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The Effects of Players' Salary Level and a Salary Cap on the Revenue of Professional Soccer Teams in the United States and England

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The Effects of Players' Salary Level and a Salary Cap on the Revenue of Professional Soccer
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By

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I.   Abstract

This thesis serves as an examination of the relationship between players' salaries and teams' revenues for the American Major League Soccer and English Premier League. Historically, the salary cap imposed on teams playing in Major League Soccer has been heavily criticized of holding the league back. Comparisons have been made to leagues such as the English Premier League which assert that the limitation keeping Major League Soccer from attaining similar success is the presence of the salary cap. Data was gathered from the twenty teams in Major League Soccer and the twenty teams in the English Premier League for each of two seasons, those played in 2015 and 2016. A regression analysis was performed with a binary dummy variable which served to indicate the presence of a salary cap. At an α of .05, the presence of a salary cap was found to be statistically significantly related to the revenues earned by teams. Additionally, at an α of .05, there was strong evidence to indicate a relationship between total paid salaries and total revenues earned by teams. This study serves to show one viable path by which financially underperforming teams can begin to increase their revenue streams.

II.   Purpose

Major League Soccer, a professional Soccer organization in the United States of America, operates very differently from other soccer leagues around the world. Due to a combination of these different operational styles and a different value placed on the sport in the United States, Major League Soccer, or MLS, is not as successful as its international counterparts. One potential cause of this difference is a relatively strict wage cap that is placed

on teams by Major League Soccer. To determine whether this wage cap truly does influence the success of the teams, it is first important to determine whether these two factors are a relevant point of comparison. To do this, I will use data from prominent sources describing the per-team total player compensation and the per-team revenues from 2016. I will examine whether there is a statistically similar correlation between total compensation and revenue for the teams of the two leagues. These results will allow me to determine whether further studies should be performed using this data as a reasonable metric in order to examine the effect of the salary cap on Major League Soccer.

III. Background

Soccer in its modern form was created in England in the late-19th century, and so it has always had a rich tradition and a prestigious level of competition in the country. Although various leagues and competitions have been established and terminated since the first formal league in 1888 (Butler, 1998), the modern iteration, the Premier League, was founded in 1992, with competition beginning in August of that year (The Premier League, 2018). As English soccer has increased in global exposure and broadcasting deals have become more lucrative, the revenue of the Premier League has increased dramatically.
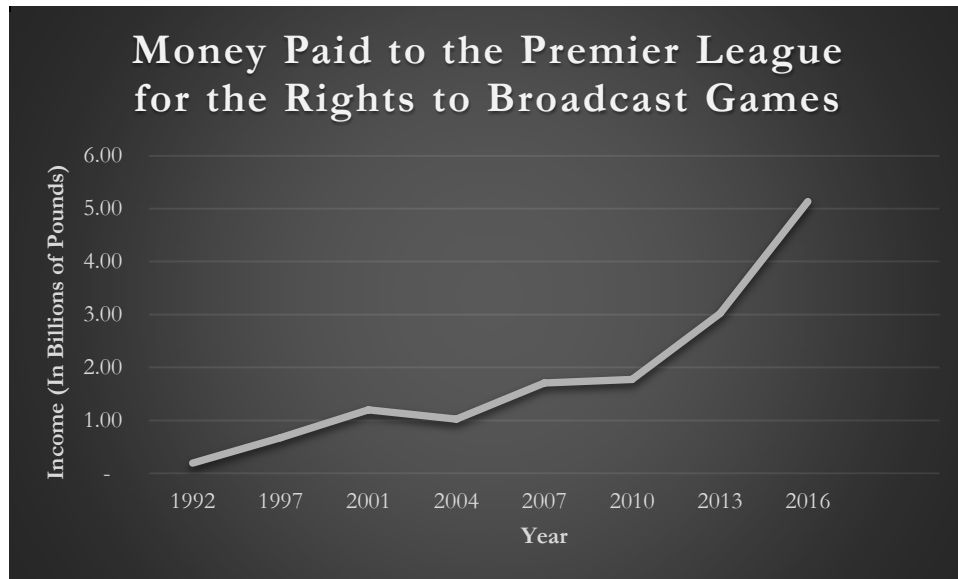
Figure 1 (BBC Football, 2015)

Figure 1 demonstrates how simply the broadcasting rights for live matches alone has increased more than twenty-five times over the course of the twenty-eight years of the League's existence. Even more astounding is an examination of the annual income for the Premier League for simply one year. For example, in an article written by Bill Wilson, a journalist who commonly covers money and entertainment, including sports, an analysis shows that the Premier League made more than £3.5 billion altogether in 2015, the year before the most recent and lucrative broadcasting deal began (Wilson, 2017).

One large component of the massive success of the Premier League is a greater demand by its viewers for legitimate and skilled stars. Teams which have some of the most popular players are often more successful, both on the field and in their marketing and sales efforts. This is again demonstrated by the income figures from the 2015-2016 season. In his coverage of the reported net income of the Premier League in 2015, reporter David Conn points out that the most profitable teams are Manchester United and Manchester City, who are perennially star-studded,

and, consequently, very well-liked (Conn D. , 2017). Manchester United alone accounted for £515 million in income. Having players of the caliber which attracts fans is a very expensive endeavor, however. Wages of the "top six," or six most popular and successful clubs in England in 2016 ranged from Tottenham Hotspur's £100 million to Manchester United's £232 million. Overall, total league salaries amounted to about £2.25 billion dollars, or about 62% of the total league income for the year (Conn D. , 2017). The mean salary for Premier League teams in 2016 was $3.2 million, with a median of $2.4 million. However, that does not fully show the extent of the high pay situation, since four teams' means were above this number, while the highest mean pay, that of Manchester United, was $5.77 million (Harris, 2016).

Many American sports fans are familiar with the concept of a salary cap, or a limit to the total wages paid to players by individual sports teams. Salary caps were first introduced to American professional sports when the National Basketball Association instituted a cap in the 1980's, followed by the National Hockey League in the 1990's and the National Football League in the 2000's. These caps were instituted, conceivably, to perform two functions. First, they were meant to ensure that owners did not create unsustainable business models for their teams by increasing salaries to such high levels that the teams' revenues could not compensate, which would lead to the teams' subsequent bankruptcy. Second, they were instituted to ensure more competitive parity between teams which could afford higher wage bills and teams who were working with more of a budget (Totty & Owens, 2011). Although there is a dispute over whether this second goal is often proven in practice, salary caps have persisted through time in professional sports and have spread to Europe, Australia, and Asia.

In the English Premier League, salary caps are very minimalist. Very little is done to curb substantial wage bills by high-earning and high-performing teams. Nonetheless, technically a "salary cap" does exist. It is unsubstantial to the point that most teams hardly notice its presence in their daily activity and feel no pressure by its existence. That means that, for all intents and purposes, the English Premier League salary system operates unchecked, without a meaningful salary cap.

The American Major League Soccer began its play in 1996 as the first large-scale soccer league in the United States and Canada. It began with ten teams divided across two divisions and introduced a relatively unique (for professional soccer) method of determining its champion, via a playoff system (MLS Communications, 2017). The ten teams were closely managed by the league itself, and the league understood that the entertainment landscape in America was not as open for soccer as it was in other nations. This evidence presented itself most in the fact that, over the first five years of its existence, Major League Soccer lost around $250 million total (Eligon, 2005). This led to a mindset of frugality in the league, and one of the main aspects of this frugality was, and still is, very carefully monitored wage bills. Additionally, there is a reputation among owners in Major League Soccer that owning a team is a safe and relatively low-cost investment. The consensus is that:

> Most [Major League Soccer] owners got into the game because it was a safe investment. There are clear exceptions, but not many. Between the growth of Soccer United Marketing, [Major League Soccer] expansion fees, sponsorships, and various other means of generating income, [Major League Soccer] clubs increase in value without

putting much money into them, which is what makes them an attractive business proposition to many owners (McCauley, 2018).

This mindset has led to a much more frugal approach to wages. In the same article, McCauley indicates that it is highly likely that, due to the volatile nature of athletes' performance, the more conservative-minded owners of Major League Soccer teams are unsure of their future performances and are unwilling to make too large of an investment unless they can easily be reimbursed (McCauley, 2018).

The same article indicates that, while global wages tend to stay around 44% of revenue for individual teams, with some teams spending as high as 60%, Major League Soccer has very few teams who even manage to reach that average (McCauley, 2018). Instead, based on wage and revenue figures from the 2015 and 2016 seasons, the league average percentage is somewhere closer to 27%. Looking at raw data, it is not hard to believe that Major League Soccer teams pay their players around 17% less than the worldwide average, relative to revenue. Individual teams' salaries are indicative of this as well. The team with the highest average pay per player in 2016 was New York City FC, with an average pay of about $820,000, while the lowest average paying team, FC Dallas, only had an average per-player wage of just over $150,000 (Harris, 2016). Additionally, New York City FC's data could potentially be skewed, as the team boasted some of the highest paid individual players in Major League Soccer in 2016 with three players being paid between $5.5 and $6 million (Major League Soccer Player's Association, 2016). An even more indicative fact is that, "some [soccer] teams in the world, like Manchester United, pay more in wages by themselves than the entirety of [Major League Soccer] combined" (Harris, 2016, p. 44).

Although the thrifty mindset common amongst team owners may be Major League Soccer is partially to blame for the low wages, a far greater part of the blame falls on the salary cap imposed by the league (McCauley, 2018). This salary cap has a reputation of being very complex and restrictive. The rules are as follows:

First, a team may be comprised of no more than thirty players, with eighteen of these being eligible to be named to the gameday team. The twenty of these players who are the most likely to play (the "first twenty") are counted towards the salary cap. The total allowed salary budget for the first twenty is limited to $4.035 million, a number that many international clubs would balk at and consider to be untenably low. Furthermore, an individual player on the roster may be paid no more than $504,375, with some exceptions.

The ten players who do not fall into the first twenty do not count towards this cap but must also be paid the league-wide minimum salary, $67,500. This minimum also applies to the first twenty. Additionally, certain players, called homegrown players, who are players who have played with the club's youth academy for at least one year, may be paid up to $125,000 without it counting towards the cap.

Each team is apportioned a part of the league's overall budget which it may additionally use to decrease its salary expenditures. The first type of this apportionment is called General Allocation Money. Each team is given a base level of $200,000 each year, which it may use or trade away. This money may be applied toward the salary of any player to reduce the total team salaries to beneath the salary cap. However, this may not offset more than 50% of the player's total salary. This money can additionally be used to pay for 100% of loans of players or the fees to transfer players. The second type of apportioned money is called Targeted Allocation Money.

At a balance of $1.2 million per year, these funds are meant to be used by clubs only for players' salaries. Clubs may also use an additional $2.8 million of their own funds as Targeted Allocation Money should they choose. Targeted Allocation Money is only eligible for use in the reduction of the total salaries of a player counting towards the salary cap. These may be used to convert a designated player into a regular player.

The final rule is regarding these designated players. Designated players are players whose salaries exceeding $504,375 are not considered as part of the salary cap. Their remaining salaries are considered as part of the salary cap. Each team may have three designated players, and if a player is paid down from being in designated player status using General or Targeted Allocation Money, the team must then designate a new designated player (MLS Communications, 2017).

These rules are generally considered to be excessively complicated and restrictive and are therefore very unpopular. In the 2017 edition of "MLS Confidential," an anonymous survey of almost all players in Major League Soccer, 79% of all respondents replied that they were dissatisfied with the current salary structure. One player said, "It's tough to ask guys in big cities to really feel like they're professional soccer players on the salaries they're on" (ESPN Staff, 2017, p. 1). Additionally, there have been suggestions that these limitations on salaries have limited the "star potential" of players who might play in Major League Soccer, and therefore decrease potential revenues. For that reason, this study will seek to examine the relationship between salaries, the presence of a salary cap, and team revenues for both Major League Soccer and the English Premier League.

IV.   Research Question and Hypotheses

Is there evidence to support a relationship between the presence of a salary cap for professional soccer teams and total revenues for the teams?

H_0: At an α of .05, if the p-value is greater than or equal to α, there is not significant evidence to indicate that the presence of a salary cap has an impact on the revenues of soccer teams in Major League Soccer and the English Premier League.

H_A: At an α of .05, if the p-value is less than α, there is significant evidence to indicate that the presence of a salary cap has an impact on the revenues of soccer teams in Major League Soccer and the English Premier League.

Is there evidence to indicate that there is a relationship between salaries paid to teams and revenues earned by teams?

H_0: At an α of .05, if the p-value is greater than or equal to α, there is not significant evidence to indicate that there is a relationship between salaries and revenues for teams in Major League Soccer and the English Premier League.

H_A: At an α of .05, if the p-value is less than α, there is significant evidence to indicate that there is a relationship between salaries and revenues for teams in Major League Soccer and the English Premier League.

V.   Methodology

Data was collected for each of the twenty teams in each of two subsequent seasons. Sources for the data from Major League Soccer included both the salaries which are publicly published by Major League Soccer Players' Association and the revenues which are published annually by Forbes. Sources for the data from the English Premier League included a report published annually by Deloitte called Football Money League and data compiled from Companies House, the official register of companies for the United Kingdom. For Major League Soccer, whose seasons follow a calendar year, these seasons were 2015 and 2016. For the English Premier League, whose seasons take place from August of one year until May of the following year, these seasons were the 2014-2015 season and the 2015-2016 season. Each team was treated as a unique entity for each year, regardless of whether the same team was represented twice over the course of two seasons. This method yielded forty unique pairings of total team salaries and total team revenues for each of Major League Soccer and the English Premier League.

In order for the data to be better comparable, the values from the English Premier League, which were produced initially in Great Britain Pounds (GBP), were then converted into United States Dollars (USD) using the exchange rate retrieved from the Wall Street Journal from Friday, December 30, 2016 (Market Data Center, 2016). This rate was equal to 1.2345 GBP to 1 USD.

The data was then combined into one large spreadsheet, where a third "dummy" variable was added, a binary value where a value of "1" indicated the presence of a salary cap for any team in Major League Soccer, while a value of "0" indicated a lack of a salary cap for any team

in the English Premier League. A regression analysis was then performed to determine the total

model correlation and the p-values for both the "dummy" variables. The results of the regression

analysis will be presented as a linear formula, $R_i = \alpha + \beta_1 x_{1i} + \beta_2 x_{2i}$ where R_i is equivalent to the

predicted revenue, β_1 is equivalent to the coefficient associated with the salary cap dummy

variable, and β_2 is equivalent to the coefficient associated with the salary for each team. This

model will only hold true should each individual coefficient yield a p-value of less than or equal

to .05.

The purpose of this study is to examine whether the presence of a salary cap has a

statistically significant effect on the total revenues earned by teams over the course of the study's

scope. If the salary cap does influence the total revenues of teams, then it will have a negative

coefficient associated with it. This will indicate that the presence of a salary cap decreases the

total revenues a team should expect. The total salaries of teams are included in this study in case

the salary cap does not have a statistically significant association with revenue. If that is the case,

there is still the possibility that there will be a statistically significant relationship between total

salaries and total revenues, which would also demonstrate, in a way, that the presence of a salary

cap is damaging, since teams who pay their players more could potentially earn more revenue.

Another purpose of this study is to examine the correlation between the total salaries paid

by teams as the independent variable and the total revenues earned by teams as the dependent

variable. If the p-value associated with the total salaries will be less than the α of .05. If total

salaries positively effect total revenues, there will be a positive coefficient associated with total

salaries. This would indicate that there is likely to be a positive effect on total revenues derived

from the increase of total salaries.

There are several other variables which would affect revenue which are not included in this study; however, the scope of this study cannot be unlimited and so the use of the same two leagues and the same number of teams from each league serves to mitigate and keep constant as many of these other variables as is possible (Totty & Owens, 2011).

VI. Results

Figure 2

Figure 2 shows the relationship between the compensation (salaries) and revenue for the English Premier League teams for the two seasons examined in this study. Additionally, a regression line with the formula $y=30,023,833.65+0.4838x_1+0x_2$ is included, where x_1 is the revenue variable and x_2 is the "dummy" variable. While there are clearly two separate groups, generally most values fall very closely to the trendline.
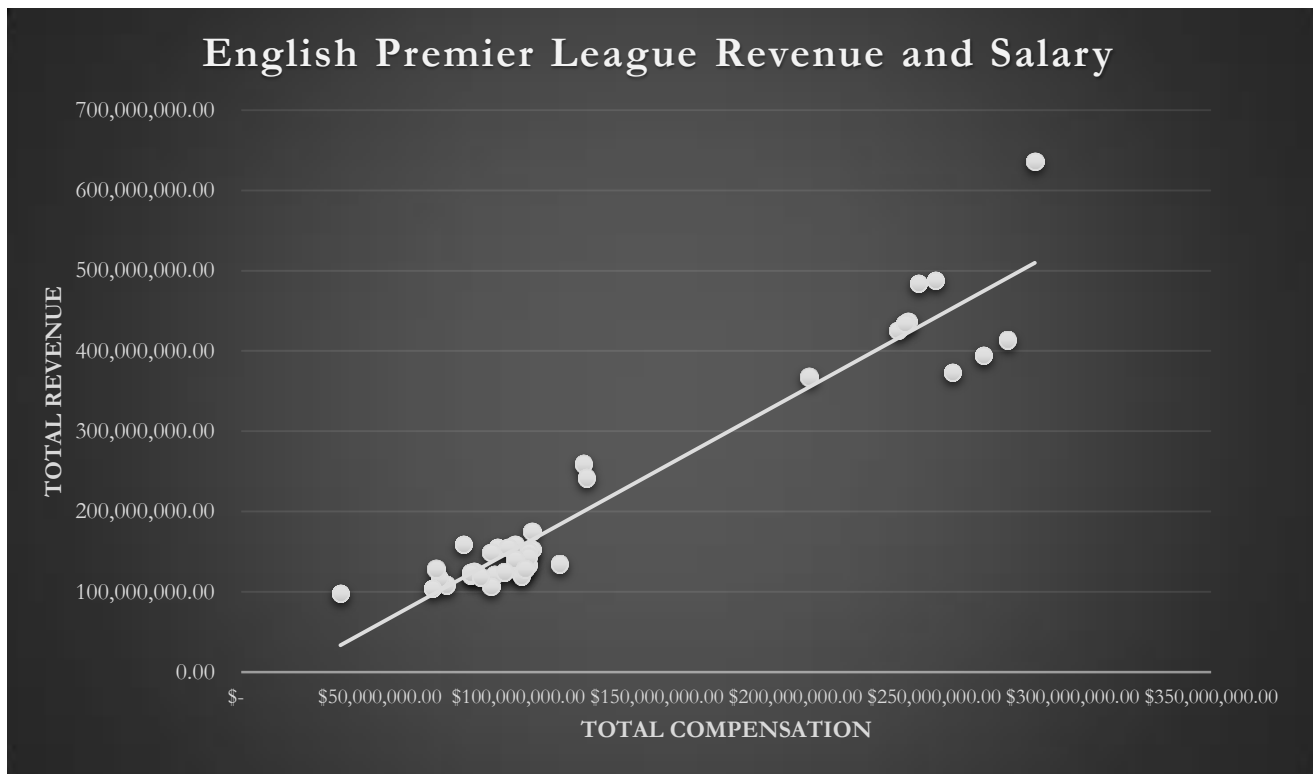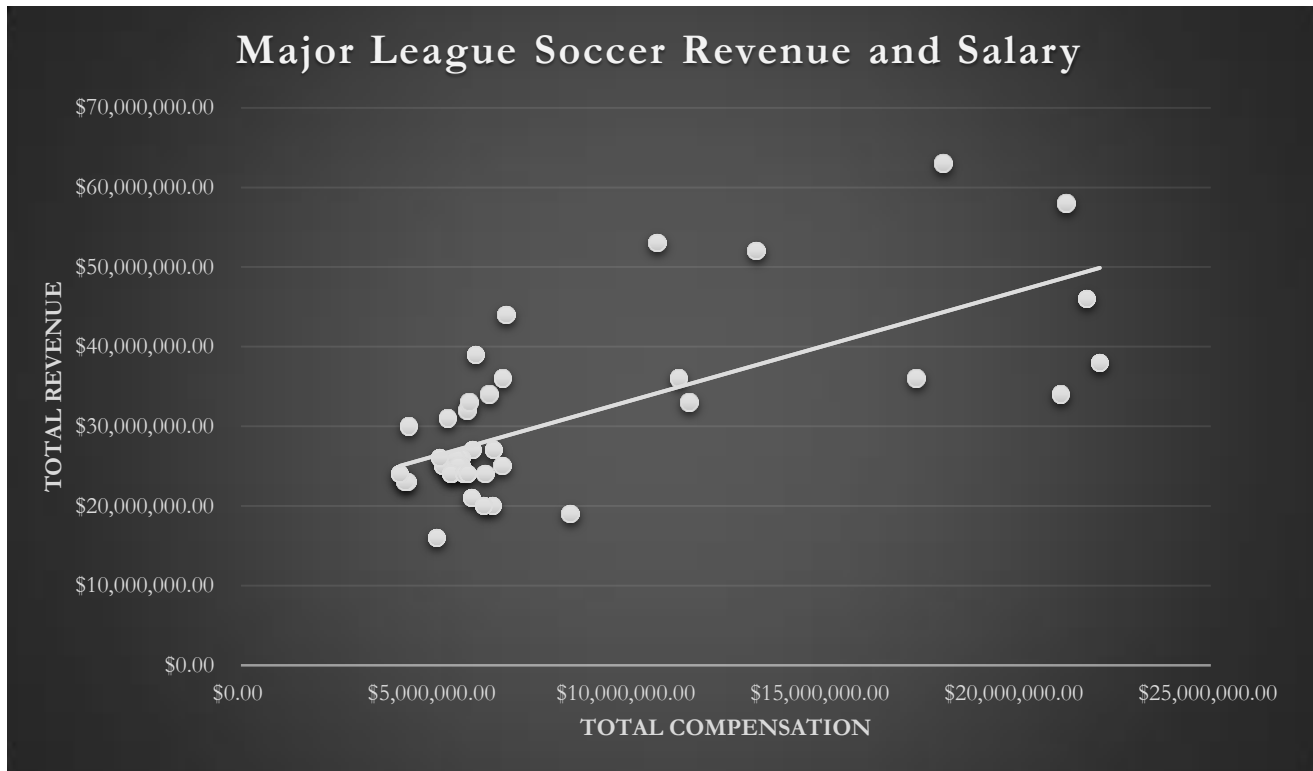
Figure 3

Figure 3 shows the relationship between the compensation (salaries) and revenue for the Major League Soccer teams for the two seasons examined in this study. Additionally, a regression line with the formula $y = -2,035,042.75 + 0.3396x_1 + 0x_2$ is included, where x_1 represents the revenue and x_2 represents the "dummy" variable. While this data generally follows the trendline, it is relatively much more scattered than the data from the English Premier League.

Measure	English Premier League	Major League Soccer
Team Salary Mean	132,091,500	8,544,516
Team Salary Median	101,229,000	6,016,873
Team Salary Range	250,603,500	18,038,220
Team Salary Standard Deviation	71,749,837	5,429,265
Revenue Mean	216,531,300	31,150,000

Revenue Median	146,288,250	26,500,000
Revenue Range	538,242,000	47,000,000
Revenue Standard Deviation	142,235,149	10,944,030
Coefficient of Correlation	0.9591	0.6846

Figure 4

Figure 4 shows the statistical descriptive data for the two sets of data, with measures of

central tendency and spread for each of the salaries and revenues. Both the salary and revenue

numbers for the English Premier League are significantly higher than those of Major League

Soccer.

Regression Statistics	
Multiple R	0.9775
R Square	0.9554
Adjusted R Square	0.9543
Standard Error	29,284,542.2903
Observations	80

Figure 5

Figure 5 shows the regression statistics derived from the analysis of all the data when

combined, including the binary variable indicating the presence of a salary cap. The multiple

correlation coefficient of .9775 indicates an overall extremely strong relationship between the

variables.

	Intercept	Cap Variable	Total Compensation
Coefficients	-34,218,189.9419	49,148,123.1837	1.8983
Standard Error	9,774,631.7507	10,378,155.0075	0.0652
t Stat	-3.5007	4.7357	29.1286
P-value	0.0008	0.0000	0.0000

Figure 6

Figure 6 shows the regression analysis output for the data. The p-value for both the cap variable and the p-value for the total compensation variable are significant even at the α level of .001.

VII. Discussion and Limitations

Based upon the regression analysis performed on the combined data, the binary variable associated with the salary cap had an associated p-value of almost zero. At the α level of .05, there is enough evidence from this study to reject the null hypothesis that there is not a relationship between the presence of a salary cap and the total revenues earned by a team. Based on this examination, it seems that there is adequate evidence to prove that there is a relationship between salary caps and revenue. This is very indicative of the limitation placed on teams' revenues by the salary cap having been imposed. The limitation on salaries paid to players is likely to prevent high-level players from playing in Major League Soccer, which discourages fans from attending games. Additionally, when players become more and more entertaining in Major League Soccer, they are prone to move to leagues in Europe, Asia, or elsewhere in the world, where they feel that they can be paid a higher wage. This prevents continuity for teams with the top tier of players, since they move away once they become attractive enough to begin to single-handedly draw fans.

This was supported by a strong relationship between total salary and total revenue. With a p-value which was infinitesimally small, it is clear that there is a relationship between the two. This relationship is not proven to be a causal one and is more likely one of bilateral causation. It is reasonable to assume that paying players high salaries would cause revenues to increase, since

the players who are paid high salaries are more likely to be the ones who are more entertaining and well-known, drawing larger crowds. On the other hand, though, it is also reasonable to assume that the teams who can pay players higher salaries are those who earn higher revenues. By this logic, the independent variable would shift from being the total salaries to be the total revenues, while the dependent variable would make the reverse shift. It is more likely that the independent variable is the salary, however, because of the concept of sustained revenue streams. This concept implies that a team which is successful will earn higher revenues as more fans become interested in their events. The successful team then can invest further in its team and its success, which then continues to encourage fans to attend events and furthers the cycle. This would describe exactly the phenomenon occurring here and would support the idea that higher salaries cause higher revenues, rather than the reverse.

There are several limitations to this study. First, the teams studied only come from two leagues over the course of two years. While the number of teams in the sample (80 total, or 40 per data set) is statistically significant, there is still the possibility that the results of this study were somehow influenced by the leagues or years chosen. In order to be fully confident about these results, the study would have to be performed on a larger data set with teams from more diverse leagues.

Another limitation of this study is that, while the data come from very reputable sources, they are still third-party sources rather than the teams themselves, leading to the possibility of error in communication. This can be solved by requesting data from the teams directly, although it would be more difficult to convince the teams to give up their financial data willingly a student rather than to than to give it to a well-known accounting firm or players' association.

Another limitation of this study derives from the difference in cultures and currencies between the two data sets studied. While Major League Soccer has grown heavily in the last few years in the United States, it will likely still never have a similar position as professional football, hockey, or baseball in the United States, nor the English Premier League in England. Because of this, there is not likely to be a similar revenue stream paid to Major League Soccer as the English Premier League at any time, since there is much more competition for sports fans' attentions in the United States. That limits this study's ability to examine the objective effect of a salary cap on revenues, since revenues are artificially decreased in America as compared to the rest of the world. This limit can be corrected in the future by using other leagues from other countries in order to corroborate the data derived here, although it is unlikely that any other league will have a salary cap as restrictive as Major League Soccer. The currency difference between England and the United States also provides a limitation. While the Wall Street Journal is very reputable, currency exchange rates at a given time are relatively subjective and the difference between listed exchange rates between multiple difference services could lead to an effect on this study. This limitation could be corrected by taking multiple exchange rates and comparing their effect on this study, or else taking an average of the listed exchange rates and using it as the rate for this study.

VIII. Conclusion

This study demonstrates that there is likely to be a statistically significant relationship between the presence of a salary cap and the revenues of professional soccer teams, as well as a statistically significant relationship between the salaries paid to the players of a team and that team's revenues. The results of this study are very indicative that one way for teams in relatively

lower-revenue leagues, such as Major League Soccer, to increase their revenues is by increasing

the salaries paid to their players. Furthermore, the results of this study indicate that the salary cap

imposed by Major League Soccer is, in fact, likely to be limiting the revenues earned by teams in

the league. If teams wish to increase their revenues in the future, one of the best ways that they

could do this is by paying their players more. This is also supported by the r-value. It is rare to

see such a strong correlation between two values in such a "real-world" situation, so there can be

little doubt that, should teams choose to increase their pay, higher revenues are likely to follow.

IX. Bibliography

BBC Football. (2015, February 10). *Premier League TV rights: Sky and BT pay £5.1bn for live games.* Retrieved from BBC Sport: http://www.bbc.com/sport/football/31357409

Boniface, D. (2016, May 19). MLS player salaries 2016 released by Major League Soccer Players Union. *The Denver Post.*

Boor, S., Green, M., Hanson, C., & Winn, C. (2017). *Football Money League.* Deloitte, Sports Business Group. London: Deloitte. Retrieved January 17, 2017

Butler, B. (1998). *100 Seasons of League Football: An Illustrated History.* London: Virgin Books.

Conn, D. (2016, May 25). Premier League finances: the full club-by-club breakdown and verdict. *The Guardian.*

Conn, D. (2017, May 31). Premier League clubs bank record income of £3.65bn – a £200m increase. *The Guardian.*

Conn, D. (2017, June 1). Premier League finances: the full club-by-club breakdown and verdict. *The Guardian.*

Eligon, J. (2005, November 11). For M.L.S., the Sport's Future Is in the Eye of the Beholder. *The New York Times.*

ESPN Staff. (2017). *MLS Confidential: Players polled on pro/rel, Beckham Miami team, salaries, Donovan return, Giovinco snub, more.* New York: ESPN.

Forbes Corporate Communication. (2016, September 7). Forbes Releases 2016 MLS Team Valuations. *Forbes.*

Harris, N. (2016). *Global Sports Salaries Survey 2016*. London: Sporting Intelligence.

Major League Soccer Player's Association. (2016, September 16). *Salary Reports*. Retrieved from

   MLSPA: https://mlsplayers.org/salary-guide/

Market Data Center. (2016). *Exchange Rates: New York Closing Snapshot*. New York: The Wall Street

   Journal.

McCauley, K. (2018, January 22). Atlanta United's ambitious signing of Ezequiel Barco will only

   matter if other MLS clubs step up too. *SB Nation*.

MLS Communications. (2017, January 1). *MLS History*. Retrieved from Major League Soccer:

   https://www.mlssoccer.com/league/history

MLS Communications. (2017, February 1). *MLS Roster Rules and Regulations*. Retrieved from Major

   League Soccer: https://www.mlssoccer.com/league/official-rules/mls-roster-rules-and-

   regulations

Sale, C. (2016, March 24). Premier League to continue 'salary caps' for next three seasons but mild

   restrictions won't hit high earners at top clubs. *Daily Mail*.

Smith, C. (2017, August). *Major League Soccer teams ranked by revenue in 2016 (in million U.S. dollars)*.

   Retrieved from Statista: https://www.statista.com/statistics/477857/team-revenue-of-mls-

   soccer-teams/

Smith, C. (2017, August 16). Major League Soccer's Most Valuable Teams. *Forbes Magazine*.

The Premier League. (2018). *History*. Retrieved from Premier League:

   https://www.premierleague.com/history

Totty, E. S., & Owens, M. F. (2011). Salary Caps and Competitive Balance in Professional Sports

      Leagues. *Journal for Economic Educators, 11*(2), 46-56.

Wilson, B. (2017, July 12). Premier League kicks on to record revenues of £3.6bn. *BBC.*