

Fall 2013

# Economic Effects of Successful Sports Franchises on Local Economies

Joshua Goodrich  
jpv53@wildcats.unh.edu

Follow this and additional works at: <https://scholars.unh.edu/honors>

 Part of the [Growth and Development Commons](#), [Labor Economics Commons](#), and the [Other Economics Commons](#)

---

## Recommended Citation

Goodrich, Joshua, "Economic Effects of Successful Sports Franchises on Local Economies" (2013). *Honors Theses and Capstones*. 154.  
<https://scholars.unh.edu/honors/154>

This Senior Honors Thesis is brought to you for free and open access by the Student Scholarship at University of New Hampshire Scholars' Repository. It has been accepted for inclusion in Honors Theses and Capstones by an authorized administrator of University of New Hampshire Scholars' Repository. For more information, please contact [nicole.hentz@unh.edu](mailto:nicole.hentz@unh.edu).

# The Economic Effects of Successful Sports Franchises on Local Economies

Joshua Goodrich\*

Advisor: Aziz Saglam

*The University of New Hampshire*

12/8/13

*Abstract:* This paper analyzes the effect of a major professional sports franchise winning a championship and the resulting effect on per-capita GDP at a metropolitan level. My key conjectures are (i) winning games will result in an increase in per-capita GDP for the local region and (ii) sports franchises winning a championship will increase per-capita GDP. Considering many of these sports franchises are located within very large metropolitan areas, it may be difficult to isolate a team's performance within the greater economy. However, sports franchises have become significantly more valuable in the past 20 years, so their increased value and postseason success may create a significant economic ripple. The seasons in these leagues extend for at least half a year, so the potential for economic impact is significant.

"Baseball is an allegorical play about America, a poetic, complex, and subtle play of courage, fear, good luck, mistakes, patience about fate, and sober self-esteem."- Saul Steinberg

*Keywords:* Professional Sports, Success, Wins, Championships

*JEL Classification:* L83

---

\*Please address all correspondence to Joshua Goodrich – The University of New Hampshire, Peter T. Paul School of Business and Economics, NH 03824; Phone: 603-667-8507; Email: jpv53@wildcats.unh.edu

# 1. Introduction

Professional sports in the United States are a major industry and a significant part of our culture. The minute doings of players, coaches and franchises are discussed on TV, at work, at home and nearly everywhere else. Game days are holidays and winning championships are cherished moments in fan's lives. This passion for the game as well as the enormous increase in revenues, team values, salaries and overall spending on these sports in the past 20 years have made these sports franchises into economic powerhouses, reaching far beyond the fields, rinks and courts.

Cities spend significant sums of money to lure existing franchises or to let existing leagues let a team find a new home in the city, as it is a mark of prestige and a way for local citizens to find camaraderie and pride. A prime example of this is that out of the 122 professional sports franchises that comprise the four major sports leagues, 13 franchises play in 11 stadiums that have been built earlier than 1970. It should also be noted that all of those stadiums that have been built before that time period have had significant renovations made to them since their building. These huge sums of money, much of it public, are spent with the expectation of a significant increase in economic activity, especially with just the existence of the sports franchises. The table below illustrates the sizeable revenues that each league generates. This is

League	2012 Revenues	Attendance	Attendance per Game
MLB	\$6.8 Billion	74,859,268	30,806
NFL	\$8.8 Billion	12,758,849	49,839
NBA	\$3.7 Billion	17,100,861	17,274
NHL	\$3.4 Billion	17,178,573	23,859

meant to illustrate that individual franchises could potentially have an economic impact on their communities and that it is understandable that communities would be willing to spend significant sums of money to attract and keep teams within these leagues.

Prior to analyzing the economic impact of the franchises in the major sports leagues, the cities in which these teams play. Interestingly, the average per capita incomes of the 42 different Metropolitan Statistical Areas (MSA's) as part of the study have a lower per capita GDP than the country as a whole. According to data from the FRED, the average per capita GDP of the MSA's is \$44,809 whereas countrywide per capita GDP is \$48,202. These numbers are current as of 2011 and while a cursory glance at these numbers would suggest that the cities that play host to professional sports franchises are at least a decent representation of the country, descriptive statistics support that notion, and they show that there are a significant amount of cities that have a low per capita GDP as well as a number of cities with high per capita GDP. The median of the 2011 per capita real GDP numbers across the MSA's is \$42,968, which is not all that surprising, since there are a lot of cities with low per capita GDP like the Rust Belt and parts of the South and Southwest. However, just because there is a number of lower income cities included in this study does not mean that there is a dearth of wealthier cities. The Silicon Valley cities, New York City and Boston are examples of some of the MSA's with the highest per capita GDP in the country and all of these locales have multiple teams across all four leagues. This collection of cities play host to nearly every major industry, ethnic group, religion, political belief and climate this country has to offer and while economists may strive to capture the effect that these franchises have on various elements of the economy, no one can deny the parochial nature of these clubs and the distinctly American flavor of these leagues.

The inspiration of this paper is derived from the fact that major sports leagues have become an increasingly powerful economic instrument. Many people such as the author grew up watching sports, so it is a partly selfish endeavor to determine whether or not these clubs truly have an impact off the field. It is difficult to truly value franchises because they are private corporations in the U.S., but some papers have attempted to value them in various ways. Forbes does annual rankings of the most valuable franchises worldwide, but their methodology is not readily available and it is not oriented for the purposes of this paper. Humphreys and Mondello (2008) have noted that over their sampling period from 1970 to 2006, sports franchises appreciated 16% annually in value, compared to the typical 3% growth rate of the U.S. economy. Those authors used franchise sell prices and adjusted the sale prices among other factors to derive this information. This interesting way to value franchises underlies a key point that sport franchises are an extremely good investment and have been growing at a fairly consistent rate for multiple decades. The returns of the leagues have not been consistent by any means, but in recent years, this has been especially true. As an example, by the model of Humphreys and Modello, an average sports franchise worth \$5 million dollars in 1970 would be worth \$48 million in 2005, holding everything constant.

However, the goal of this paper is not to attempt to value franchises but to analyze their local economic impact in the cities in which they play. The previous data was used to highlight the tremendous economic weight many of these franchises now carry. Coates and Humphreys (2003) have already covered a similar subject, but constrained their analysis to wages of workers who were in related fields, such as various hospitality positions and related sports jobs. Coates and Humphreys found that the existence of sports teams in fact reduces overall wages earned by workers in related fields. This may be due to various economic reasons, but it should be noted

that they also concluded that reduced employment in the sectors they covered may have been in part to shifting spending patterns and not necessarily representative of the Metropolitan Statistical Area as a whole.

## **2. Data Sources, Key Variables and Conjectures**

This section reports the main sources of data used and the methodology of choosing the variables. This paper will utilize metropolitan statistical area (MSA) statistics to analyze time trend data gathered from the Bureau of Labor Statistics (BLS), the Federal Reserve Economic Database (FRED), MLB data is from [baseballreference.com](http://baseballreference.com), NFL data is from [pro-football-reference.com](http://pro-football-reference.com), NBA data is from [basketball-reference.com](http://basketball-reference.com) and NHL data is from [hockey-reference.com](http://hockey-reference.com). This paper will use employment data from the BLS, per capita income statistics from the FRED and wins, attendance and playoff appearances for the sports statistics. Playoff appearances and recession years will be considered as binary variables.

The data I will be using will be compiled from the American franchises in the four major leagues, Major League Baseball (MLB), the National Football League (NFL), the National Basketball Association (NBA) and the National Hockey Association (NHL). There are 29 MLB franchises, 32 NFL franchises, 29 NBA franchises and 23 NHL franchises that are located in the USA, which totals for 113 franchises over 42 different MSA's. This study will not consider data for Canadian cities because the FRED does not have data on those cities. There will be various different analyses that will be taken as a part of the overall study in an effort to determine whether or not various factors play a role in the economic importance of various franchises. These analyses will include MSA's that only have one franchise, a smaller scale analysis of the

best teams from each league, geographic location of the franchises, and franchises that have moved or have been created in the time period. The time period of the data will be from 1993 to 2011 and the methodology used to choose the best teams is by a weighted scoring of wins, playoff appearances and championships won and all but seven teams in the model won at least one championship over the 19 year span. It is also important to note that the NHL did not play in the 2004-2005 season, the MLB had a strike shortened season that resulted in no playoffs in 1994 and the NBA had a shortened season in 2011-2012.

My key conjectures as stated above are that a sports franchise winning a championship will result in a measurable economic impact on the local economy in which it plays. I will also analyze whether or not wins will have an effect as well as the relationships between per capita GDP and the LFPR, unemployment rate, total unemployment, total employment and recession years. Per capita GDP will be used instead of a broader measure like GDP because it gives a better sense of the economic well-being of an area. It is by no means a perfect statistic, but it captures what is happening at an MSA level better than straight GDP or GNP.

### **3. Data**

The regression model which I will be using is inspired from Lertwachara and Cochran (2007), but the author is focusing on the impact of teams winning championships rather than relocations or winning. This regression is focused on determining the MSA-level impact of winning championships. I will use three different variations on a similar model to see if there results in any change in the results. The main regression will be

$$\text{RPGDP}_{ij} = b_0 + \text{Urate}_j + \text{Wins}_j + \text{Champ}_j + \text{Rec}_j$$

Where

$RPGDP_{ij}$ =Change in Real GDP Per Capita for  $i^{th}$  MSA in year  $j$

$b_{0i}$ =Intercept for  $i^{th}$  MSA

Urate=Change in Unemployment Rate for MSA in year  $j$

Wins=Number of Wins in a season for  $i^{th}$  MSA in year  $j$

Champ= Championship win for  $i^{th}$  MSA in year  $j$

Rec=Recession Year for  $i^{th}$  MSA in year  $j$

The regression results for all teams and regressions by league are below. The first set of regressions using the unemployment rate variable is below and the rest of the regressions can be found at the end of this paper. This data is organized by the change in employment variable used in the multiple regression models, with the first series of regressions using the change in the LFPR, the second series using change in unemployment and the third series using the change in employment. The regression outputs below will comprise of the various regression statistics in a table as well as the table of the coefficients, standard error, t stat, p-value and the lower and upper 95% statistics.

The first series of data will be all of the franchises as part of the multiple regression model as well as the analysis carried out by league and the author will draw conclusions from the data below the data given.

<i>Regression Statistics</i>	
Multiple R	0.317265
R Square	0.100657
Adjusted R Square	0.098883
Standard Error	0.233056
Observations	2033

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.4344839	0.009399098	1110.158	0	10.416051	10.4529168
Unemployment Rate	0.002561644	0.000358841	7.138667	1.31E-12	0.0018579	0.00326538
Wins	0.000472873	0.00018304	2.583434	0.009852	0.0001139	0.00083184
Championship	0.002189937	0.027859715	0.078606	0.937354	-0.052447	0.05682658
Recession Year	0.074486416	0.020348296	3.660573	0.000258	0.0345807	0.11439216



<i>NFL Regression Statistics</i>	
Multiple R	0.307028
R Square	0.094266
Adjusted R Square	0.087976
Standard Error	0.236653
Observations	581

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.43773923	0.028823988	362.1199	0	10.3811263	10.494352
Unemployment Rate	0.002632422	0.00069488	3.788315	0.000168	0.00126762	0.0039972
Wins	0.001505812	0.003376411	0.44598	0.655779	-0.0051258	0.0081374
Championship	0.011737254	0.057007077	0.205891	0.836949	-0.1002298	0.1237043
Recession Year	0.070381205	0.039024624	1.803508	0.071831	-0.0062667	0.1470291

<i>NHL Regression Statistics</i>	
Multiple R	0.431016
R Square	0.185775
Adjusted R Square	0.177227
Standard Error	0.22107
Observations	386

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.1546112	0.050409696	201.4416	0	10.055495	10.253727
Unemployment Rate	0.00234631	0.000764892	3.067511	0.002313	0.0008424	0.0038503
Wins	0.00852789	0.001322838	6.446658	3.46E-10	0.0059269	0.0111289
Championship	-0.0820997	0.054696624	-1.501	0.134184	-0.189645	0.0254454
Recession Year	0.04964537	0.043344551	1.145366	0.252777	-0.035579	0.1348699

<i>NBA Regression Statistics</i>	
Multiple R	0.343355
R Square	0.117892
Adjusted R Square	0.11126
Standard Error	0.231587
Observations	537

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.5438889	0.032945321	320.0421	0	10.47917	10.608608
Unemployment Rate	0.00242231	0.000669232	3.619542	0.000323	0.0011077	0.003737
Wins	-0.0028483	0.000786702	-3.62056	0.000322	-0.0043937	-0.001303
Championship	-0.00207635	0.056038432	-0.03705	0.970457	-0.1121601	0.1080074
Recession Year	0.08677433	0.039240207	2.211363	0.027435	0.0096896	0.1638591

<i>MLB Regression Statistics</i>	
Multiple R	0.395414
R Square	0.156352
Adjusted R Square	0.149912
Standard Error	0.223692
Observations	529

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.1349106	0.063217318	160.3186	0	10.01072	10.259101
Unemployment Rate	0.00261354	0.000704428	3.710164	0.000229	0.0012297	0.0039974
Wins	0.00423982	0.000790045	5.366553	1.21E-07	0.0026878	0.0057919
Championship	0.01055907	0.0565446	0.186739	0.851938	-0.1005229	0.121641
Recession Year	0.07082988	0.038781109	1.826402	0.068359	-0.0053557	0.1470154

*\*The rest of the data done for all US teams and other regressions can be found at the end of the paper.*

## 4. Analysis

The P-values across all five regressions strongly show that championships have no impact on per capita GDP in the regions in which the franchises play. This is not entirely surprising; because the NFL does not usually have their championship played in the home city of one of the contestants and the playoff lead up to championships may be prolonged or may not

create much of an increase in economic activity. This is to say, that championships may not need to be considered as separate events but rather as a compilation of the regular season and the playoffs leading up to the championship. It is not surprising that the unemployment rate and recession year dummy variable had extremely low P-values, since it would make sense that per capita GDP, the unemployment rate and recessions are connected with one another. The most surprising result from this analysis is that the win variable has an extremely low P-value across all leagues except for the NFL. This is an interesting result, since every team in this study has had at least a few down seasons over the time period and most every team has had at least one successful season, except for the Kansas City Royals, the only team in this study that did not at least make the playoffs over the period of the study. The fact that wins and per capita GDP are correlated to some extent is very interesting, because it may create an effect in which more people will want to come into the city to watch games, which in turn will cause more local spending on various goods in the city. This study does not have the data to further investigate these results, but the first results from the regressions are very interesting because it lends credence to the notion of successful teams begetting successful cities or vice versa.

The regressions run using alternate labor variables all yielded similar results. The P-values for the labor statistics were generally below the alpha as were wins and the recession dummy variable. This correlation between wins and per capita GDP seems to hold some merit, but the goal of this paper is too broad to fully analyze the relationship between the two variables. However, the fact that these results have been seen across many different regressions, it does lead the author to believe there is at least some sort of correlation between winning and increasing per capita GDP.

Interestingly, when this analysis is carried out by region, the results seen in the previous breakdowns are no longer seen. The author divided the United States into four major regions, the Northeast, comprising New England, New York, Pennsylvania, Maryland and Washington D.C., the South, comprised of North Carolina, Georgia, Florida, Louisiana and Texas, the Midwest, with Indiana, Illinois, Michigan, Wisconsin, Minnesota and Missouri and lastly the West, with Colorado, Arizona, California, Oregon and Washington. These areas give a fairly decent divide of teams as well as data points, with the largest region being the Midwest with 531 seasons played and the lowest region being the South with 482 seasons. The most interesting result stemming from the regional breakdown is that wins are no longer a significant factor to per capita GDP growth in three regions. Except for in the Northeast, where the P-value was .04, the other regions had P-values for wins between .16 and .78. This seems to show that wins may not be a heavy contributor to per capita GDP growth, but the economic makeup of the regions may also be an answer to the different results.

The Rust Belt has seen slower growth in the past two decades or so relative to the United States as a whole, which may play a role in the lack of effect in that region. Also, outside of the Northeast, many of the franchises included within the South, Midwest and West regions were the MSA's with the lowest per capita GDP included in the study, so lower disposable income stemming from this fact may also play a factor. As a fan of East coast teams, there is a kind sentiment felt among fans in this region that outside of the Boston to Washington corridor, many sports fans are "fair-weather" fans, or that they have a lower level of involvement throughout the season. As an example, last season, the Miami Heat were coming off a championship from the season before and they were in the finals for the third year in a row, but in game six of the finals, facing elimination, many fans left early, only to miss their team come back. This anecdote is not

meant to insinuate that all fans outside of the Northeast are largely disinterested or that there are only committed fans in the Northeast, just that the passion fans have in the Northeast may help explain why it is the only place in the US that has its team's success tied in some part to its MSA's economy.

Lastly, this analysis will look at the best ten teams in each respective league over the time period of the study. The majority of these teams have won at least one championship over the time period and most teams have put in a considerable amount of winning seasons and playoff appearances over that time. Even teams that saw championship-level success earlier on in this study have still performed fairly well in more recent years, so it is not as though the teams only had success in the early 90's.

Utilizing the first table of league revenues from last year, it would seem that the higher the revenue in a respective league, the larger economic impact that league has in general upon the local economy. First, the author will note that the p-value for championships across all leagues is .6104 when unemployment rate is used as part of the multiple regression model. The r square value of .19 and adjusted r square of .18 all indicate that there is not any statistically significant relationship between winning championships and any significant economic impact. With the other regressions, the p-values for the championship are .6068 and .6572 respectively, also indicating that changing the measure of unemployment or employment does not really affect the analysis. Thus, the initial hypothesis that a team winning a championship has a measurable economic impact is false. There is nothing in the results that indicate that any of the results hold any merit, but there is more to the gather from the data rather than just looking at the championship variable.

It should be noted that whether the variable used was the change in the unemployment rate, total unemployment or total employment, the p-value for wins across all leagues was extremely low, well below .05 or even .01. Across the models, the largest p-value was still below .000002, which leads me to believe that there is a correlation between a team winning and local real GDP. The table below shows a regression output between just real GDP and wins and it

<i>Regression Statistics</i>	
Multiple R	0.1961788
R Square	0.0384861
Adjusted R Square	0.0367443
Standard Error	0.2368053
Observations	554

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.348101	0.026442876	391.338	0	10.29616	10.400042
Wins	0.0020367	0.000433301	4.700498	3.28E-06	0.0011856	0.0028878

shows that the p-value is still very low. My alpha is .05, so it seems to indicate that the correlation is there. It is interesting to note this correlation, because the data used is current, meaning real GDP data that is part of the analysis is from the same year as the wins. This could also be flawed because parts of the NBA and NHL seasons are in different years, but this study uses the starting year as the season year, so that may be affecting the validity of the data as well. However, both the MLB and NFL have full seasons in the same year, so the table below is the

<i>MLB/NFL Regression Statistics</i>	
Multiple R	0.092718
R Square	0.008597
Adjusted R Square	0.005953
Standard Error	0.253489
Observations	377

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.4709584	0.020291158	516.0355	0	10.43106	10.510857
Wins	0.00060183	0.000333747	1.803245	0.072152	-5.44E-05	0.0012581

same regression using only MLB and NFL teams. As the reader can see, the p-value for wins is .072, which is above the alpha of .05, so it would seem to indicate that the original analysis was wrong. However, it should be considered to adjust for a lagging correlation, so the next output is identical to the one above, except that the real GDP data will be offset a year to consider whether

or not the lagging correlation exists. As the regression output below shows, the p-value is .0848,

<i>Lagging Regression Statistics</i>	
Multiple R	0.09134074
R Square	0.00834313
Adjusted R Square	0.00554973
Standard Error	0.24107981
Observations	357

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.4947069	0.019825642	529.3502	0	10.455716	10.533697
Wins	0.0005651	0.000326985	1.728216	0.084819	-7.8E-05	0.0012082

which is still above the alpha of .05, so cursory analysis indicates that if this was expanded to other leagues, the results would not be much different. A problem within my data though could be that it is annual data only, so if it was extrapolated to monthly data, it may procure different results, but for the data in this analysis, what initially looked like positive results just turned out to be a null result that was disguised as something else amongst the other data.

It is interesting, albeit not very surprising, that the LFPR and employment variables had very low p-values. Except for when the regression included employment, the p-value for the labor force participation rate was extremely low, which is not entirely surprising, considering that key components of per capita GDP is tied within general employment numbers. The recession year variable also had significant p-values for each of the league-wide regression results. This is also not surprising, since when there is a recession, per capita GDP growth tends to be stagnant or even negative when there is a recession.

Through all the analyses, the P-value for the championship variable was well above the alpha in all cases. Whether it was overall, by league, by region, by better teams or by conference, it did not matter; championships alone did not produce any significant economic ripple in the economies of the various MSA's. However, much of the analysis does lead the author to believe that successful teams do play a positive role in their local economies to some degree. The data that suggested these results were preliminary and will need further investigation, but from the

regressions run for this paper, results do indicate that winning games throughout the season does indeed increase per capita GDP.

## **5. Conclusions**

Through the analysis, we must conclude that with the data gathered, that the hypothesis that championships and winning games affect per capita GDP at a local level is not true. None of the analysis suggests that there is a correlation between an individual team's success and how the regional economy does as a whole. Given that prior analysis on building stadiums and how they affect various factors all returning insignificant results, this result is not all that surprising. It could be that sports franchises do indeed have a tangible economic effect or even an intangible effect, but as far as this study goes, there is nothing to suggest that sports franchises create a significant impact on their fan base.

This continues to be an interesting topic to cover, especially given the fact that the overwhelming majority of venues in which these teams play are less than 40 years old and many of those fields were built using some measure of public money. Knowing that building new stadiums create little to no economic gains as well as existing teams not contributing significantly to local economies either, civic leaders may reconsider requisitioning public funds to help build new sports stadiums in the future.

The author will be the first to admit that there have been some assumptions made in this study and that it did not include every factor. There is big money to be made outside of what was considered, for example, television and ad revenues are extremely lucrative deals and owning

one of these franchises has given huge returns. However, no studies found by this author have procured results that stadiums and teams do indeed create significant economic gains.

Another point to be considered is whether the location of the stadium relative to the city core has an effect. Many of the teams located in the Northeast region studied in this paper have their stadiums located within the city limits of the MSA's studied. Though there are exceptions, venues like Yankee Stadium, Fenway Park and Madison Square Garden all are in the center of major economic activity and having venues like this in the Northeast region may explain part of the reason why it was the only region to produce a significant P-value for the win variable. It may be due to the land constraints in the Northeast as well, because locales outside of that region have significantly more land on which to build and many cities west of the Mississippi have developed a geographic mentality of building out, so stadiums located away from city cores may mitigate their overall economic impact on the MSA.

After this analysis, it is hard to imagine that these 4 leagues, grossing nearly \$23 billion a year, have little to no economic impact. It may be that these entities are spread across enough industries that they do not result in making economic waves among broader data, or that the economies in which they play are large enough that even a huge entity like a major professional sports franchise is hidden within the numbers. As an example, the New York Yankees are worth \$2.3 billion dollars a year. They are one of the most valuable sports franchises in the world according to rankings put out by Forbes, but they play in New York City. If New York City was a sovereign country, it would be the 15<sup>th</sup> largest economy in the world, at \$1.17 trillion. The Yankees are a minor drop in the collective bucket of the New York City economy and the franchise is dwarfed by the financial and real estate sectors within the city.



It is interesting to note that a successful, winning franchise does potentially play a role of increasing per capita GDP. This could play a role in franchises lobbying for public money to build new stadiums, because at some level, a franchise's success will improve the local economy. This could be a very persuasive argument because city officials would see the public money as a long term investment in their economy, but the overall effect of the impact is yet to be seen at a microeconomic level. As it was stated earlier, Coates and Humphreys (2005) found that building new stadiums hurt many of the local employment sectors related to building stadiums and the franchises being located in the city.

However, even if a sports franchise's success during the season or winning a championship does not result in measurable economic result, it does not take away from the passion and excitement that these leagues bring to its fans. There is a reason why television networks will pay billions of dollars to broadcast games in these leagues, because people will go to the games and people will watch them on television. Simply put, sports and professional sports are integral parts of American culture. There is no getting around it and even if there isn't a measurable economic impact, the effect on our culture, moods and wallets is tangible and it will continue to be that way for the foreseeable future.

## **6. Supplemental Data**

The regressions shown below comprise the majority of the data used in the paper to analyze the impact of the variables considered on per capita GDP. The data is organized in the order considered in the paper. The topic the regressions cover will be in bold and any supplemental information will be

provided above the regression outputs. The order in which the data appears is: every team with different labor statistics as variables, teams broken down by league and conference within the league, MSA's with one franchise, franchises that were created or moved, regional breakdowns of franchises and analysis of the best teams in each respective league.

## All teams, all leagues

With labor force participation rate as a variable

<i>Regression Statistics</i>	
Multiple R	0.333615
R Square	0.111299
Adjusted R Square	0.109546
Standard Error	0.231673
Observations	2033

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.45807669	0.009992028	1046.642	0	10.438481	10.477672
Labor Force	-0.0297011	0.00341018	-8.70954	6.21E-18	-0.036389	-0.023013
Wins	0.000460031	0.000181972	2.528035	0.011546	0.0001032	0.0008169
Championship	0.003166772	0.027695088	0.114344	0.908976	-0.051147	0.0574806
Recession Year	0.169886174	0.013903988	12.21852	3.52E-33	0.1426186	0.1971538

<i>NFL Regression Statistics</i>	
Multiple R	0.317512
R Square	0.100814
Adjusted R Square	0.094569
Standard Error	0.235796
Observations	581

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.4535067	0.029201004	357.9845	0	10.3961533	10.51086
Labor Force	-0.0265007	0.006136438	-4.31857	1.85E-05	-0.0385532	-0.014448
Wins	0.00204881	0.003365315	0.608803	0.542895	-0.004561	0.0086586
Championship	0.0041362	0.056775512	0.072852	0.941949	-0.1073761	0.1156485
Recession Year	0.1691329	0.026544708	6.371624	3.83E-10	0.11699668	0.2212691

<i>NHL Regression Statistics</i>	
Multiple R	0.412398
R Square	0.170072
Adjusted R Square	0.161359
Standard Error	0.223192
Observations	386

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.1578072	0.052191408	194.626	0	10.0551879	10.260426
Labor Force	-0.0118057	0.008300601	-1.42227	0.155767	-0.0281264	0.0045151
Wins	0.00855141	0.001339889	6.382179	5.07E-10	0.00591691	0.0111859
Championship	-0.0795679	0.055224607	-1.44081	0.150461	-0.1881511	0.0290152
Recession Year	0.14427587	0.029928809	4.820635	2.07E-06	0.08542955	0.2031222

<i>NBA Regression Statistics</i>	
Multiple R	0.402869
R Square	0.162303
Adjusted R Square	0.156005
Standard Error	0.225682
Observations	537

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.556948	0.032114063	328.7329	0	10.493862	10.620034
Labor Force	-0.0381513	0.005886889	-6.48073	2.08E-10	-0.0497157	-0.026587
Wins	-0.0021814	0.000767678	-2.84162	0.004661	-0.0036895	-0.000673
Championship	-0.0065721	0.054597272	-0.12037	0.904233	-0.1138248	0.1006806
Recession Year	0.1700834	0.026849675	6.334653	5.07E-10	0.117339	0.2228278

<i>MLB Regression Statistics</i>	
Multiple R	0.392717
R Square	0.154227
Adjusted R Square	0.147771
Standard Error	0.223974
Observations	529

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.13535638	0.063352497	159.9835	0	10.0109	10.2598125
Labor Force	-0.0263469	0.007477822	-3.52334	0.000463	-0.041037	-0.0116567
Wins	0.004437485	0.000788843	5.625311	3.02E-08	0.0028878	0.00598717
Championship	0.007328947	0.056593236	0.129502	0.89701	-0.103849	0.11850645
Recession Year	0.168491566	0.026532241	6.350446	4.66E-10	0.1163689	0.22061419

With unemployment as a variable

<i>Regression Statistics</i>	
Multiple R	0.31013
R Square	0.096181
Adjusted R Square	0.094398
Standard Error	0.233635
Observations	2033

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.4310751	0.009377483	1112.353	0	10.412685	10.4494656
Unemployment	0.00229994	0.000360672	6.376812	2.23E-10	0.0015926	0.00300726
Wins	0.0004777	0.000183489	2.603393	0.009298	0.0001178	0.00083754
Championship	0.0018887	0.027928809	0.067626	0.94609	-0.0528834	0.05666085
Recession Year	0.08567909	0.020383935	4.203266	2.75E-05	0.0457035	0.12565473

<i>NFL Regression Statistics</i>	
Multiple R	0.299747
R Square	0.089848
Adjusted R Square	0.083527
Standard Error	0.23723
Observations	581

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.4345737	0.028845567	361.7392	0	10.377918	10.491229
Unemployment	0.00236525	0.000697911	3.38905	0.000749	0.0009945	0.003736
Wins	0.00149347	0.003384727	0.441238	0.659206	-0.005154	0.0081414
Championship	0.01108243	0.057146085	0.193932	0.846298	-0.101158	0.1233225
Recession Year	0.08148851	0.039136314	2.082171	0.037768	0.0046212	0.1583558

<i>NHL Regression Statistics</i>	
Multiple R	0.429593
R Square	0.18455
Adjusted R Square	0.175989
Standard Error	0.221236
Observations	386

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.1503394	0.05034227	201.6266	0	10.051356	10.249323
Unemployment	0.00227147	0.0007647	2.970406	0.003162	0.0007679	0.003775
Wins	0.00857817	0.00132317	6.483046	2.79E-10	0.0059765	0.0111798
Championship	-0.081632	0.05473669	-1.49136	0.136695	-0.189256	0.0259918
Recession Year	0.05317564	0.043248012	1.229551	0.219624	-0.031859	0.1382103

<i>NBA Regression Statistics</i>	
Multiple R	0.343355
R Square	0.117892
Adjusted R Square	0.11126
Standard Error	0.231587
Observations	537

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.5438889	0.032945321	320.0421	0	10.47917	10.608608
Unemployment	0.00242231	0.000669232	3.619542	0.000323	0.0011077	0.003737
Wins	-0.0028483	0.000786702	-3.62056	0.000322	-0.004394	-0.001303
Championship	-0.0020763	0.056038432	-0.03705	0.970457	-0.11216	0.1080074
Recession Year	0.08677433	0.039240207	2.211363	0.027435	0.0096896	0.1638591

<i>MLB Regression Statistics</i>	
Multiple R	0.391713
R Square	0.153439
Adjusted R Square	0.146977
Standard Error	0.224078
Observations	529

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.131432	0.063273405	160.1215	0	10.007132	10.255733
Unemployment	0.0024506	0.000709957	3.451773	0.000602	0.0010559	0.0038453
Wins	0.0042492	0.000791529	5.368388	1.2E-07	0.0026943	0.0058042
Championship	0.0096135	0.056637767	0.169737	0.865283	-0.1016515	0.1208785
Recession Year	0.0777588	0.038899017	1.998991	0.046125	0.0013416	0.1541759

With employment as a variable

<i>Regression Statistics</i>	
Multiple R	0.35726
R Square	0.127634
Adjusted R Square	0.125914
Standard Error	0.229534
Observations	2033

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.466437	0.009938908	1053.077	0	10.446945	10.485928
Employment	-0.0300336	0.002797591	-10.7355	3.45E-26	-0.03552	-0.024547
Wins	0.0004401	0.00018032	2.44043	0.014755	8.643E-05	0.0007937
Championship	0.003964	0.027439583	0.144461	0.885151	-0.049849	0.0577767
Recession Year	0.104374	0.015441017	6.75953	1.8E-11	0.0740921	0.1346559

<i>NFL Regression Statistics</i>	
Multiple R	0.341362
R Square	0.116528
Adjusted R Square	0.110393
Standard Error	0.233727
Observations	581

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.46090506	0.028994885	360.7845	0	10.40396	10.517854
Employment	-0.02832917	0.005240095	-5.40623	9.44E-08	-0.038621	-0.018037
Wins	0.002168067	0.003335891	0.649921	0.516002	-0.004384	0.0087201
Championship	0.008082621	0.056279093	0.143617	0.885853	-0.102455	0.1186199
Recession Year	0.107741357	0.029324274	3.674135	0.000261	0.050146	0.1653369

<i>NHL Regression Statistics</i>	
Multiple R	0.426078
R Square	0.181543
Adjusted R Square	0.17295
Standard Error	0.221644
Observations	386

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.1757494	0.052005155	195.6681	0	10.0735	10.278002
Employment	-0.017501	0.0064375	-2.7186	0.006856	-0.030158	-0.0048435
Wins	0.00832533	0.001333021	6.245458	1.13E-09	0.005704	0.0109463
Championship	-0.07939981	0.054838427	-1.44789	0.148471	-0.187224	0.028424
Recession Year	0.10487414	0.033437203	3.136451	0.001843	0.03913	0.1706187

<i>NBA Regression Statistics</i>	
Multiple R	0.422118
R Square	0.178184
Adjusted R Square	0.172005
Standard Error	0.223532
Observations	537

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.571174	0.032056137	329.7707	0	10.508202	10.634146
Employment	-0.0359093	0.004928266	-7.2864	1.16E-12	-0.045591	-0.026228
Wins	-0.0023836	0.000757988	-3.14467	0.001756	-0.003873	-0.000895
Championship	-0.0059952	0.054077303	-0.11086	0.911767	-0.112226	0.1002361
Recession Year	0.0923557	0.029551544	3.12524	0.001874	0.0343036	0.1504077

<i>MLB Regression Statistics</i>	
Multiple R	0.409649
R Square	0.167813
Adjusted R Square	0.16146
Standard Error	0.222168
Observations	529

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.156916	0.063264858	160.5459	0	10.032632	10.2812001
Employment	-0.026889	0.005844007	-4.60119	5.28E-06	-0.03837	-0.0154088
Wins	0.0042517	0.000783758	5.424721	8.88E-08	0.002712	0.00579136
Championship	0.0125922	0.056161845	0.224212	0.82268	-0.097738	0.1229222
Recession Year	0.1102764	0.029886641	3.689821	0.000248	0.051564	0.16898872

## Conference data

### NFL conferences

<i>AFC Regression Statistics</i>	
Multiple R	0.319905
R Square	0.102339
Adjusted R Square	0.08933
Standard Error	0.234379
Observations	281

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.4478272	0.041191119	253.6427	0	10.366738	10.52892
Unemployment Rate	0.00294378	0.001009902	2.91492	0.003849	0.0009557	0.004932
Wins	0.00106815	0.004700343	0.227249	0.820399	-0.008185	0.010321
Championship	0.07262612	0.082375374	0.881648	0.378734	-0.089538	0.23479
Recession Year	0.05984465	0.054644958	1.095154	0.274404	-0.047729	0.167419

<i>NFC Regression Statistics</i>	
Multiple R	0.300412
R Square	0.090247
Adjusted R Square	0.077912
Standard Error	0.240062
Observations	300

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.4327618	0.040834871	255.4866	0	10.3523972	10.5131264
Unemployment Rate	0.002423	0.000970271	2.497246	0.013061	0.00051347	0.00433253
Wins	0.00140752	0.004912514	0.286517	0.774683	-0.0082605	0.01107554
Championship	-0.0394606	0.079700609	-0.49511	0.620891	-0.1963144	0.11739323
Recession Year	0.07582172	0.056340567	1.345775	0.179408	-0.0350587	0.1867021

### NHL conferences

<i>East Regression Statistics</i>	
Multiple R	0.411139
R Square	0.169035
Adjusted R Square	0.153788
Standard Error	0.232521
Observations	223

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.193942	0.0669824	152.1884	2.7E-223	10.061926	10.325958
Unemployment Rate	0.0027576	0.001078189	2.557619	0.011218	0.0006326	0.0048826
Wins	0.00759753	0.001755779	4.327158	2.3E-05	0.0041371	0.011058
Championship	-0.089953	0.070405587	-1.27764	0.202735	-0.2287157	0.0488098
Recession Year	0.0513123	0.059573509	0.861328	0.390004	-0.0661015	0.1687261

<i>West Regression Statistics</i>	
Multiple R	0.474048
R Square	0.224721
Adjusted R Square	0.205094
Standard Error	0.206405
Observations	163

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.0844355	0.07749887	130.1236	1.3E-162	9.9313681	10.237503
Unemployment Rate	0.00181504	0.001085804	1.671606	0.096581	-0.0003295	0.0039596
Wins	0.01026719	0.002040372	5.032017	1.31E-06	0.0062373	0.0142971
Championship	-0.0745536	0.088896522	-0.83866	0.40293	-0.2501324	0.1010253
Recession Year	0.04658995	0.063057345	0.738851	0.461094	-0.0779541	0.171134

## NBA Conferences

<i>East Regression Statistics</i>	
Multiple R	0.384705
R Square	0.147998
Adjusted R Square	0.134788
Standard Error	0.224057
Observations	263

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.60466053	0.047500755	223.2525	3.3E-297	10.511122	10.698199
Unemployment Rat	0.003283841	0.000999027	3.28704	0.001153	0.00131656	0.0052511
Wins	-0.003925909	0.001174084	-3.34381	0.000949	-0.0062379	-0.0016139
Championship	0.143460561	0.089986509	1.594245	0.112105	-0.033741	0.3206621
Recession Year	0.05632174	0.057261041	0.983596	0.326236	-0.0564368	0.1690803

<i>West Regression Statistics</i>	
Multiple R	0.32624
R Square	0.106433
Adjusted R Square	0.093145
Standard Error	0.236893
Observations	274

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.4893171	0.045924216	228.4049	0	10.3989	10.5797337
Unemployment Rate	0.00187766	0.000899791	2.086776	0.03785	0.0001061	0.00364919
Wins	-0.0019581	0.001063682	-1.84091	0.066736	-0.004052	0.00013606
Championship	-0.0790224	0.072113921	-1.0958	0.274146	-0.221002	0.06295705
Recession Year	0.111168	0.053873002	2.06352	0.040023	0.0051017	0.21723435

## MLB Leagues

<i>NL Regression Statistics</i>	
Multiple R	0.375908
R Square	0.141307
Adjusted R Square	0.128247
Standard Error	0.229902
Observations	268

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.1743304	0.094295924	107.8979	9.2E-220	9.988659	10.360001
Unemployment Rat	0.0027252	0.001027157	2.653147	0.00846	0.000703	0.0047477
Wins	0.00365666	0.001180924	3.096439	0.00217	0.001331	0.0059819
Championship	-0.0184722	0.083947262	-0.22005	0.826007	-0.183766	0.146822
Recession Year	0.0703265	0.05668773	1.240595	0.215861	-0.041293	0.1819461

<i>AL Regression Statistics</i>	
Multiple R	0.418585
R Square	0.175213
Adjusted R Square	0.162326
Standard Error	0.21876
Observations	261

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.10690766	0.085872257	117.697	6.6E-225	9.937802	10.2760136
Unemployment Rate	0.002538509	0.000975525	2.602197	0.009803	0.000617	0.00445959
Wins	0.004676475	0.001071684	4.363668	1.86E-05	0.002566	0.00678691
Championship	0.033213577	0.077081099	0.430891	0.66691	-0.11858	0.18500737
Recession Year	0.070178788	0.053641478	1.308293	0.191947	-0.035456	0.17581355

## One team MSA's

<i>Regression Statistics</i>	
Multiple R	0.293126
R Square	0.085923
Adjusted R Square	0.058432
Standard Error	0.243428
Observations	138

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.421267	0.052552639	198.3015	2.7E-166	10.31732	10.525214
Unemployment Rate	0.0018303	0.001097489	1.667691	0.09773	-0.000341	0.0040011
Wins	-0.0012951	0.001293214	-1.00149	0.318407	-0.003853	0.0012628
Championship	-0.0581558	0.113520275	-0.51229	0.609294	-0.282695	0.1663829
Recession Year	0.0685398	0.073414048	0.933605	0.352199	-0.07667	0.2137499

## New/Relocated Team

<i>Regression Statistics</i>	
Multiple R	0.288721
R Square	0.08336
Adjusted R Square	0.068333
Standard Error	0.192552
Observations	249

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.439258	0.021895706	476.7719	0	10.3961292	10.482387
Unemployment Rate	0.0014665	0.000784741	1.868795	0.06285	-7.921E-05	0.0030123
Wins	0.0001309	0.000453555	0.288536	0.773181	-0.0007625	0.0010242
Championship	-0.0501291	0.074786557	-0.6703	0.503303	-0.1974387	0.0971805
Recession Year	0.0663011	0.046254047	1.433412	0.15302	-0.024807	0.1574093

## Regional Statistics

<i>Northeast Regression Statistics</i>	
Multiple R	0.378163
R Square	0.143007
Adjusted R Square	0.136206
Standard Error	0.245073
Observations	509

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.5083692	0.019782014	531.2083	0	10.469504	10.5472346
Unemployment Rate	0.0043229	0.00086285	5.010028	7.54E-07	0.0026277	0.00601813
Wins	0.00080364	0.00039506	2.034232	0.042451	2.748E-05	0.00157981
Championship	0.07373194	0.052591208	1.401982	0.161536	-0.029593	0.17705694
Recession Year	0.05045593	0.043320702	1.164707	0.244689	-0.034655	0.13556733

<i>South Regression Statistics</i>	
Multiple R	0.34763
R Square	0.120846
Adjusted R Square	0.113474
Standard Error	0.197203
Observations	482

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.3660426	0.01584989	654.0135	0	10.334898	10.397187
Unemployment Rate	0.00237752	0.000601794	3.950718	8.97E-05	0.001195	0.00356
Wins	0.00037362	0.000331524	1.12698	0.260317	-0.0002778	0.001025
Championship	-0.0711848	0.046455424	-1.53233	0.126105	-0.1624674	0.0200977
Recession Year	0.05772723	0.035627946	1.620279	0.105833	-0.0122799	0.1277343

<i>Midwest Regression Statistics</i>	
Multiple R	0.362753
R Square	0.13159
Adjusted R Square	0.124986
Standard Error	0.187466
Observations	531

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.401334	0.014603692	712.24	0	10.372645	10.430023
Unemployment Rate	0.0028058	0.000599266	4.682142	3.62E-06	0.0016286	0.0039831
Wins	0.000384	0.000274946	1.396594	0.163125	-0.000156	0.0009241
Championship	-0.009956	0.047673096	-0.20884	0.834651	-0.103609	0.0836968
Recession Year	0.0560231	0.031468033	1.780317	0.075601	-0.005795	0.1178415

<i>West Regression Statistics</i>	
Multiple R	0.29475
R Square	0.086878
Adjusted R Square	0.079659
Standard Error	0.258698
Observations	511

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10.4775265	0.021986011	476.5542	0	10.434331	10.520722
Unemployment Rate	0.00233289	0.000722393	3.2294	0.001321	0.0009136	0.0037522
Wins	0.00012269	0.000407825	0.300835	0.763664	-0.0006786	0.0009239
Championship	-0.0298283	0.068022148	-0.43851	0.661205	-0.1634689	0.1038123
Recession Year	0.0805195	0.046298505	1.739138	0.082619	-0.0104415	0.1714805

## 10 most successful teams in each league data

### 1. With unemployment rate as a variable

<i>All Regression Statistics</i>	
Multiple R	0.4336037
R Square	0.1880122
Adjusted R Square	0.1806036
Standard Error	0.2184075
Observations	554

<i>NFL Regression Statistics</i>	
Multiple R	0.330879
R Square	0.109481
Adjusted R Square	0.084881
Standard Error	0.25587
Observations	187

<i>MLB Regression Statistics</i>	
Multiple R	0.51451776
R Square	0.26472852
Adjusted R Square	0.24474832
Standard Error	0.20947326
Observations	190

<i>NBA Regression Statistics</i>	
Multiple R	0.437229
R Square	0.191169
Adjusted R Square	0.16919
Standard Error	0.218812
Observations	190

<i>NHL Regression Statistics</i>	
Multiple R	0.487221
R Square	0.237385
Adjusted R Square	0.214688
Standard Error	0.207375
Observations	174



## 2. Unemployment as a variable

<i>All Regression Statistics</i>		<i>NFL Regression Statistics</i>		<i>MLB Regression Statistics</i>	
Multiple R	0.433918	Multiple R	0.33378	Multiple R	0.514767
R Square	0.188285	R Square	0.111409	R Square	0.264985
Adjusted R Square	0.180879	Adjusted R Square	0.086863	Adjusted R Square	0.245011
Standard Error	0.218371	Standard Error	0.255593	Standard Error	0.209437
Observations	554	Observations	187	Observations	190

<i>NBA Regression Statistics</i>		<i>NHL Regression Statistics</i>	
Multiple R	0.437652	Multiple R	0.48772
R Square	0.191539	R Square	0.237871
Adjusted R Square	0.16957	Adjusted R Square	0.215188
Standard Error	0.218762	Standard Error	0.207309
Observations	190	Observations	174

## 3. With employment as a variable

<i>All Regression Statistics</i>		<i>NFL Regression Statistics</i>		<i>MLB Regression Statistics</i>	
Multiple R	0.43638	Multiple R	0.373017	Multiple R	0.508198
R Square	0.190428	R Square	0.139141	R Square	0.258266
Adjusted R Square	0.183041	Adjusted R Square	0.115361	Adjusted R Square	0.23811
Standard Error	0.218082	Standard Error	0.251573	Standard Error	0.210392
Observations	554	Observations	187	Observations	190

<i>NBA Regression Statistics</i>	
Multiple R	0.44579
R Square	0.19873
Adjusted R Square	0.17695
Standard Error	0.21779
Observations	190

## Bibliography

Lertwachara, Kaveepong, and James J. Cochran. "An Event Study of the Economic Impact of Professional Sport Franchises on Local Economies." *Journal of Sports Economics* 8.244 (2007): 244-54. Web. 9 Oct. 2013

Humphreys, Brad R., and Michael Mondello. *Determinants of Franchise Values in North American Professional Sports Leagues: Evidence from a Hedonic Price Model*. University of Alberta, 2008. Web. 9 Oct. 2013. <[http://www.ualberta.ca/~bhumphre/papers/ijsf\\_08.pdf](http://www.ualberta.ca/~bhumphre/papers/ijsf_08.pdf)>.

Coates, Dennis, and Brad Humphreys. *The Effect of Professional Sports on the Earnings of Individuals: Evidence from Microeconomic Data*. University of Maryland, Baltimore County, 11 Sept. 2003. Web. 9 Oct. 2013. <[http://www.umbc.edu/economics/wpapers/wp\\_03\\_104.pdf](http://www.umbc.edu/economics/wpapers/wp_03_104.pdf)>.

Hambrecht, William, Elizabeth Hambrecht, Peter Morrissey, and Michael Black. "The U.S. Professional Sports Market & Franchise Value Report." (2012): WR Hambrecht and Co. Web. 11 Oct. 2013. <[http://www.wrhambrecht.com/wp-content/uploads/2013/09/SportsMarketReport\\_2012.pdf](http://www.wrhambrecht.com/wp-content/uploads/2013/09/SportsMarketReport_2012.pdf)>.

"Plunkett Research®, Ltd." *Http://www.plunkettresearch.com/*. Plunkett Research, n.d. Web. 14 Nov. 2013.

Siegfried, John, and Andrew Zimbalist. "The Economics of Sports Facilities and Their Communities." *Journal of Economic Perspectives* 14.3 (2000): 95-114. Web. 2 Oct. 2013. <<http://www.uwlax.edu/faculty/anderson/micro-principles/stadiums.pdf>>.

Yankees franchise valuation <http://www.forbes.com/teams/new-york-yankees/>