		4	0.293	45	0.587	\$ 175,000	\$ 670,000
5	0.303	12	0.49	\$ 4,000,000		5	0.238	27	0.423	\$ 200,000	\$ 702,000
6	0.300	19	0.473	\$ 6,825,000		6	0.27	40	0.541	\$ 235,000	\$ 825,000
7	0.313	32	0.484	\$ 6,700,000		7	0.253	25	0.429	\$ 400,000	\$ 1,330,000
8	0.321	20	0.513	\$ 8,950,000		8	0.28	33	0.507	\$ 400,000	\$ 1,250,000
9	0.332	21	0.558	\$ 8,600,000		9	0.283	28	0.519	\$ 400,000	\$ 1,160,000
10	0.347	35	0.667	\$ 8,200,000		10	0.234	16	0.394	\$ 400,000	\$ 1,040,000
Ave after Yr 3	0.266	7.0	0.375			Ave after Yr 3	0.244	14.0	0.392		
Ave after YR7	0.287	14.3	0.437			Ave after YR7	0.255	25.6	0.451		
Ave after YR 10	0.301	17.6	0.480			Ave after YR 10	0.258	25.6	0.458		

THE RISE IN MLB PLAYER SALARIES

Appendix B

Ken Griffey Jr. vs. Willie Mays

Salary Regression



Ken Griffey Jr. vs. Willie Mays

Statistics

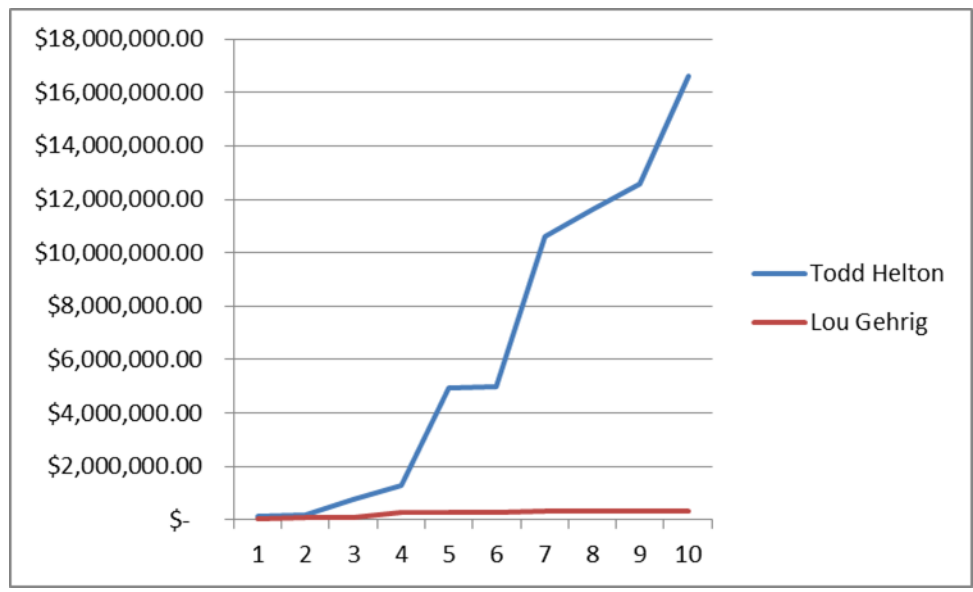
Ken Griffey Jr.	.AVE	HR	SLG %	Salary		Willie Mays	.AVE	HR	SLG %	Salary	\$ Value in 2004
1	0.264	16	0.42	\$ 105,000		1	0.274	20	0.472	\$ 7,500	\$ 58,000
2	0.3	22	0.481	\$ 180,000		2	0.236	4	0.409	\$ 7,500	\$ 53,400
3	0.327	22	0.527	\$ 700,000		3	0.345	41	0.667	\$ 7,500	\$ 53,000
4	0.308	27	0.535	\$ 2,025,000		4	0.319	51	0.659	\$ 7,500	\$ 52,700
5	0.309	45	0.617	\$ 4,150,000		5	0.296	36	0.557	\$ 75,000	\$ 176,000
6	0.323	40	0.674	\$ 5,100,000		6	0.333	35	0.626	\$ 85,000	\$ 174,000
7	0.258	17	0.481	\$ 7,600,000		7	0.347	29	0.583	\$ 90,000	\$ 168,000
8	0.303	49	0.628	\$ 7,650,000		8	0.313	34	0.583	\$ 105,000	\$ 163,000
9	0.304	56	0.646	\$ 7,885,532		9	0.319	29	0.555	\$ 105,000	\$ 426,000
10	0.284	56	0.611	\$ 8,153,667		10	0.308	40	0.584	\$ 105,000	\$ 510,000
Ave after Yr 3	0.297	20.0	0.476			Ave after Yr 3	0.285	21.7	0.516		
Ave after YR7	0.298	27.0	0.534			Ave after YR7	0.307	30.9	0.568		
Ave after YR 10	0.298	35.0	0.562			Ave after YR 10	0.309	31.9	0.570		

THE RISE IN MLB PLAYER SALARIES

Appendix C

Todd Helton vs. Lou Gehrig

Salary Regression



Todd Helton vs. Lou Gehrig

Statistics

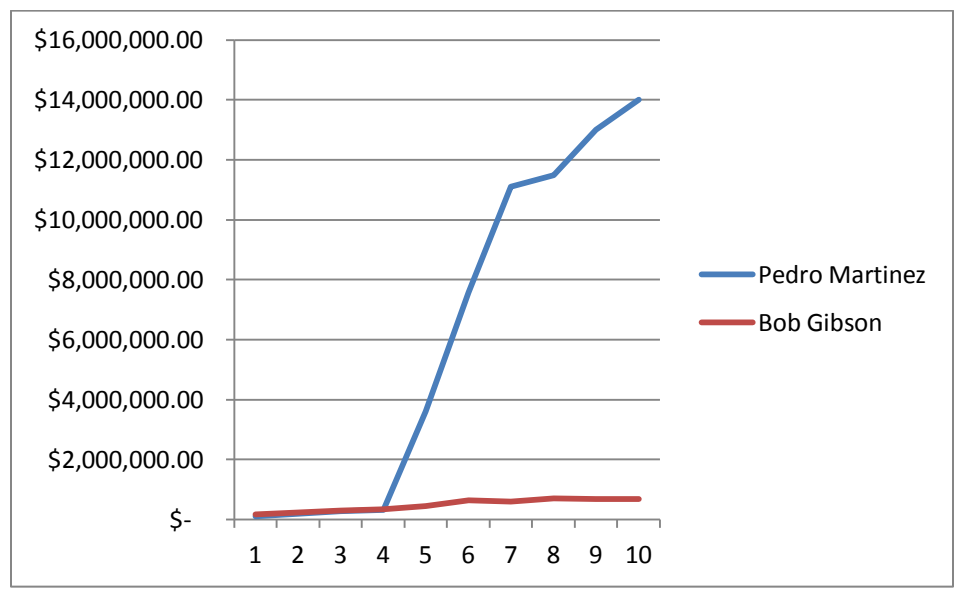
Todd Helton	.AVE	HR	SLG %	Salary		Lou Gehrig	.AVE	HR	SLG %	Salary	\$ Value in 2004
1	0.28	5	0.484	\$ 150,000		1	0.295	20	0.531	\$ 3,750	\$ 40,400
2	0.315	25	0.53	\$ 190,000		2	0.313	16	0.549	\$ 6,500	\$ 69,400
3	0.32	35	0.587	\$ 750,000		3	0.373	47	0.765	\$ 8,000	\$ 87,000
4	0.372	42	0.698	\$ 1,300,000		4	0.374	27	0.648	\$ 25,000	\$ 276,000
5	0.336	49	0.685	\$ 4,950,000		5	0.3	35	0.584	\$ 25,000	\$ 276,000
6	0.329	30	0.577	\$ 5,000,000		6	0.379	41	0.721	\$ 25,000	\$ 283,000
7	0.358	33	0.63	\$ 10,600,000		7	0.341	46	0.662	\$ 25,000	\$ 310,000
8	0.347	32	0.62	\$ 11,600,000		8	0.349	34	0.621	\$ 25,000	\$ 310,000
9	0.32	20	0.534	\$ 12,600,000		9	0.334	32	0.605	\$ 25,000	\$ 346,000
10	0.302	15	0.476	\$ 16,600,000		10	0.363	49	0.706	\$ 23,000	\$ 335,000
Ave after Yr 3	0.305	21.7	0.534			Ave after Yr 3	0.327	27.7	0.615		
Ave after YR7	0.330	31.3	0.599			Ave after YR7	0.339	33.1	0.637		
Ave after YR 10	0.328	28.6	0.582			Ave after YR 10	0.342	34.7	0.639		

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Appendix D

Pedro Martinez vs. Bob Gibson

Salary Regression



Pedro Martinez vs. Bob Gibson

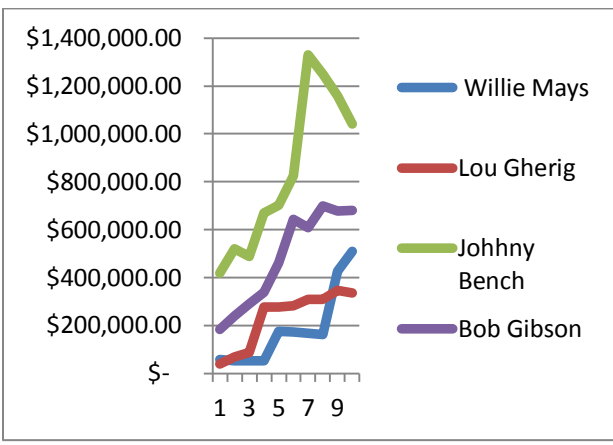
Statistics

Pedro Martinez	K: BB	K:IP	WHIP	Salary		Bob Gibson	K: BB	K:IP	WHIP	Salary	\$ Value in 2004
1	2.09	1.11215	1.243	\$ 119,000		1	1.23	0.64	1.533	\$ 30,000.00	\$ 183,000.00
2	3.16	0.984743	1.106	\$ 200,000		2	1.44	0.802326	1.673	\$ 40,000.00	\$ 239,000.00
3	2.64	0.895984	1.151	\$ 270,000		3	1.4	0.78673	1.433	\$ 50,000.00	\$ 291,000.00
4	3.17	1.026827	1.195	\$ 315,000		4	2.19	0.89578	1.151	\$ 60,000.00	\$ 339,000.00
5	4.55	1.265035	0.932	\$ 3,615,000		5	2.13	0.802518	1.257	\$ 85,000.00	\$ 461,000.00
6	3.75	1.076329	1.091	\$ 7,575,000		6	2.85	0.853361	1.169	\$ 125,000.00	\$ 644,000.00
7	8.46	1.468794	0.923	\$ 11,100,000		7	2.66	0.90301	1.157	\$ 125,000.00	\$ 608,000.00
8	8.88	1.308756	0.0737	\$ 11,500,000		8	2.88	0.803285	1.027	\$ 150,000.00	\$ 699,000.00
9	6.52	1.402754	0.934	\$ 13,000,000		9	3.68	0.83952	1.089	\$ 150,000.00	\$ 677,000.00
10	5.98	1.200402	1.039	\$ 14,000,000		10	4.32	0.881	0.853	\$ 160,000.00	\$ 680,000.00
Ave YR 3	2.63	0.998	1.167			Ave YR 3	1.357	0.743	1.546		
Ave YR 7	3.97	1.119	1.092			Ave YR 7	1.986	0.812	1.339		
Ave YR 10	4.92	1.174	0.969			Ave YR 10	2.478	0.821	1.234		

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Appendix E

Former Players Salary Regression



Modern Players Salary Regression

