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THE EFFECT OF OWNERSHIP STRUCTURE ON WINNING PERCENTAGE IN MAJOR
LEAGUE BASEBALL

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ABSTRACT

This paper examines the effects of ownership structure on winning percentage in Major League Baseball from 1976-2012. Ownership structure is divided into four types: single, joint, media, and corporate. Using a fixed effects model, a positive relationship was found between joint and media owned teams and winning percentage while a negative relationship was discovered between winning percentage and corporate ownership. Another model attempted to find when effects from a change in ownership can be recognized. However the results were unable to present a specific timeline.

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Chapter 1 Introduction

Legendary UCLA football coach, Henry Sanders, once said "winning isn't everything." Obviously he and George Steinbrenner would have disagreed. During his tenure as team owner, Steinbrenner led the Yankees to seven World Series titles. Love or hate the Yankees, there is no denying the effective leadership of Steinbrenner. In order to put together the best team possible, owners and analysts often look at direct factors including on-field player quality. But what if the owner plays a role in winning percentage? Could George Steinbrenner be just as an important factor as on-base percentage in determining a team's winning percentage?

For this paper I am examining the link between ownership structure and winning percentage within Major League Baseball. Major League Baseball, unlike the National Football League, has a wide variety of ownership structures. The NFL is comprised mainly of single owners- only one person owns the team- whereas baseball has a mixed structure. For this paper I assess four different classifications of ownership structure. The first type is a single owner. This is the most popular type of ownership and has been from the advent of baseball. The second type is a joint owner. This is a group of two or more people, not affiliated with a company, who own a team. The third type of ownership I will be examining is a media ownership. This is similar to the business ownership except this includes only media and communications companies. Fourth is a corporate ownership. This is the ownership of a team by a business. These four classifications of ownership are the basis for my analysis.

While there is a lot of literature regarding the effects of capital structure and player salary on competitive balance or winning percentage, we do not see studies on how ownership structure

or behavior affects competitive balance or winning percentage. This study attempts to form the

bridge between owners and the talent on the field. As baseball enters a new era of play

dominated by Sabermetrics and strategy, teams search for every opportunity to gain an edge on

the competition. Perhaps that edge needed to capture a playoff spot lies not on the field but in the

front office.

Chapter 2 Literature Review

2.1 Capital Structure, Fan Attendance, and Winning Percentage

Although previous studies do not directly relate to my topic, this research will give insight into other factors that could affect winning percentage. One of these studied topics is capital structure and fan attendance.

Aside from player contracts, stadiums are the essential capital that owners use to display their product. Is it possible that the playing facility could have an effect on attendance? A study by Clapp and Hakes (2005) examines this possible relationship. Their model shows attendance is responsive to on field performance- not the condition of the facilities. We do see a spike in attendance in the first few years of the new facility but it is not statistically significant (Clapp and Hakes, 2005). It certainly does not increase revenue for owners or fan attendance in the long run. With regards to capital structure and fan attendance, we see that there is no "honeymoon effect."

If anything, Clapp and Hakes (2005) find that fan attendance is responsive to winning percentage. The researchers found that "the total effect of each additional win is 1.57% or about 440 more fans per game" (Clapp and Hakes, 2005). Even if there was a "honeymoon effect" on revenue for new stadiums this would only be desirable for an owner if the wins in the new stadium produce higher marginal revenue than wins in the old venue (Clapp and Hakes, 2005). Overall, capital structure does not affect winning percentage. However we observe that attendance is responsive to winning percentage- a higher winning percentage correlates to greater attendance. Fans would much rather watch a winning team than a losing team.

2.2 Player Salary, MRP, and Winning Percentage

In American sports, there is no way to distinguish between a profit maximizing owner and a winning percentage maximizing owner. Economists are not even sure if there is a difference. Since a higher winning percentage is correlated with higher revenue and higher profits, we assume that every owner is a profit maximizer.

Owners and managers hire talent to produce winning percentage in the long run based on their marginal revenue product, or MRP for short. Essentially, MRP is the input's contribution to the revenues earned by the team owner. Owners wish to discover the cost of winning and compare it to the player's MRP to determine if the talent is worth hiring (Fort, 2006).

In 1974, sports economist Gerald Scully discovered a way to calculate the value of a baseball player's MRP. He found certain players added value to the team and estimated the value of slugging, hitting, and pitching holding the performance of teammates constant to calculate individual MRP. In a competitive market, one would expect players to get paid close to their MRP-especially with free agency, which has been in place since December 1975. The free agency market allows for competition among teams to bid on high talent players and in turn receive payment similar to their MRP.

We observe star players can have an effect on owner's revenue. For example, in 2001 when Barry Bonds was in pursuit of the single-season home run record, attendance at San Francisco Giants games increased by roughly 1.2 million fans. Furthermore this generated a revenue increase to the Giants' owners between $23.7 million and $50.5 million (Fort, 2006). The Giants had a winning season that year and produced a winning percentage of .556 (Baseball-Reference). An owner's goal is to pay a player exactly (or close to) his MRP. An owner does not want to overpay for talent. By paying a player his MRP, an owner, in theory, is able to acquire

the best team for the money. Essentially an owner is able to maximize winning percentage by efficiently paying for talent.

2.3 Player Salary, Competitive Balance, and Winning Percentage

One of the most important objectives of the Commissioner of Major League Baseball is to increase competitive balance among teams. If the same eight teams are consistently making the playoffs and the other 22 teams are below .500, fans will lose interest in the game. Even the fans of the good teams will grow bored with their team constantly winning. (As a Pittsburgh Pirates fan I'm not sure if I fully believe this statement.) Research has shown that games with competitive balance have a positive influence on fan attendance (Meehan, Nelson, and Richardson, 2007). Fans want to see competitive games. In order to keep baseball healthy and profitable, the Commissioner wants high levels of competitive balance. In order to do this, other leagues, such as the National Football League and the National Basketball Association, have implemented salary caps and luxury taxes for those teams who exceed the salary cap. However this system is not in place in Major League Baseball.

Herbert Lewis, Thomas Sexton, and Kathleen Lock (2007) conducted a study examining player salaries in baseball and how they affect winning percentage. The researchers used Data Envelopment Analysis (DEA) to measure the relative efficiency of each team (Lewis, Sexton, and Lock, 2007). They also employed the "Two-Stage Model of A Major League Baseball Organization" in order to determine the efficiency of every team relative to efficiency of its competitors. As shown in Figure 1, during the first stage the team's management uses resources to gain talent. Then in stage two the talent produces games won.
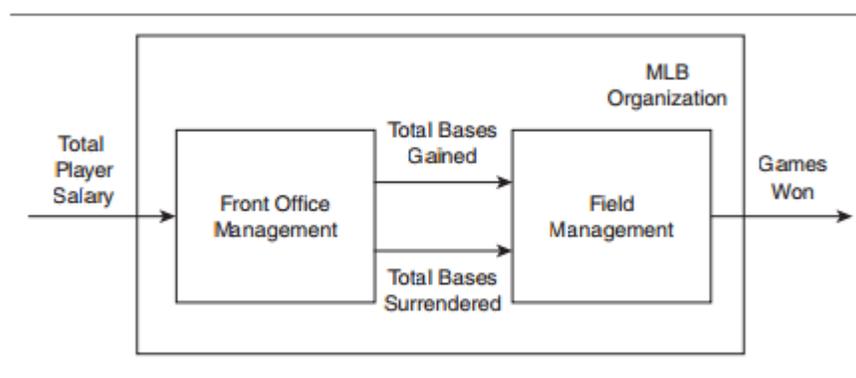
Figure 1. Two-State Model of a Major League Baseball Organization

The researchers found that about four teams each year that are noncompetitive due to low total player salary. This number of noncompetitive teams can go upwards of eight teams although low total player salary cannot account for the full difference in competitiveness (Lewis, Sexton, and Lock, 2007). The study also found every year roughly, four teams will over pay for talent while nine teams will pay an efficient amount for talent while remaining competitive. These numbers show there is not the desired amount of competitive balance in baseball. According to this study only nine of the thirty teams are paying an appropriate amount for talent *and* staying competitive. The researchers took this a step further and found large market teams, like the New York Yankees or Los Angeles Dodgers, are more likely to overpay for talent compared to small market teams like the Milwaukee Brewers or Tampa Bay Rays (Lewis, Sexton, and Lock, 2007). For the most part large market teams have higher payrolls and have more monetary resources to pay (or overpay) for talent. By overpaying for talent it is possible a team is not playing at the highest level and producing a winning percentage below full potential.

A further study by Schwartz and Zarrow (2009) examines the effect of payroll and winning percentage. They studied errors in baseball from 1997-2008 to determine payrolls based on regular season and postseason wins. Interestingly enough, there is no statistically significant relationship between winning percentage and a team payroll (Schwartz and Zarrow, 2009).

Having a high payroll may allow for teams to become playoff eligible but since 2000 there have

been nine different World Series winners. Although a large payroll does not guarantee a World

Series Championship, they found a high correlation between playoff berths and payroll

(Schwartz and Zarrow, 2009). The researchers share their doubts about competitive balance and

if certain limitations, including a salary cap and luxury tax, would be effective to improve

competitive balance.

2.4 City Size, Attendance, and Winning Percentage

Becoming a successful baseball team involves more than team payroll. Researcher J.C.

Bradbury (2007) examined the relationship between city size and fan attendance. From his

research he concluded that variance in a city size accounts for 40 percent of variance in winning

percentage (Bradbury, 2007).

To advance this point, let's examine the Tampa Bay Rays. Established in 1998, the Rays

have not yet been in baseball for twenty years. Their market area is considerably smaller than big

name cities like New York or Boston. Baseball teams located in Florida have consistently had

weak fan bases. This was evident when the Rays made a Cinderella-like race to the World Series

in 2008. Consistently finishing in last place in the highly competitive American League East

Division in previous years, the Rays won the division and went on to clinch the American

League pennant. Although they made it to the World Series, they lost in five games to the

National League Champions, Philadelphia Phillies. Even though they were the best team in the

American League, the Rays could not produce a sellout crowd for the 2009 season-averaging a

measly 15,000-20,000 fans per game (Baseball-Reference).

James Meehan, Randy Nelson, and Thomas Richardson (2007) studied the relationship

between competitive balance and attendance in Major League Baseball from the years 2000-

2002. Their literature identified three different types of competitive balance. The first is a measure between seasons. This measures the variety of teams that have won the World Series in a given time period. The second is a measure of competitive balance within a season. This captures the level of competitiveness in a playoff race throughout a given season. The final measure of competitive balance captures the "uncertainty of outcome of a particular game" (Meehan, Nelson, and Richardson, 2007). This means that fans are more likely to attend a game when the opponent is fairly matched to the home team rather than if one team is expected to win the game with ease. This third type of competitive balance assumes that fans act in an asymmetric manner- that attendance can fluctuate based on an opponent rather than the quality or characteristics of the home team (Meehan, Nelson, and Richardson, 2007).

In their models, the researchers found that fans do respond to a change in competitive balance. A 0.1 difference in two teams' winning percentage can alter the number of fans by nearly 2,000 per game (Meehan, Nelson, and Richardson, 2007). Fans prefer games when the outcome is unclear. However the researchers also found the effects of competitive balance on winning percentage may be more complex than previously thought. It is difficult to account for the number of games left in a given season and the team's ranking in the standings among others (Meehan, Nelson, and Richardson, 2007). Overall we do see a relationship between attendance and competitive balance: fans prefer to watch teams with high winning percentages and evenly matched opponents.

2.5 Ownership Structure and Corporate Success

Though previous research has not focused on baseball, ownership structure and firm success is a topic that has been widely studied and debated since 1932. Studies during this time span attempt to explain how variances in stockholders could affect firm performance and

profitability. Many of the studies present conflicting views as "ownership structure" and "performance" can be measured in a variety of ways. A recent paper by Wahla, Ali Shah, and Hussain (2012) attempts to analyze the relationship of ownership structure and firm performance in non-financial companies listed at the Karachi Stock Exchange from 2008-2010. They define two different variables for ownership structure: concentrated ownership and managerial ownership. The first, concentrated ownership, is the percentage of shares held by the top five shareholders. Managerial ownership is the percentage of shares held by managers or CEOs (Wahla, Ali Shah, and Hussain, 2012). To estimate firm performance they used Tobin's Q which is a ratio of the total market value of a firm to the total asset value.

The researchers found a negative significant relationship between managerial ownership and performance for this market and there was no significant relationship between concentrated ownership and firm performance (Wahla, Ali Shah, and Hussain, 2012). While this insight is helpful there are major differences between this study and my paper. The study focuses on a global market in Pakistan whereas the baseball model is based in the United States. Furthermore baseball is not publically traded good and financial information regarding a team's welfare can be difficult to find.

Chapter 3 Data and Methodology

3.1 Data Summary

I decided to include a number of variables in order to determine the best results. My variables consist of year, team, ownership type, winning percentage, city size, average salary adjusted for inflation, and average ticket price adjusted for inflation.

My data covers the years from 1976 to 2012 which includes 37 complete seasons. 1976 is the first season of free agency after Major League Baseball dropped the reserve clause in December 1975. The reserve clause was keeping player salaries low and preventing player movement between teams as owners had a stronghold on contracts. Just from a quick glance at the data it is obvious it did not take long for free agency to drastically increase player salaries. For example, the average salary of a player for the Baltimore Orioles in 1976 was $55,895. That number jumped to $70,960 in the next year. 1976 is a good starting point not only because of the advent free agency but also because no teams folded after this time. Teams were added- Colorado Rockies, Florida (Miami) Marlins, etc. and teams moved- the Montreal Expos to the Washington Nationals- but there are no teams that simply ceased to exist after this time period.

My data has assigned a number 1-30 to represent a team. These numbers are generated in alphabetical order to the teams. I will run regressions to not only see changes within the league over time but throughout an individual team's history as well. I am particularly interested in teams with a volatile ownership structure compared to those with static structures. During this time period the Los Angeles Dodgers changed ownership structure four times. I am curious to examine the data surrounding this particular team.

I performed a similar function for ownership structure. Each team and year is assigned a number 1-4 to represent the type of ownership. This information was retrieved from a Wikipedia

article listing the historical account of Major League Baseball owners. 1 represents a single

ownership, 2 is a joint ownership, 3 is a media ownership, and 4 is a corporate ownership.

"Other" represents a small number of instances where a team was either owned by a city or

Major League Baseball. The frequency column in Table 1 below illustrates the number of times

in which the ownership type occurred for all 30 teams over the course of 1976-2012. The

percentage column accounts for the percentage that particular ownership type represents.

Table 1. Frequency of ownership types

Ownership Type	Frequency	Percentage
1 (Single)	731	70.97%
2 (Joint)	99	9.61%
3 (Media)	57	5.53%
4 (Corporate)	122	11.84%
Other	21	2.04%

As illustrated in the figure above, a single ownership (1) is by far the most popular type

of ownership in Major League Baseball comprising of 70.97% of the total observations. We do

see considerable numbers for corporate ownership (4) and joint ownership (2) as well.

Table 2. Team changes in structure

Number of Structure Changes	Number of Teams
0 changes	11 teams
1 change	9 teams
2 changes	6 teams
3 changes	3 teams
4 changes	1 team

Table 2 above lists the number of ownership changes teams have experienced throughout the time period. Interestingly, over one-third of all teams have not undergone a change in ownership structure. Roughly another third has only changed once while the last third has changed more than once.

For this study winning percentage will serve as the dependant variable. Information regarding winning percentage was obtained from Baseball-Reference. Winning percentage is the number of games won divided by the total number of games played. This is a straight-forward and reliable statistic to measure a team's success.

Table 3. Winning percentage variable observations

Variable	Observations	Min	Max
Winning Percentage (WP)	1030	.305	.672

As illustrated in Table 3, we can see that the highest winning percentage ever recorded by any team during this time span is .672 and the lowest winning percentage is .305. A winning percentage of .672 translates to 108 wins, an astronomical number only achieved once. With 162 games a season it is difficult to consistently deliver a winning percentage above .600. This data supports the idea that baseball is a competitively balanced sport- especially when compared to other professional sports leagues. These upper and lower bounds would not be considered extremes in the National Football League. In Figure 2 below we see that, through the first 16 games of each league's season, the shape of the line representing Major League Baseball most accurately adheres to the normal distribution curve.
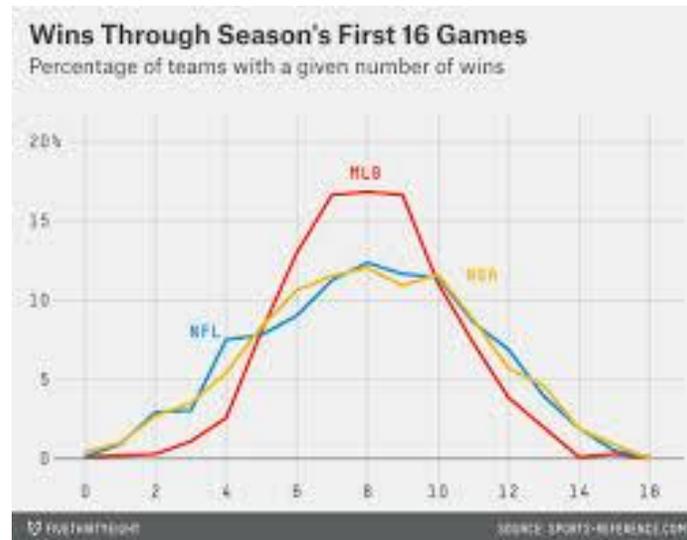
Figure 2. Normal Distribution of winning percentages in MLB, NBA, NFL

The next variable included is salary adjusted for inflation represented in 2012 dollars.

Information for salary and ticket price was retrieved from a database on sports economist

Rodney Fort's personal website. Based on the literature review I discovered a possible

relationship between winning percentage and player salary. This correlation is especially

important after the advent of free agency. Teams with the highest payrolls are able to attract

players with greater talent by offering high paying contracts. I would suspect that teams with

higher average salaries will also have higher winning percentages. In Table 3 below we see that

the average annual salary for a player is roughly $817,750 yet the highest annual salary recorded

is $4,055,663. This large fluctuation between average salary and the highest salary is a result of

free agency and the varying terms of agreement in player contracts. Overall salaries are widely

spread and subject to change. While salaries are highly volatile it is still important to include in

the analysis. Salaries are directly related to an owner's strategic process. Whereas total runs

scored is a secondary factor of ownership structure, since the owners do not play the actual

baseball game, player contracts and salaries are a direct result of an owner's decision making and

behaviors.

Table 4. Real salary variable observations

Variable	Observations	Mean	Min	Max
Real Salary	1030	$817,749.90	$56,633.66	$4,055,663

An owner will search for the best talent for a team but also the most efficient talent. As

discussed earlier, calculating a player's marginal revenue product can establish an appropriate

salary. In the past decade the Boston Red Sox have had the best of both worlds. The Red Sox

have one of the highest payrolls in Major League Baseball but they also use Sabermetrics and

evaluating MRP to sign the most efficient players for their team. Under the ownership of John

Henry and his associates the Red Sox have won three World Series Championships.

I have also included average ticket price adjusted for inflation represented in 2012

dollars. Since there is a fixed supply of tickets (stadium occupancy capacity) prices of tickets

increase by a shift to the right of the ticket demand curve- we can see this illustrated in Figure 3

below.
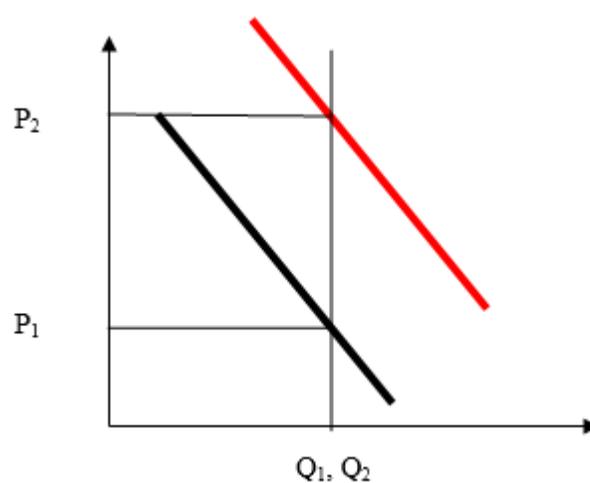
Figure 3. Ticket supply and demand

Table 5. Real ticket variable observations

Variable	Observations	Mean	Min	Max
Real Ticket Price	978	$8.28	$4.05	$34.01

Since fans want to see a successful team, they demand more tickets when a team's winning percentage is high. We also observe spikes in ticket prices when a team plays in a new venue. This recently happened to the Pittsburgh Pirates. When PNC Park was introduced in 2001 the average ticket shot up to $19.51 even though the Pirates had a winning percentage well below .500. After a few years the ticket prices adjusted and decreased. In 2012 the average price of a ticket for a Pirates' game was $16.11. The mean price for a ticket for a game adjusted for inflation is roughly $8.28 as shown in Table 3 above. This seems low when comparing this price to tickets for popular teams like the Yankees or the Red Sox as those tickets can reach upwards of $50.00 in today's market. However baseball ticket prices remained rather low for the majority of the selected time period. There appears to be a loose relationship between winning percentage and ticket sales. It is possible that the relationship is reversed- winning percentage affects ticket prices.

As observed in the literature review, city population can also affect winning percentage. Ordinarily, teams representing big cities have a larger fan base and can generate more revenue from this greater pool of fans. It is no coincidence that New York, Chicago, and Los Angeles all have two baseball teams and is consistently in the top five most populated cities in the United States. This data, courtesy of the U.S. Census Bureau, represents population by decade, not by year. The Census did not provide data regarding city population for any increments smaller than 10 years. This could possibly cloud the true effects of city size on winning percentage.

Table 6. Population variable observations

Variable	Observations	Mean	Min	Max
Population	1030	1,547,762	160,113	8,175,133

As represented in Table 5 we see that the average city size for a Major League team is approximately 1.5 million people. This estimate is rather high because of large cities like Los Angeles and New York increasing this average. It raises eyebrows because the average population of a team like Pittsburgh is more around 400,000. The average including all observations overshoots the Pittsburgh average by nearly three times! It is important to consider this when analyzing the results.

3.2 Model 1: Fixed Effects Regression

The first model is a fixed effects regression. Since I use panel data and time series data I believe that a fixed effects model will best evaluate my data. I developed an econometric model to represent the corresponding winning percentage for a team during each year. The model uses a team specific fixed effect defined by $type_i$ to control for any characteristics where a team could influence winning percentage. It also includes a time specific fixed effect defined by $year_t$ to control for any factors during a particular year that could influence winning percentage. The regression was utilized four times for each ownership type to measure the individual effects of the different structures using the model below. I hypothesize that a single and joint owner will be statistically insignificant because these owners are more concerned about the personal status associated with owning a team rather than the actual team's success. However I believe there will be a positive significant relationship with the corporate and media structures because of the considerable monetary resources of a business. This money is then used to put together a talented team.

$$WP_{it} = \beta_0 + owntype_{it}*\beta_1 + logRealsal_{it}*\beta_2 + realtic_{it}*\beta_3 + logPop_{it}*\beta_4 + yeartype_t*\beta_5 + type_i*\beta_7 + \varepsilon_{it}$$

Where:

Table 7. Definition of Variables for Model 1

Variable	Definition
WP	Winning Percentage
Owntype	Ownership type
logRealsal	Log of real average salary
Realtic	Real average ticket price
logPop	Log of city Population
Year	Year
Type	Team

3.3 Model 2: Fixed Effects Regression with Variables Before & After Ownership Change

The second model I used attempts to get a deeper look into when and how changes in ownership can affect winning percentage. I ran this regression three times- for a joint ownership, media ownership, and a corporate ownership- because these three ownership types came back significant after testing Model 1. Using this model, I hope to find a pattern for when a change in ownership structure affects a team and by how much. I hypothesize the coefficients on the variables before the change will be negative to represent a decrease in winning percentage. This would signal a need for an ownership change. However after the change I would expect to see a positive coefficient on the variables for a joint and media to signal the effectiveness of the ownership change-as represented by Model 1. The variables after the change for a corporate owner would be negative as this would fit my results from Model 1.

$$WP_{it} = \beta_0 + year_i * \beta_1 + team_{it} * \beta_2 + change2_{it} * \beta_3 + change1_{it} * \beta_4 + change_{it} * \beta_5 + changeplus1_{it} * \beta_6$$
$$+ changeplus2_{it} * \beta_7 + changeplus3_{it} * \beta_8 + changeplus4_{it} * \beta_9 + changeplus5_{it} * \beta_{10} + \varepsilon_{it}$$

Where:

Table 8. Definition of Variables for Model 2

Variable	Definition
Change2	2 years prior to ownership change
Change 1	1 year prior to ownership change
Change	Change in ownership structure
Changeplus1	1 year after ownership change
Changeplus2	2 years after ownership change
Changeplus3	3 years after ownership change
Changeplus4	4 years after ownership change
Changeplus5	5 years after ownership change

Chapter 4 Discussion of Results

Table 9. Model 1 results with ownership type 1 (Single)

Variable	Coefficient	Standard Error	T-Value	P-Value
Owntype 1 (Single)	-.0059232	.0054141	-1.09	0.274
LogRealsalary (Real salary)	.0761749	.00633	3.10	0.000***
Realtic (Real ticket price)	-.0038156	.0011297	-3.38	0.001***
LogPop (Population)	.0179899	.0108495	0.29	0.098

Table 10. Model 1 results with ownership type 2 (Joint)

Variable	Coefficient	Standard Error	T-Value	P-Value
Owntype2 (Joint)	.014268	.0078352	1.82	0.049*
LogRealsalary (Real salary)	.0760444	.0063137	3.31	0.000***
Realtic (Real Ticket Price)	-.0037465	.001129	-3.32	0.001***
LogPop (Population)	.0167804	.0108066	0.33	0.121

*= Significant at 0.05 level
**=Significant at 0.01 level
***= Significant at 0.001 level

<p align="center">**Table 11. Model 1 results with ownership type 3 (Media)**</p>

Variable	Coefficient	Standard Error	T-Value	P-Value
Owntype3 (Media)	.0390393	.0160519	2.43	0.015*
LogRealsalary (Real Salary)	.0775015	.0062363	2.96	0.000***
Realtic (Real Ticket Price)	-.0035753	.001131	-3.16	0.002**
LogPop (Population)	.0203106	.0111402	-4.32	0.069

<p align="center">**Table 12. Model 1 results with ownership type 4 (Corporate)**</p>

Variable	Coefficient	Standard Error	T-Value	P-Value
Owntype4 (Corporate)	-.0136424	.0075619	-1.80	0.042*
LogRealsalary (Real Salary)	.0757173	0.006343	11.94	0.000***
Realtic (Real Ticket Price)	-.0036336	.0011327	-3.21	0.001***
LogPop (Population)	.0185541	.0107936	1.72	0.086

*= Significant at 0.05 level
**=Significant at 0.01 level
***= Significant at 0.001 level

4.1 Model 1 Results

Model 1 was a comprehensive test examining the effects of the different types of ownership structures on winning percentage. It included every team and every year for the given time period along with variables for average team salary, average ticket price, and city size.

Table 13. Results for the ownership structure variables and translation into wins

Variable	Coefficient	Translation into Wins
Owntype1 (Single)	Not significant	Not Significant
Owntype2 (Joint)	.014268	+2 games
Owntype3 (Media)	.0390393	+6 games
Owntype4 (Corporate)	-.0136424	-3 games

The table above summarizes the results from Model 1 and how the coefficient translates into the addition or subtraction of wins to a season. Note that joint ownership, media ownership, and corporate ownership are all statistically significant. Model 1 revealed a positive relationship between joint ownership and winning percentage; a team with a joint owner can add two wins to its total compared to teams who do not have a joint owner. Media owned teams also have a positive relationship and can add six wins to its total while corporate owned teams have a negative relationship can subtract three wins from its total. Although this handful of wins seems insignificant in a 162 game season, when it's the race for October one or two more wins can determine a postseason berth.

4.2 Discussion of Media Ownership Results

One or two more wins may get a team into the playoffs but a six game lead can mean clinching a division and home-field advantage during the postseason. The results show a considerable relationship between winning percentage and a media ownership. Throughout Major League Baseball history only three teams have been owned by the media: the Atlanta Braves, the Los Angeles Dodgers, and the Toronto Blue Jays. Of the four ownership types, the media ownership was the least common. It is important to consider this small sample size for media ownership could influence the results by making the statistical relationship stronger than reality.

Although a media ownership is not the most popular form ownership, could it be the most effective? TV and media deals are one of the biggest sources of revenue for a franchise. Major League Baseball is an 8 billion dollar enterprise with 1.4 billion of the total coming from media deals (Brown, 2014). When teams are owned by broadcasting and media corporations, it cuts out the middle man and allows revenues to flow freely to the team. It should be no surprise that the Los Angeles Dodgers have the highest payroll in baseball and the Atlanta Braves and Toronto Blue Jays are in the top half of team payrolls (Petchinsky, 2014). Since the models controlled for average salary, a fatter papycheck cannot be the only reason a player would be attracted to a media owned team. The media owned team cuts out the middle man for broadcasting revenues and it also is a direct link to public exposure for a player.

Sports stars are some of the most visible figures in the media. From endorsements, commercials, and even reality shows, titans on the field are not just featured on game day. Playing for a media owned team presents special opportunities for exposure. Owners have a monetary incentive to feature their product on their television network. In turn, a player enjoys

more time in the spotlight. The public can observe facets of the player not exhibited on the field.

An athlete is able to transcend the role of a player to that of a personality- he becomes a multi-

dimensional public figure. Aside from boosting the ego of an athlete, time on screen can

introduce opportunities for a career following retirement. Although the length of a baseball

player's career is longer than that of other athletes, it is still short compared to the average

American's work life. After retirement a player may become a sports broadcaster, spokesperson,

or even a talk show host. When a player is employed by a media owned team he is able to bolster

his television resume during his player career. He also is able to make connections and network

with professionals in the broadcasting industry to benefit him later in life.

But a team does not have to be owned by a media corporation to reap the benefits TV

contracts. Some teams have created their own TV networks. The New York Yankees designed

the YES Network and signed a contract last year for $385 million annually over 20 years

(Settimi, 2014). It was the largest media rights deal in Major League Baseball history. The

Yankees literally have their own network to feature their team. If a player signed with the

Yankees, he not only has the opportunity to play for a storied franchise but a team with its own

telecommunications network.

4.3 Discussion of Joint Ownership Results

The effects of joint owned teams and corporate owned teams are not as simple to explain.

A joint owned team gives a great deal of power to a handful of people in making decisions for

the team. Since important decisions are reserved for a few, the responses given are thoroughly

examined and well-planned. These types of owners make conscious decisions for the well-being

of the franchise- with both financials and team performance. Rash decisions are less likely to be made by joint owners because of a system of checks and balances. The owners must converse with each other before making a final decision. When a group of people own a team they must cooperate together to put the highest quality product on the field.

In order to own a successful baseball team an owner must strike a balance between passion and profitability. While a joint owner stands in the middle of this spectrum, a single owner and corporate owner are at the extremes. Since there are no checks and balances with other owners in a single ownership structure, a lone owner could be more inclined to quick decision making. It is possible a single owner could focus too heavily short run fixes without concern for long run consequences.

The opposite effect could be true for corporate owned teams. The owners may be detached from the central operations of the team and concerned with revenues. In this case the main motives for owning the team would be to make profits regardless of the product on the field. Although a winning team will increase revenues, a losing team is still a profitable venture. Financial information of clubs are difficult to find. However, based on the information we have, we know losing teams still bring in a large revenue pool. There is less responsibility associated with corporate ownership as it is easy to shift responsibilities from one person to another rather than when the ownership of a team is centralized among a tight core of people. Essentially the lack of personalization and preoccupation with revenues associated with corporate owner could explain why these teams have a lower winning percentage.

4.4 Discussion of Other Variables

Table 14. Values of variables for given ownership structures in Model 1

Type of Ownership	Log Real Salary Coefficient (P-Value)	Real Ticket Price Coefficient (P-Value)	Log Population Coefficient (P-Value)
Single	.0761749 (0.000)***	-.0038156 (0.001)***	.0179899 (0.098)
Joint	.0760444 (0.000)***	-.0037465 (0.001)***	.0167804 (0.121)
Media	.0775015 (0.000)***	-.0035753 (0.002)**	.023106 (0.069)
Corporate	.0757173 (0.000)***	-.0036336 (0.001)***	.0185541 (0.086)

Not only did I examine the effects of ownership structure on winning percentage but I considered other factors. For all ownership types, average real team salary and average real team ticket price influences winning percentage. Schwartz and Zarrow (2009) did not find a relationship between payroll and winning percentage however I believe a relationship is present. I found that salary does positively impact winning percentage. Focusing on salary and breaking it into different components- such as yearly increases in team salary- could make the effect stronger. The salary variable used was quite broad and encompassing. It is possible salary has a greater impact on winning percentage than predicted by Model 1.

It is no surprise ticket prices were statistically significant. Essentially the results explain that reductions in ticket prices lead to reductions in winning percentage. This is negatively correlated with attendance; and attendance is a response to winning percentage. When there is high demand for tickets and high attendance, then ticket prices will increase. When the demand for tickets is low and attendance is low, the ticket prices will fall. Ticket prices are more expensive for teams with higher winning percentages. It is possible that, like attendance, ticket prices are an exogenous variable and causality may run in the opposite direction

Population was the only additional variable not statistically significant for any ownership type. As previously mentioned, the data for population was by decade rather than by year. Therefore the numbers were not the most accurate indicators of city size. More precise data could change these results. However even if population was statistically significant, I believe the overall influence on winning percentage would be rather small, perhaps one or two wins.

Table 15. Values of variables for given ownership structures in Model 1

Variable	Coefficient	Standard Error	T-Value	P-Value
Change2 (Change in 2 yrs)	-.0070865	.0268773	-0.26	0.792
Change1 (Change in 1 yr)	-.0047955	.0269027	-0.18	0.859
Change (Year of change)	.0453851	.0299287	0.70	0.486
Changeplus1 (Change +1 yr)	.0208965	.0299287	0.70	0.486
Changeplus2 (Change +2 yrs)	.0502468	.0296894	1.69	0.092
Changeplus3 (Change +3 yrs)	-.0083561	.0323584	-0.26	0.797
Changeplus4 (Change +4 yrs)	.0342704	.0322592	1.06	0.289
Changeplus5 (Change +5 yrs)	-.034853	.0321209	-1.09	0.279

*= Significant at 0.05 level
**=Significant at 0.01 level
***= Significant at 0.001 level

<p align="center">Table 16. Model 2 results with ownership type 3 (Media)</p>

Variable	Coefficient	Standard Error	T-Value	P-Value
Change2 (Change in 2 yrs)	-.0686546	.0627553	-1.09	0.279
Change 1 (Change in 1 yr)	-.0682364	.0628054	-1.09	0.282
Change (Year of change)	-.1145011	.0520646	-2.20	0.032*
Changeplus1 (Change +1 yr)	-.0823987	.0495553	-1.66	0.102
Changeplus2 (Change +2 yrs)	-.078656	.0491874	-1.60	0.116
Changeplus3 (Change +3 yrs)	-.0271559	.0491111	-0.55	0.583
Changeplus4 (Change +4 yrs)	-.0544347	. 0491002	-1.11	0.272
Changeplus5 (Change +5 yrs)	-.0155365	.0490973	-0.32	0.753

<p align="center">Table 17. Model 2 results with ownership type 4 (Corporate)</p>

Variable	Coefficient	Standard Error	T-Value	P-Value
Change2 (Change in 2 yrs)	.0175976	.026818	0.59	0.554
Change1 (Change in 1 yr)	-.0104531	.0296319	-0.35	0.725
Change (Change)	-.0767869	.0264629	-2.90	0.004**
Changeplus1 (Change +1 yr)	.0463648	.0241853	-1.92	0.057
Changeplus2 (Change +2 yrs)	-.0334945	.0241634	-1.39	0.167
Changeplus3 (Change +3 yrs)	-.0042596	.0241259	-0.18	0.860
Changeplus4 Change +4 yrs)	-.0500778	.0241171	-2.08	0.039*
Changeplus5 (Change +5 yrs)	-.013559	.0240851	-0.56	0.574

*= Significant at 0.05 level
**=Significant at 0.01 level
***= Significant at 0.001 level

4.5 Discussion of Model 2 Results

Model 2 attempts to pinpoint when a change in ownership structure influences winning percentage. Since the likelihood is low a change in ownership structure immediately affects winning percentage, Model 2 included lags for five years after the change and two years prior to the change. I hypothesized before the change, the coefficients would be negative and after the change, the coefficients would be positive for a joint and media owned team. For a corporate owned team, the coefficients before and after the change would be negative. However the results were not as expected.

As exhibited by my results in Tables 15-17, there was no pattern found to explain the influence of winning percentage over time. The majority of the information was statistically insignificant and the coefficients did not follow a pattern. However there was one consistency with my hypothesis. The coefficients on the change year for both media and corporate ownership were negative and statistically significant. This supports my theory that it takes time for ownership changes to reflect in winning percentage. This could also indicate a poor winning percentage merits a change in ownership. It is possible the effects are more clearly observed farther down the timeline but, given the limitations with the data, it may not be reflected in the results.

However the more likely scenario is related to the complexity of the situation. I believe that ownership structure does affect winning percentage. This is represented in Model 1. However owners may operate at different speeds and employ unique strategies to achieve a certain result. Model 2 assumes that all owners follow a similar pattern and timeline for success. Model 1 is a representation of end results whereas Model 2 is a representation of the means.

Measuring the result of ownership structure is much easier to define as opposed to measuring the individual steps taken towards achieving that end. Owning a baseball team takes business savvy and psychological prowess. Model 2 was insufficient in accounting for the behavioral aspects of baseball and an owner's decision-making.

4.6 Suggestions for Further Study

Moving forward the relationship between media ownership and winning percentage should be explored. I am curious to know if the size of a TV deal could affect team performance. My results showed that factors involving money- salary and ticket price- influence winning percentage. I am sure profits from media contracts could act in a similar manner. Furthermore the change in winning percentage due to a media ownership was quite high at six more wins per season. This is larger than the influence of joint and corporate contracts combined. A key take away from this paper is to explore the avenues in which the media can influence different aspects of the baseball business.

Chapter 5 Conclusions

Overall, the models revealed media ownership and joint ownership had a positive effect on team winning percentage with the former increasing wins by six and the latter increasing wins by two. Corporate ownership, on the other hand, had a negative effect on team winning percentage decreasing wins by three games. Media teams generate high amounts of revenue from television contracts. They, in turn, are able to attract talent by awarding large contracts. Playing for a media owned team also offers opportunities for player exposure beyond the baseball diamond. A player may use his communications experience and professional network to land broadcasting careers after he retires from baseball. Joint owners represent the perfect balance between passionate and profit-driven owners. The system of checks and balances associated with a joint ownership creates an environment of cooperation and collaborative decision-making to present a high quality ball team. On the other hand, a corporate ownership is too disconnected from the soul of the team and concerned with revenues and this hurts its winning percentage. Model 1 also highlighted a positive relationship between winning percentage and average salary.

The second model was unable to determine a timetable to observe the effects of an ownership change and provide details regarding the initial results determined by the first model. The coefficients on the change variables for a joint and media ownership suggest time is needed to recognize the effects of ownership changes. However, this is all the more Model 2 explains.

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WORK EXPERIENCE
Bank of America Career Services Center, University Park, PA   *January 2014-Present*
Peer Career Assistant
- Review resumes and cover letters with students
- Conduct and give feedback to students through a mock interview program
- Host information presentations for organizations regarding professional development
- Assist career counselors and staff in developing new student programming

Liberal Arts Career Enrichment Network, University Park, PA   *Sept.2013-May 2014, January 2015- Present*
Office Assistant
- Represented College at "Spend a Summer Day", "Fall Welcome", and other conferences and orientations
- Wrote blog posts and announcements for social media websites
- Interacted with students and answered general questions regarding professional development
- Assisted in developing student programming and career development opportunities
- Performed administrative duties including answering phones, managing websites, verifying appointments, and assisting office staff

St. Louis Cardinals Organization: State College Spikes, State College, PA   *May 2014-September 2014*
Promotions/Community Relations Intern
- Delegated tasks and managed responsibilities at customer service area
- Organized pre-game logistics, greeted fans, led promotions, and distributed tickets for home games
- Represented Minor League Baseball during game activities
- Served as mascot during games and community appearances

Florida State University College of Law Summer for Undergraduates, Tallahassee, FL   *May 2014-June 2014*
- Selected as one of sixty students to participate in a four-week academic, pre-law program
- Attended simulated first-year law classes, writing workshops, and participated in moot court oral arguments
- Visited law firms, area courts, including the Florida Supreme Court and Florida Capitol to meet with representatives in the legal profession across the various branches of government

Standard Bank, PaSB, Scottdale, PA   *June 2011-August 2011, May 2012-August 2012*
Intern
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- Performed administrative duties including answering phones, organizing paperwork, scheduling appointments, and assisting the manager, as needed

LEADERSHIP
College of the Liberal Arts Envoys-Communications Director   *January 2013-Present*
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