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THE IMPLICATIONS OF THE ADDITION OF AN NFL TEAM AND STADIUM ON  
THE LOS ANGELES HOUSING MARKET

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## Abstract

As Los Angeles has gained approval to start construction of Farmers Field next to the Staples Center and other investors such as Edward P. Roski attempt to finance stadium construction efforts in Southern California, there has never been a better time to study the effects that these stadiums could have on the area. In this thesis, an overview of the prospective plans as well as the history of the NFL in Southern California will be studied in-depth. With this, papers examining FedEx Field in Maryland as well as the new Cowboys stadium will be analyzed to try to determine what effect, if any, a possible new NFL stadium and team could have on the Los Angeles housing market. To do this, a fixed-effects regression of panel data from six cities of recently added NFL teams will be used to look for a correlation between the housing price index and the presence of an NFL franchise. In conclusion, this paper will discuss previous papers, as well as the regression data to help determine what effect, if any, a new NFL team will have on the Los Angeles housing market. From this, the paper was able to infer that there is a greater effect on the HPI in small markets as a result of the presence of an NFL franchise and stadium than there is in large markets. Small markets experienced a statistically significant coefficient of 2.26 for the presence of an NFL franchise, while the effect on large markets was deemed to be negligible.

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## **Introduction**

When people think of the largest markets in the United States, they think of Los Angeles and New York City. Being the second largest city in the United States and boasting densely populated surrounding areas, Los Angeles offers something that cities such as Buffalo and Cleveland do not. It offers a city population of 3,792,621 and a metropolitan area population of 12,828,837 (US Census Bureau). It offers access to the entertainment capital of the world in Hollywood. It has hosted the Olympics not once, but twice. And, it has an enjoyable climate in which to watch a game. Having a temperate fall and winter climate makes Los Angeles appear to be the perfect place to host a franchise for one of the most impactful and popular sports organizations in the United States, the National Football League.

So, with all the indicators pointing towards Los Angeles being an excellent place to host a franchise, it brings into question why they do not currently have a team. Los Angeles has not had a professional football team since the Rams and Raiders both left following the conclusion of the 1994 season. Many perceive that the primary reason was outdated stadium facilities and limited fan support. In fact, in 1999, Los Angeles was originally awarded the spot that the Houston Texans would take contingent on a stadium financing plan (Markazi, 2011). Unfortunately, Los Angeles was not able to develop a plan suitable to the NFL's standards, and the Houston Texans became the 32<sup>nd</sup> franchise to play in the NFL.

Currently, Los Angeles has two-stadiums used primarily for football related events in the L.A. Coliseum, and the Rose Bowl in Pasadena. The L.A. Coliseum hosts USC football contests, while the Rose Bowl is home to UCLA and one of the most prestigious BCS bowl games. Both are suitable stadiums for college related events, but in terms of amenities, these stadiums are not exactly on par with current professional facilities and do not possess specifications needed for

increased revenue streams. Since the NFL pools national broadcast rights and participates in revenue sharing, the biggest additional revenue streams for owners are often parking, luxury boxes, concession sales and club seat revenue.

The L.A. Coliseum was originally built for the 1932 Olympic Games, and at one time had a track around the field (Munsey, Suppes 2011). Unlike more modern stadiums, the L.A. Coliseum features outdated bench seating and lacks in terms of luxury boxes and club seats. While club seats and luxury boxes provide exceptional revenue streams for NFL franchises, the L.A. Coliseum does not provide these opportunities and hadn't for previous NFL teams.

Another problem with the L.A. Coliseum is its seating capacity. Currently, most of the largest stadiums in the NFL have a seating capacity of around 80,000. Cowboys Stadium (80,000), FedEx Field (82,000) and Arrowhead Stadium (76,416) are three of the top five largest stadiums in the NFL, and all have a capacity around 80,000 (Munsey, Suppes 2011). In 1946, the seating capacity of the L.A. Coliseum was around 105,000 (Munsey, Suppes 2011). In 2009, USC had an average attendance at the Coliseum of 84,799 (Miller 2010). Having such a large seating capacity creates a myriad of problems, first of which is selling out your venue. In the NFL, MetLife Stadium, home of the New York Giants and Jets has a stadium capacity of 82,566 (Stadiums of Pro Football). For New York, it is easy to sell out this stadium due to a culture heavily enthralled by the sport of football as well as the amenities of a brand new stadium. Los Angeles will have to overcome both of these factors. Both the Giants and Jets are steeped in NFL tradition. The New York Giants have been around since 1925, have won four NFL Championships and four Super Bowls. The Jets have existed since the 1960's as a part of the AFL and were famous for Joe Namath's bravado and memorable Super Bowl III guarantee. Los Angeles doesn't have such a rich tradition to rely on or a team that has been associated with their

city for decades. Instead, Los Angeles will either inherit a brand new expansion franchise or will receive a team trying to vacate its current situation and move to a larger market.

With the challenge of building support for a relatively new team with no city related history, Los Angeles will have to create a revolutionary and inviting new stadium. And, currently, there are two plans to do so.

Most times, franchise relocations are primarily motivated by two things, funding for a stadium and access to a larger market. The Seattle SuperSonics moving to Oklahoma City or the Rams moving from Los Angeles to St. Louis are two examples of professional sports franchises both moving due to new stadium financing elsewhere.

With new stadiums being a primary driver in franchise relocation, the Raiders and Rams both left Los Angeles in order to attain a better stadium situation. In the 1970's, the Rams found it difficult to sell out the L.A. Coliseum and instead moved to Anaheim to play at current Angels Stadium, formerly Edison Field and Anaheim Field. Anaheim is 26 miles from Los Angeles which is over a half hour commute with limited traffic and a longer commute with traffic present. Playing at Anaheim Field provided the Rams with an opportunity to play in a smaller stadium which they could sell out and hopefully offer fans the experience of a sold-out atmosphere. Selling out is extremely important because it creates an environment of excitement and makes the games seem more intense and popular than they otherwise may actually be. If one doesn't sell out, then fans see the empty venue as an indication of disinterest. A packed venue creates a feel of scarcity in terms of acquiring a ticket as well as getting to see the game which makes it more enticing. If one feels that everyone is doing something and that it is a trend, they will be more likely to attend. Also, if they do attend, the packed atmosphere will provide them with an experience that will cause them to pay increased attention to the team as well as attend

games in the future. Atmosphere is everything. In addition to atmosphere, if teams do not sell-out, there games are blacked out or not shown on television in their local market. Unfortunately, while playing in a facility intended for baseball gave the Rams the opportunity to sell-out, it didn't provide the greatest fan experience or views to watch a game. And, with limited luxury boxes, the Rams were not able to create revenue streams that so many other teams in the NFL benefit from utilizing. So, when St. Louis offered them stadium financing and the opportunity to make a greater profit, they jumped at the opportunity.

The Rams moved into the \$280 million Edward Jones Dome in St. Louis in 1995 and benefited from something they could not get in Los Angeles, a new stadium.

Another team that occupied the L.A. Coliseum was the present day Oakland Raiders. The Raiders originally chose to locate to Los Angeles to try to convince city officials to renovate the Coliseum and to target the Los Angeles market. However, the Raiders moved back to Oakland after the 1994 season primarily due to a lack of commitment to improve the Coliseum and an agreement to update the Oakland-Alameda County Coliseum (Fleming, 2011).

Both of these teams were primarily motivated to leave due to stadium upgrades elsewhere. And, with two proposals currently on the table for a stadium in Los Angeles, teams such as the Minnesota Vikings, Jacksonville Jaguars or Cincinnati Bengals may be seriously considering making the move. Given tax incentives, a new facility and a large and expanding market, Los Angeles provides an ample opportunity for new suitors, especially for teams such as Minnesota which has recently experienced problems with its facility and the prospect of gaining public funding for a new stadium.

Currently, there are two major proposals on the table. One is headed by Edward P. Roski, current part-owner of the Los Angeles Lakers and Los Angeles Kings, which proposes a 75,000



seat stadium at a location about 22 miles from Downtown LA (Los Angeles Stadium). The other, headed by the Anschutz Entertainment Group Inc., proposes building a 72,000 seat stadium behind the Staples Center in Downtown Los Angeles (Helman, 2011).

The Roski-backed plan for the Los Angeles Stadium at Grand Crossing is a plan that would permit a stadium to be built at the interchange of routes 57 and 60 and would create a whole new area for redevelopment. The stadium would be built on 600 acres and have over 25,000 parking spaces (Los Angeles Stadium). With 12,500 club seats planned and 176 suites, the Los Angeles Stadium at Grand Crossing would provide the perfect opportunity for an NFL franchise to benefit from additional revenue streams associated with club seats, suites, parking and restaurant type complexes (Los Angeles Stadium). In comparison to the Coliseum, the Los Angeles Stadium would provide a modern facility with the luxury boxes necessary to attract corporation and big business clientele.

Also, the stadium project anticipates creating 18,000 jobs and millions in revenue while not receiving public funding (Los Angeles Stadium). And, the stadium would be built on the border of four counties which have a joint population of over 15.5 million people (Los Angeles Stadium). This stadium also plans to be built into the hill on which it is situated in order to use less concrete and steel in its construction as part of an initiative to make it LEED certified. LEED certification will be discussed in the next section in regards to the Anschutz as it is a major proponent of their plan.

**Figure 1: Los Angeles Stadium at Grand Crossing**



<http://www.losangelesfootballstadium.com/gallery.html>

The other plan, headed by the Anschutz Entertainment Group Inc., calls for a retractable roof stadium (Farmers Field) to be built where the current Los Angeles Convention Center sits. The area where this stadium is planned to be constructed is already home to the Staples Center, Nokia Theatre and L.A. Live. The stadium is estimated to cost about \$1.2 billion and will be financed partially by \$275 million in bonds from the city (Palmeri, 2011). On August 9<sup>th</sup>, 2011, in a 12-0 vote, the City Council of Los Angeles approved this plan for Farmers Field.

**Figure 2: Farmers Field**



[\(http://farmersfield.com/blog/entry/stadium-renderings/\)](http://farmersfield.com/blog/entry/stadium-renderings/)

AEG is making a strong push to make this facility a “green” stadium. Just as the Staples Center was the first arena to achieve an ISO 14001 Environmental Management System, Anschutz (AEG) anticipates creating another complex that values sustainability and is committed to being as environmentally friendly as possible. The ISO 14001 provides an organized plan for environmental management with the focus on continued improvement in environmental processes (ISO, 2011). With a commitment to the environment, Farmers Field will be appealing to its fans who wish to keep the Los Angeles Area free of increased pollution. AEG also intends for its facility to be LEED-certified and the only carbon neutral facility in the United States (Farmers Field). LEED, which stands for Leadership in Energy and Environmental Design, was developed by the U.S. Green Business Council (USGBC) to provide third party verification and rating of a facility to determine that it is offering the best qualities in terms of

sustainable site development, water savings, energy efficiency, material selection and indoor environmental quality (USGBC, 2012). There is a 100 point scale combining these aforementioned variables, and a score above 40 allows one to be LEED-certified (USGBC, 2012). Because of this, negative externalities such as an increased strain on the power grid as well as increased pollution will be minimal in comparison to other stadium plans.

Some complaints that have been brought to light are that the new stadium would lead to increased congestion and longer commutes. But, others believe differently because there are four freeways and 20 interchanges that people could use to arrive at the facility. Also, with the majority of games being held on Sunday, a lower traffic day, these effects seem to be minimal. In addition, people believe the fact that there are already over 32,000 parking spots in operation within a 15 minute walk will be an added incentive to those utilizing the stadium.

Because both of these plans could bring a team to Los Angeles, it is necessary to study what effect it possibly could have on the local housing market. By looking at other studies and looking at the effect of other NFL teams on their respective cities, it is anticipated that this study will be able to determine what effect a possible franchise could have on the housing market.

### **Literature Review**

In discussing the anticipated impact a NFL franchise and new stadium could have on the Los Angeles Area, it is vital to look at two of the newest and nicest stadiums in the NFL; Cowboys Stadium in Arlington, TX and FedEx Field in Landover, MD. While these two sites will not be entirely equivalent to Los Angeles due to the fact that both already have well established teams playing in their area prior to the building of the new stadium, the effect of the

new stadium may provide a little insight into the prospective effects that could occur in Los Angeles.

FedEx Field, originally opened in 1997 as Jack Kent Cooke Stadium cost \$250.5 million dollars to construct (Munsey, Suppes 2011). It was built near I-495 in an area that was not highly developed.

FedEx Field, which is the home of the Washington Redskins, hosts concerts as well as college football games. It is one of the larger venues in the NFL and is in close proximity to large markets such as Baltimore and the nation's capital.

Prior to the construction of FedEx Field, there was a lot of resistance to it, as many believed that it would create negative externalities for current citizens. Many citizens believed that the new stadium would bring "traffic congestion, air and noise pollution, and undesirable crowds to the neighborhood, thus causing property values to decline (Tu, 2005)." While this concern may have been prevalent, many city administrators felt differently. They felt that the new stadium would stimulate the local economy and result in greater tax revenue that would make the area more valuable.

When looking at the study done on FedEx Field, a spatial hedonic model was used to examine the price difference in houses close to FedEx Field in comparison to others that are further away. It was found that properties in close proximity to FedEx Field initially saw a decline in prices and sold at a discount following the announcement of the stadium (Tu, 2005). But, as the process proceeded and the stadium was built, prices gradually rose. And, at the completion of the project, the total value of the aggregate of all houses in the area actually escalated in value by around \$42 million in total (Tu, 2005).

As is noted in most markets, prices usually converge to expectations of future rents. In the case of FedEx Field, people held expectations that the negative externalities of the stadium would create a significant decrease in their property values. Because they had these expectations of decreased prices, current prices converged to their outlook of future prices. However, what people failed to take into account initially was the positive impact such a project could have on the area in which it occupies.

Over \$70 million was used to build better roads and improve the community, which was compensated for in housing prices (Tu, 2005). With better roads and infrastructure developments due to the stadium, citizens saw their property values rise. Therefore, not only the stadium, but also the infrastructure improvements it facilitated had a profound effect on housing values. In addition to this, the benefits of a large stadium such as providing concert events and games in a close proximity, were compensated for in an increase in housing prices.

In conclusion, the study of FedEx Field found that the effect on housing prices is minimal at distances greater than 2.5 miles away (Tu, 2005). But, areas close to and surrounding the site did see housing price values rise.

When looking at FedEx Field, it is easy to see that this may be applicable to the Los Angeles Stadium at Grand Crossing. Capital improvements as a result of FedEx Field had a significant effect on property values. Given that the area at Grand Crossing is not highly developed, building a stadium in that area and improving infrastructure could cause property values or developmental sites adjacent to the stadium to rise significantly in value. And, greater commerce in the area due to an influx of people as a result of the presence of an NFL franchise and stadium could also lead to increased local sales tax revenue.

Since the Los Angeles Stadium at Grand Crossing would be bringing a new NFL team to Los Angeles, the effect would probably be greater in terms of providing an amenity than just building a new stadium for a team that already exists in a given area.

However, in terms of attracting fans, the difference between FedEx Field and Grand Crossing is that the Redskins have been a mainstay of the greater D.C. area ever since they moved from Boston in 1937 and Grand Crossing would be relying on either a team relocating or an expansion franchise. Because of this, Los Angeles will have to create a sense of tradition that models that of the Washington Redskins. If Los Angeles can successfully inspire fan involvement like the Redskins, then they have the opportunity to be extremely successful and bring an impact even greater than that of FedEx Field because they will be bringing the NFL to Los Angeles for the first time since 1994. But, creating a new team and attempting to build a sense of tradition and loyalty for fans may be difficult. In spite of this, Los Angeles has the opportunity to create new traditions authentic to the city which could overturn evolve to be really essential to their identity and brand.

On the contrary to the Grand Crossings plan, Farmers Field has been approved and focuses on Downtown Los Angeles near the Staples Center. Because this area has already seen greater improvements in infrastructure and housing value due to the Staples Center, the capital improvements as a result of an NFL stadium being built would have a lesser effect. Primarily because the Staples Center is over 12 years old, the initial influx of improvement to the area has already had its effect. But, bringing another stadium to the area could create greater traffic and an influx of potential consumers to local businesses. In this sense, the stadium could create greater revenues for those business owners in close proximity to the stadium. However, studying the effect of revenues on local businesses as a direct result of a stadium project is not the intention of

this paper. Instead, this paper focuses on how property values are impacted by the presence of an NFL team and how this presence could lead to increased rents for property owners, and increased resale values of people's homes.

In order to fully understand why stadiums impact property values, it is pertinent to understand how housing markets are affected by the amenities of cities. In a sense, it all has to do with the demand to live in a prospective city and this demand is created by benefits that the city offers. For example, people move to cities because they have culture, music, arts, beaches, good weather, entertainment, aesthetically pleasing aspects, accessibility to shopping or jobs, etc. All of these attributes or benefits are what help to determine the price of housing in a city. Therefore, if a city offers an NFL team and venue, it provides residents with a lot of benefits. People are able to see world-class athletes perform against other athletes and represent their city. They have the opportunity to exhibit a sense of city pride that builds significant social capital. It provides residents with something that unifies them. When going to the grocery store, gas station or even breakfast at a local diner, a professional sports team gives something all residents could talk about, take pride in, and discuss. It builds friendships and bonds strangers. All of which could lead to positive effects such as civic engagement, taking better care of the community and creating a more friendly and inviting environment for citizens to live in. And, these effects are often compensated for in terms of housing price increases.

When promoting a stadium, advocates often reason that a stadium will increase jobs and provide an influx or stimulus to the local economy. However, what they fail to realize is that citizens or local governments are paying for this by funding stadium creation.

Recently, the Dallas Cowboys constructed a state of the art, \$1.3 billion stadium. To help cover costs of the stadium and bring the venue to Arlington, TX, local law makers increased the



city's sales tax by .5 percent, hotel occupancy tax by 2 percent and the car rental tax by 5 percent. In doing so, the local government of Arlington was able to provide over \$325 million to help with the project (Munsey, Suppes 2011).

Looking at this stadium announcement, tax burden, overall city amenity effect and proximity amenity effect were considered triggers that affect the values of housing prices (Dehring, Depken and Ward 2007). The tax burden is the present value of future tax payments that are needed in order to fund the stadium. As with most taxes, the overall effect of the tax burden had a negative correlation with housing prices. The overall city amenity effect is the overall increase in attractiveness of a city resulting from the benefits provided by the NFL franchise. This is positively correlated with housing prices. The proximity amenity effect was found to be negligible.

In Arlington, the average decrease in property values following stadium announcements was -\$1,742 (Dehring, Depken and Ward 2007). It was also found that with a 4.5 percent wage growth rate per year, the 30yr present value of tax payments to finance the stadium would be around \$2,000 per household (Dehring, Depken and Ward 2007). If this is assumed, it can be theorized that the change in property values is primarily due to this tax. However, the decrease in property values was not exactly equivalent to the \$2,000 meaning residents were willing to pay a little extra for the stadium, just not the full amount that the present value of future tax payments stipulated. The effect accounting for the discrepancy in values is the overall city amenity effect. Because the stadium does provide an amenity, it will be compensated for in terms of housing prices, but not enough to offset the tax payments.

In comparison to the study of FedEx Field, the study of Cowboys Stadium was only looking at the impact immediately following a stadium announcement. Therefore, following the

construction and utilization of the facility as well as the capital improvements associated with it, there could have been a positive effect on housing prices that this study may have failed to be able to depict. However, Depken believes that perfect information regarding developments allows the markets to react efficiently and converge to future prices. This means that he does not believe the actual construction will impact property values as the market has already reacted to complete information (Dehring, Depken and Ward 2007).

How does this relate to the current plans in Los Angeles? The AEG plan which has been currently approved would receive over \$275 million in bonds from the city of Los Angeles which is already \$417 million in debt due to other convention center projects (Palmeri, 2011). Because the city currently loses \$14 million a year due to the debt incurred from projects such as these, it could create an expectation of residents to have to pay for these projects later in the form of higher taxes (Palmeri). If residents expect the tax burden to grow, it will be compensated for in housing prices as described in the case of Arlington. And, therefore, we could expect housing prices to fall.

However, there is a chance that the positive effects of the new team could significantly impact housing prices in a positive way. In research looking the effect of the NFL on the rent in central cities where a team is located, an 8 percent increase was attributed primarily due to the presence of a professional football team (Carlino, Coulson 2004).

Because rents are proportional to property value, an increase in rents would also symbolize an increase in housing prices as denoted by the equation below.

$$V_l = \frac{R}{i}$$

**$V_l$  = value of land**

**R = rent prices**

**i = nominal interest rate**

One such indication of the effect the NFL may have on a given housing market can be seen in relation to Dallas and Houston. In 1993, Dallas (\$440) and Houston (\$435) were similar in terms of average rent (Carlino, Coulson 2004). However, in 1994, it was announced that the Houston Oilers would be moving to Tennessee and become the Titans. In 1999, five years after this announcement, the rent in Houston was only \$529 while the rent in Dallas was \$602 (Carlino, Coulson 2004). These drastic differences could be a major indicator of just how valuable an NFL franchise is to a given area. In fact, Coulson and Carlino calculated the presence of an NFL franchise to result in an 8 percent increase in rents (Carlino, Coulson 2004). Losing an NFL franchise made Houston a less desirable place to live which, in turn, led to rents and property values increasing at a lesser rate and not remaining consistent with the rent prices of Dallas. If Carlino and Coulson's research is truly indicative of the type of impact an NFL franchise could have on all markets, then bringing a team to Los Angeles might increase rents in the central city and in turn property values to compensate for the amenity of having a professional team.

In addition to the effect on rents, it was also observed that an NFL franchise could have significant benefits in terms of increased property taxes (Carlino, Coulson 2004). As a result of this research, it was projected that an NFL franchise could increase the present value of future property tax revenue by \$2044.1 million if the 8 percent increase in rents also represented an 8 percent increase in property values in Los Angeles (Carlino, Coulson 2004). If this remains true,

then as long as the public financing for a new stadium is below this amount, Los Angeles should, overtime, recoup their investment.

However, when plans do not live up to expectations, there can be negative consequences. In regards to the Baltimore Ravens and their NFL facility, the Maryland Department of Business and Economic Development predicted an annual economic benefit of \$111 million and the creation of 1400 jobs (Carlino, Coulson 2004). But, the actual impact was \$33 million and 534 jobs (Leeds, von Allmen). In this case, the planning commission severely overestimated the impact of the project. In doing so, the housing market of Baltimore would have to correct and react to the new information which disappointed expectations in terms of lowering property values.

In regards to the Baltimore Orioles and Camden Yards, it is estimated that Maryland loses almost \$9 million a year on the project (Hamilton, Kahn). If municipalities and cities are losing money on these types of investments, why do they continually fund such projects? The answer lies in what was previously discussed. Stadiums provide a great amenity to city residents and because of this are compensated for in property values. However, inefficiency due to poorly developed plans does adversely affect housing prices.

In terms of local business revenue gains, many economists believe that it in fact just substitutes spending away from other leisure activities and does not provide a lot of new growth in entertainment expenditures (Carlino, Coulson 2004). If people are operating on a fixed budget, then they may just shift consumption away from other activities in order to enjoy the benefits of the NFL. In this case, no additional expenditures within the city are created but instead just a shift from one activity to another. If this is true, then the proposed benefits of most franchises to their community in terms of creating growth in commerce are substantially inflated.

However, professional sports franchises do bring in out-of-market fans and residents who live two or three hours away. Fans who ordinarily would not visit the city or spend money there are attracted to the area to attend a game, and in this case do spend money in the area. On game days, State College, PA becomes the third largest city in the state in terms of population and experiences large influxes in its economy due to Penn State Football (Mancuso). It trails only Pittsburgh and Philadelphia in terms of the population of people. While Penn State would not mirror any professional host city due to its small size, lack of major commerce and small availability of other amenities that major cities may have, this same effect, could also hold true for professional franchise host cities but at a much smaller rate.

Major host cities such as Los Angeles may see a lot of their games filled by city residents who could otherwise be spending money elsewhere. However, they also do see an influx of people from areas not in close proximity to the city. This does bolster the local economy and create commerce gains. People are willing to travel from locations a few hours away in order to enjoy the team, the stadium and its benefits. And, while doing so they consume goods and services within the city.

In regards to the literature written on the effects of stadiums and professional teams, it can easily be seen that professional teams do have an impact on local property values in close proximity to the stadium as well as the rents of the central cities. However, in this paper, we will study the overall impact on metropolitan areas and their housing prices. Based on the effect the NFL has on other cities, this paper will be able to predict the possible impact that might occur on Los Angeles.

## **Methodology**

### New NFL Franchises and Relocations Study

This study is looking at the effect NFL teams and their stadiums have on the housing prices in their respective MSA's. To do this, data was collected for all teams entering the league with a new stadium since 1994. The teams included are the Baltimore Ravens, Carolina Panthers (Charlotte), Houston Texans, Jacksonville Jaguars, St. Louis Rams and the Tennessee Titans (Nashville). The Cleveland Browns were not included because they had only lost their franchise for four years and were not playing at a new stadium. The Oakland Raiders were not included because they also were playing at an old stadium and returning to a town they played in for a long while. In both instances, the Browns and Raiders would not be correlated models of a prospective professional sports franchise in Los Angeles. In regards to the plan for Los Angeles, there will be a new stadium, and there will not have been a team in the city for over 18 years. The Browns were returning to their old stadium after only several years without a team, while the Raiders were returning to their old stadium in an area that already boasts another NFL team in the San Francisco 49ers. The closest NFL team to Los Angeles is the San Diego Chargers which are about two hours away, while the closest team to the Raiders is the San Francisco 49ers which are about 20 minutes away. Therefore, Oakland and Cleveland would not be representative of the effects that a team would have on the Los Angeles market.

The table below describes the population and number of professional sports franchises present in the cities chosen for study. The number of professional sports franchises only considers teams playing in the MLB, NFL, NHL and NBA.

**Figure 3:** 2000 Census Population Data for NFL Cities included in Panel Data Regression

City	Date of City Origin	City Population	Metropolitan Area Population (CMSA)	Number of Professional Sports Franchises
Baltimore	1729	651,154	7,608,070	2
Charlotte	1755	540,828	1,499,293	2
Houston	1837	1,953,631	4,177,646	3
Jacksonville	1791	735,617	1,100,491	1
Nashville	1779	545,524	1,231,331	2
St. Louis	1764	348,189	2,698,687	3

Since the housing price index (HPI) is “a broad measure of the movement of single-family house prices”, it was decided that using it would be the best way to measure the effect an NFL franchise would have on the typical taxpayers and consumers within the market (FHFA, 2012). According the FHFA, “the HPI is a weighted, repeat-sales index, meaning that it measures average price changes in repeat sales or refinancings on the same properties.”

The HPI was collected quarterly and recorded for all of the aforementioned metropolitan areas for a period of 9 years. It was collected for four years previous to the first year of play for a given team and was followed for four years after the arrival of such team. With this, the study would be attempting to see what effect if any the placement of an NFL franchise had on housing prices.

Since the housing price index is used on repeat transactions, it helps to control for quality differences in housing and is referred to as a “constant quality” index (Calhoun, 196). The HPI uses data on single-family properties which receive financing from Freddie Mac and

Fannie Mae (Calhoun, 1996). Every quarter, data is delivered to the FHFA and they match addresses and look for price differences. The model that the FHFA uses was originally created by Bailey, Muth and Nourse (1963) and then further detailed by Case and Schiller (1987, 1989) (Calhoun, 1996). The HPI is a significant measure of housing price increases within a given area and will help us to understand the effect of an NFL franchise.

In order to properly see the effect of the NFL on the HPI, it was necessary to control for certain variables. The variables that are included in the fixed-effects panel data regression of the HPI are the consumer price index (CPI), the gross domestic product growth rate as defined later, the local unemployment rate, the National Effective Interest Rate on Mortgages, the velocity of the money stock, NFL team and stadium presence, the University of Michigan Consumer Sentiment rating and a trend variable for time. These variables were included in order to see their effect on the HPI and to determine whether the NFL is a significant driver in housing price increases.

The consumer price index (CPI) was included in order to see if changes in inflation are large drivers of housing price increases. The CPI helps to show changes in the prices of goods and can help to show respectively what increases in prices consumers are paying for goods. Because of this, the CPI gives a good indication of inflation which may be affecting housing price values. The data used for the CPI was taken based on the region average for a given city based on its geographical location. For example, the CPI used for Baltimore would be the Northeast urban aggregate of all items. The data is not seasonally adjusted and was taken from the United States Bureau of Labor Statistics. The value of the month at the end of each quarter was used for that respective quarter.



The next variable that was included was the Gross Domestic Product (GDP) growth variable. In order to derive this variable, National GDP data from the Bureau of Economic Analysis was taken and then was manipulated in order to standardize a percentage for growth from year to year. The GDP was taken in real dollars for each year. The equation below will explain how the GDP growth variable was derived.

$$\text{GDP} = (\text{Current Year GDP} - \text{Previous Year GDP}) / \text{Previous Year GDP} * 100$$

Using this equation, the value for the real GDP growth was determined. And, GDP was included because significant increases in GDP could signal a growing economy which in turn could symbolize a growing housing market. National GDP growth was included to determine the well-being of the national economy as a whole. If GDP is rising, it could be indicative of a rising economy which could mean an income effect causing increased consumption of housing. If people's wealth rises due to stock market investment and growth, and their wages rise due to increased compensation from greater profits, the housing market could also react to this and lead to property value increases. As GDP may be indicative of all these things, it was necessary to include it.

The next variable that was included was the local unemployment rate. The local unemployment rate is often a good indicator of the labor market in a given region and helps to show how strong or weak a given region's economy may be. Because increases in unemployment could symbolize a struggling economy and fewer people in search of homes, it was necessary to include this variable. The local unemployment rate was taken from the U.S. Bureau of Labor Statistics and was not seasonally adjusted. As with the CPI, the data for local unemployment was taken quarterly with the numerical value for the last month in the quarter being used to represent the quarter.

In addition to unemployment, the monthly National Effective Interest Rate on Mortgages was used from the month at the end of each quarter to help account for the effects that interest rates might have on the purchase price for homes. This data was taken from the FHFA. In using this data as a regressor, the study is looking to see if changes in interest rates have a significant impact on housing price increases.

The next variable included was the velocity of the money stock (M2V). The velocity of the money stock is a ratio of the quarterly nominal GDP to the quarterly average of the money stock. This variable was used because an increase in the velocity of money often symbolizes a “bullish” economy which means growth and inflation could be present. Both of these are factors which possibly could lead to an increase in the HPI. The velocity of the money stock measures how fast money is spent and used, and helps to show the strength of the economy. And, if the economy is doing well, one could assume that the housing market is also doing well. Therefore, it is not unreasonable to assume that the velocity of the money stock would be a good indication of a strong economic climate. The data for M2V was taken quarterly and is seasonally adjusted.

The University of Michigan Consumer Sentiment rating is available through the website of the Federal Reserve Bank of St. Louis and is an index that helps measure the way consumers feel about the economy. It is used to measure how optimistic or pessimistic people are about the economy and it is the product of 500 phone interviews of different households in the continental United States excluding Hawaii and Alaska (FRED). This variable was included in an attempt to measure the effect people’s attitudes may have on the housing market.

In order to measure the significance of an NFL franchise, a dummy variable was created indicating the presence of an NFL franchise. The value 1 was designated to the quarter in which an NFL team with a new stadium first started play within a region. And, a 0 was given for all

years where an NFL team and stadium was not present. In the case of Nashville where a new team was present, but not a new stadium, .5 was used to symbolize the presence of a team, but not the presence of a new stadium. 1 was used when both were present. The value .5 was used when the team was present but not the utilization of the new stadium. In the case of the Tennessee Titans, the Titans played in Vanderbilt's stadium in Nashville prior to the opening of their stadium. A major assumption in this study is that the presence of a team and the presence of a new stadium are weighted equally to create a dummy variable representing the presence of an NFL franchise and stadium.

In addition to these variables, a time trend variable was created to see if there were any significant changes over time in regards to the HPI.

In order to look at the effect of an NFL franchise on various regions and use it to determine what the average effect has been for placing an NFL team, a panel data regression was chosen using the data from the previously mentioned six cities and teams.

In regressing the data, the fixed effects model was used in order to account for correlation between variables and cities. Because the variables are not random and could have correlation, it was necessary to choose the fixed effects model.

A fixed-effects regression is used for panel data in which, "the omitted variables vary across entities (states) but do not change over time (Stock, Watson, 354)." The reason a fixed-effects panel data regression was used in this study is because there are variables in a city which may be correlated with both the presence of an NFL team and the HPI of that city. For example, the same variables that make a city attractive to live in and which have an effect on the HPI may also have an effect on the NFL relocating a franchise to a city. Therefore, some variables unrelated to time may be attracting both new professional sports franchises as well as new

residents to the city. A fixed-effects model panel data regression allows us to control for these variances. For example, a city may have a group of passionate sports fan within it that makes it an attractive place to live for other sports fans, and this also might be attractive to the NFL. Therefore, the fixed-effects model is used to capture effects such as the climate, attitude of citizens, etc. which may attract new entrants to the housing market as well as an NFL franchise. In the case of this study, the data was taken from a balanced panel and used the same time period lengths for all samples.

The regression can be denoted as described below.

$$Y = \beta_0 + \beta_1 x + \beta_2 t + \beta_3 v + \beta_4 s + \beta_5 r + \beta_6 p + \beta_7 n + \beta_8 w + u$$

Where as:

**x** = CPI

**t** = GDP Growth

**v** = Unemployment Rate

**s** = National Effective Interest Rate on Mortgages

**r** = University of Michigan Consumer Sentiment

**p** = Time

**n** = Presence of an NFL franchise

**w** = Velocity of the Money Stock

**$\beta_0$**  = constant

**u** = error term

## Data

**Figure 4:** Six City NFL Panel Data Regression

HPI	Coefficient	Std. Error	T-stat	P >  T	95% Confidence Interval
CPI	.021799	.0148976	1.45	0.149	-.007794 , .0509554
GDP Growth	.0143614	.2419884	0.12	0.902	-.4473613 , .5069332
Unemployment	-.7029475	.1785843	-4.00	0.000	-1.065861 , -.3616046
NFL Team	.5608016	.4170069	1.34	0.180	-.2614432 , 1.383046
Interest Rate	-.0656319	.1831162	-0.36	0.720	-.4266962 , .2954325
Vel. of Money	3.552084	2.082223	1.71	0.090	-.5535959 , 7.657765
Con. Sentiment	-.0049358	.020051	-0.25	0.806	-.0444718 , .0346002
Time	-.0049358	.020051	-2.42	0.016	-.1208163 , -.0124183
Constant	4.472873	5.746029	0.78	0.437	-6.857017 , 15.80276

## Analysis of Data

By regressing HPI by CPI, GDP Growth, Local Unemployment, NFL Team presence, Interest Rate, Velocity of Money, Consumer Sentiment and Time, one can learn a few things. First of all, local unemployment is a primary cause or driver of a decrease in the HPI. With a negative coefficient of  $-.70$  and a T-Stat of  $-4.00$ , there is a negative correlation between local unemployment and the HPI which is statistically significant. The 95% confidence interval for local unemployment ranges from  $-1.07$  to  $-.36$  meaning with 95% certainty there will be a negative coefficient correlation between those values. This means that local unemployment in these eight NFL cities leads to decreases in the HPI.

This logic makes sense on the premise that an increase in unemployment could lead to less people having the financial means to purchase a home, meaning less demand for housing. Because of this, in order for homes to move on the market, they will have to decrease their prices. Also, as unemployment could be a general sign of the well-being of the local economy, an increase in unemployment could symbolize that the local economy is faltering. If the local economy is faltering, local companies could be making less profit and workers could therefore see reductions in wages or hours as a result. Also, for employees working in industries based on commission, a stagnating local economy could mean less income. And, less income could lead to a decrease in housing prices because individuals may not be able to pay what they normally would for a given property.

The next variable that was examined was National GDP growth. The coefficient for this is a positive .014, but there is a standard error of .24 and the T-stat is only .12. So, while GDP growth may measure the overall well-being of the national economy, it does not appear to be highly correlated with the housing price index. Its confidence interval ranges from negative -.45 to .51, giving us very little insight on what the true effect, if any, GDP has.

The consumer price index, which is usually used to measure inflation within the United States seemed to be somewhat correlated with the housing price index. However, the coefficient is .021 with a standard error of .015. Therefore, with a small coefficient and a large standard error, the effect of CPI on the HPI appears to be negligible.

The Velocity of Money, which has a coefficient of 3.55, appears to have a very large correlation with the HPI. Although it has a T-statistic of 1.71, it is reasonable to assume that the Velocity of Money does have a large positive effect on HPI. The velocity of money which measures how fast money is spent is often used to symbolize how quick people are spending and

the strength of the economy. If money is being spent quickly, it generally means that the economy is doing well. And, if the economy is doing well, one could assume that the housing market is also doing well. Therefore, it is not unreasonable to assume that the Velocity of Money would be a good indication of a strong economic climate which could result in houses selling for higher prices.

Consumer Sentiment did not appear to be statistically significant in terms of predicting changes in the HPI.

It appears that an NFL franchise and new stadium does have an effect on the HPI for the given metropolitan area of its location. The presence of an NFL franchise which carries a coefficient of .56 seems to show a pretty large correlation with the housing price index. Although the T-stat is only 1.34, this coefficient seems to be too big to ignore. And, the  $P > |T|$  is .18, so it may not pass the 95% confidence test. But, with 82 percent certainty, we can assume that the NFL does have a positive effect on the HPI. While previous studies such as the case of FedEx Field study show that the NFL does have a profound effect on property values within a 2.5 mile radius of the stadium, it can be reasoned that an NFL franchise also has a very significant effect on the HPI of a given MSA as a whole. This means that bringing an NFL franchise to a respective city may have an effect on housing prices.

Whether it is due to the social capital of the city being increased from the NFL's presence or more people being attracted to the city due to the publicity associated with an NFL team, there does appear to be a positive correlation with the HPI.

Also, when looking at the housing price values for these cities, we begin to see the same results. For example, Charlotte, home of the Carolina Panthers, saw home values rise by an average of \$1,683 per year for the four years prior to having an NFL team. However, after the

presence of the Panthers, home values in Charlotte rose by an average of \$6,870. The data for the home values below comes from the Lincoln Institute of Land Policy as a result of a paper written by Morris A. Davis and Michael G. Palumbo.

**Figure 5:** Charlotte Home Values Before and After the Panthers in 1995

<b>Year</b>	<b>Home Values</b>	<b>Inc. from Prev. Year</b>	<b>Inc. Percentage</b>
1991	\$128,024.84	\$426	0.333858
1992	\$128,666.91	\$642.08	0.501527
1993	\$130,651.52	\$1,984.61	1.54244
1994	\$135,052.6	\$4,401.164	3.368628
1995-----	-----	-----	-----
1996	\$150,637.71	\$9,083	6.416587
1997	\$157,000.14	\$6,362.425	4.22366
1998	\$161,897.45	\$4,897.316	3.119307
1999	\$168,674.31	\$6,776.858	4.185896

After the placement of an NFL franchise, home values in Charlotte rose at a higher rate than the years preceding the placement of the Carolina Panthers. It can be argued that capital improvements and the implementation of the stadium as well as the NFL’s presence helped to raise these property values. But, it is more likely that the property values rose due to the actual amenity effect of having a new stadium and NFL team within the city. Charlotte, while a beautiful city, does not have the same attractions and cultural capital that cities such as New York or Chicago have. When the Panthers started play in Charlotte, they were only the second professional sports franchise in the city as the Charlotte Hornets of the NBA had been present since 1988. It can be argued that the addition of the Carolina Panthers lead to a greater increase



in home values in the region due to the fact that people benefitted from the new amenities that the Panthers provided.

While Charlotte is not exactly comparable to a city such as Los Angeles due to the fact that Charlotte has more growth potential than Los Angeles and fewer amenities, it does illustrate the effect an NFL franchise could have on a prospective city. And, while the effect on Los Angeles may not be as large, there is a good probability that Los Angeles could receive an increase in property values as a result of a new stadium and NFL franchise.

In fact, if you regress the HPI of Charlotte using an OLS robust regression on the same variables as in the panel data study, a coefficient of 2.46 for the presence of the Panthers and their stadium is statistically significant at a 95% confidence interval with a T-stat of 3.73. An ordinary least squares regression was used to measure the linear correlation between the variables. In order to provide a more accurate regression and account for the fact that some assumptions of the model may not be true, a robust regression was used due to heteroskedacity. This means that not only do the Panthers have a positive effect on Charlotte's HPI, it has an exceptionally large one. This may be characteristic of exactly what happens in markets such as Charlotte which highly value an NFL franchise. In small markets such as Charlotte, this effect may be commonplace and symbolic of what an NFL franchise means to a small community. When looking at the effect of the NFL on Charlotte, one can only speculate the negative effects that may occur if an NFL franchise is taken away from a small market such as Buffalo or Minnesota. If the rents around the stadium decreased even in a large market such as Houston, which is the fourth largest city in the United States, when it lost the Oilers, one can only suspect that the impact on the housing market in cities such as Buffalo could be devastating.

**Figure 6:** Charlotte OLS Regression from 1991-1999

HPI	Coefficient	Std. Error	T-stat	P >  T	95% Confidence Interval
CPI	-.048754	.2924043	-.17	.869	-.6487181 , .5512102
GDP Growth	-.6626684	.359255	-1.84	0.076	-1.399799 , .074462
Unemployment	.068399	.2673384	.26	0.800	-.4801341 , .6169322
Panthers	2.461117	.6600646	3.73	.001	1.106777 , 3.815458
Interest Rate	.2352361	.1812118	1.30	0.205	-.1365799 , .6070521
Vel. of Money	10.20827	4.297695	2.38	0.025	1.390132 , 19.02642
Con. Sentiment	.0098994	..0355987	.28	0.783	-.0631432 , .0829419
Time	-.0228384	.232307	-.10	0.922	-.499493 , .4538161
Constant	-12.43494	30.37252	-.41	0.685	-74.75421 , 49.88432

While the effect of the NFL on the HPI of the MSA of Charlotte is quite large, it might not be indicative of all cities such as Los Angeles. This being said, it does show that the NFL does have an effect on the metropolitan areas of the city in which it is present. And, even though Los Angeles does have a lot of great attributes, adding an NFL team could possibly still result in an increase in housing prices in Los Angeles. This effect most certainly will not be as large and may be incremental, but nevertheless, there could be an effect.

In order to determine whether the NFL has a greater effect on smaller market teams or larger market teams in terms of HPI increases, two separate regressions were run splitting the six cities into two groups of three representing small and large markets. Using a panel data regression for the three small market teams in the data (Charlotte, Nashville and Jacksonville), it

is evident to see that these areas saw a major effect on their housing prices as a result of the location of an NFL team.

**Figure 7:** Charlotte, Jacksonville and Nashville Fixed Effects Panel Data Regression

HPI	Coefficient	Std. Error	T-stat	P >  T	95% Confidence Interval
CPI	.020946	.0150684	1.39	.168	-.0089606 , .0508526
GDP Growth	-.102988	.3665294	-.28	0.779	-.8304473 , .6244713
Unemployment	-.368079	.2639791	-1.39	0.166	-.8920044 , .1558464
NFL Team	2.26319	.6253713	3.62	.000	1.022001 , 3.504379
Interest Rate	-.2465517	.2554882	-.97	0.337	-.753625 , .2605216
Vel. of Money	7.615252	2.851653	2.67	.009	1.955511 , 13.27499
Con. Sentiment	.0054338	.0315376	.17	.864	-.0571796 , .0680273
Time	-.1529678	.0382069	-4.00	0.000	-.2287979, -.0771378
Constant	-4.175224	7.048784	-.59	.555	-18.16511, 9.814661

From this fixed-effects panel data regression of the smaller market teams, it can be seen that there is a much larger coefficient for the presence of an NFL team in a smaller market than in all the cities together. A 2.26 coefficient was observed for the presence of an NFL team and stadium and it was statistically significant with a T-stat of 3.62.

**Figure 8:** Baltimore, Houston and St. Louis Fixed Effects Panel Data Regression

HPI	Coefficient	Std. Error	T-stat	P >  T	95% Confidence Interval
CPI	.2410116	.1348317	1.79	.077	-.026592 , .5086152
GDP Growth	-.0053014	.3068343	-.02	0.986	-.6142826 , .6036797
Unemployment	-.8386442	.242884	-3.45	0.001	-1.320702 , -.3565867
NFL Team	-.4927182	.5730623	-.86	.392	-1.630088 , .6446518
Interest Rate	-.1674754	.2831303	-.59	0.556	-.7294106 , .3944598
Vel. of Money	-4.519038	3.262581	-1.39	.169	-10.99436 , 1.956281
Con. Sentiment	.0596717	.0312943	1.91	.060	-.0024389 , .1217822
Time	-.2461316	.1472001	-1.67	0.098	-.5382831, -.0460199
Constant	-12.76613	13.2299	-.96	.337	-39.02381, 13.49155

In the case of the large market teams sampled in this survey, there appears to be a negative coefficient for the presence of an NFL team which is not statistically significant. However, the negative correlation could be attributed to the fact that Baltimore is a significant outlier in this study. Baltimore has a negative coefficient of -2.08 for the presence of an NFL team which is statistically significant and has a T-stat of -2.34 when regressed using an OLS robust regression as was defined and used with Charlotte earlier. Houston had a positive coefficient of .18 which was not statistically significant and had a T-stat of .2, while St. Louis had a positive coefficient of .092 which had a T-stat of .23 and also was not statistically significant. Therefore, the NFL does not appear to have a significant effect on the HPI of larger market teams. The case with Baltimore might be attributed to an inefficient spending of public funds which always tends to lead to decreases in property values. Inefficient local governments

can adversely affect house prices, and this may be the case with Baltimore. As was mentioned before, with Maryland losing \$9 million a year on the Camden Yards project, and the economic impact of the Ravens stadium being severely overestimated, the decrease in property values as a result of the new NFL team and stadium may be instead caused by a poor financial plan for the stadium or the lower than expected economic impact of the stadium.

## **Conclusions**

After looking at the regression data, it can be reasoned that small market teams and cities saw a large impact on the HPI as a result of the presence of an NFL franchise and stadium. With a positive coefficient of 2.26 and a T-stat of 3.62, the presence of an NFL team and stadium in small markets appeared to have a significant positive impact on the HPI. Because of this, one can conclude that the NFL does have a large impact on housing prices in smaller markets. In the future, public policy makers of smaller cities may see attracting a professional sports franchise as an opportunity to spur the housing market of a given area. Also, as an NFL team may offer many social capital improvements, adding a team and financing a stadium could be a good policy decision to create city pride, civic engagement and higher home values. Having property values increase as a result of an NFL team and stadium could also lead to increased revenues for local governments as a result of having greater property tax revenue.

In regards to larger markets, it appears the effect of an NFL team on the HPI is quite negligible. With the exception of Baltimore, the effect of the NFL on the HPI of large market teams in our study was small and not statistically significant.

Based on this data, it can be reasoned that effect of the NFL on the HPI of Los Angeles will be negligible. Therefore, the addition of an NFL franchise to Los Angeles will not have an effect on the HPI or property values of the MSA as a whole.

When analyzing both of the proposed plans, it appears neither will have an effect on the HPI of the MSA of Los Angeles as a whole. However, the plan backed by Edward P. Roski for the Los Angeles stadium at Grand Crossing, may be the option that would provide the greater effect on housing prices. Because the area where the Grand Crossing stadium would be located is less developed than downtown Los Angeles, placing a team and stadium there may lead to greater capital improvements and in turn greater property values in that area. And, because the effects of these capital improvements in an area with less development would be greater than in a location adjacent to the Staples Center, the effect this could have on housing and property values would be greater for the Grand Crossing's plan. Therefore, if Los Angeles wants to maximize the impact its NFL franchise will have on housing prices, selecting the Roski-backed plan at Grand Crossing would be the best option.

Also, if the city of Los Angeles is already in-debt and inefficiently spends its funds on this project as Maryland had done with Camden Yards and the Raven's stadium, then a decrease in the HPI could be a result of such actions. Although as is expected with all projects, there will be some inefficiency and this won't necessarily impact the HPI. However, with the city of Los Angeles already in debt from such projects, providing this assistance could result in a decrease in property values due to increased debt and inefficiency of the local government. If Los Angeles does experience an increase in housing values as a result of the new stadium and NFL team, the increase in property tax revenue may offset this expense and negate this effect.

With the AEG proposal for Farmers Field in close proximity to the Staples Center already approved, it appears Los Angeles is making strides towards receiving an NFL franchise. The new stadium should provide a great incentive for an incoming team and will provide great amenities to the city of Los Angeles. If given an NFL franchise, the new stadium should provide an

attractive venue to watch a game in and will be more enticing to fans who would otherwise not go to games at the old complexes. However, past lack of interest in the NFL is something that Los Angeles will have to fight. If they could foster a sense of tradition and pride in their new franchise and entice people to attend through the use of a new stadium, then they stand a chance of being a very successful market for an NFL team. To the contrary, if fan support mirrors that of the Rams and Raiders in the early 90's then an NFL team will not benefit from relocating to Los Angeles.

The new stadium will combat many of the problems the other two franchises had and will provide an opportunity for success. But, only fan support alone could be the determining factor of the viability of an NFL franchise in Los Angeles.

In the future, additional studies may want to look at the potential of reverse causality and that possibly the NFL is attracted to strong markets where maybe the rise in HPI is attracting the presence of a team. However, looking at Carlino and Coulson's study and the case of Houston, this doesn't appear to be the case as the rents did not grow at the same rate as Dallas after the Oilers left, yet Houston regained a team in 2002. Also, additional studies may want to look at the effects on commerce and local establishments in close proximity to the stadium to see what effects the NFL has on those businesses.

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## ACADEMIC VITA of Joseph T. Kurtek

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### EDUCATION:

**The Pennsylvania State University** University Park, PA  
The Smeal College of Business  
Bachelor of Science, Economics Class of 2012  
History Minor  
Schreyer Honors College  
Thesis Title: The Implications of the Addition of an NFL Team and Stadium on the Los Angeles Housing Market  
Thesis Adviser: Dr. N. Edward Coulson

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### WORK EXPERIENCE:

**Ford Motor Company** Dearborn, MI  
*Global Purchasing Intern* May 2011 – August 2011

- Worked extensively on cost model analysis for an individual commodity with three separate suppliers
- Managed a market test and resourcing of air intake system parts
- Coordinated an engineering and management team in the sourcing of over 30 individual parts
- Created various financial documents to explain cost differentials and potential cost savings

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### LEADERSHIP ACTIVITIES:

**Penn State IFC/Panhellenic Dance Marathon** Fall 2009 - Spring 2012  
*Morale Committee Member* ([www.thon.org](http://www.thon.org))

**Phi Alpha Delta- Pennsylvania State University Pre-Law Chapter** Fall 2010- Spring 2012  
*Chartering Member and 2010-2011 Community Service Chair*

**Special Olympics Pennsylvania Summer Games** Summer 2010  
*Volunteer (Security)*

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### COURSEWORK EXPERIENCE AND PROJECTS:

**Major League Baseball Advanced Media Project** Spring 2010

- Researched and developed a plan of action to target the out-of-market fans on college campuses
- Developed innovative new concepts such as allowing banter between fans during games online
- Presented a marketing strategy to Ed Weber, V.P. of MLBAM

**Maji Kekee Inc. Project** Spring 2010

- Created a 60 page business plan for a proposed upstart Kenyan water drill company
- Established and priced items to make the drill affordable to Kenyan entrepreneurs
- Attempted to provide Kenyan entrepreneurs with a source of sustainable income while providing access to fresh and clean water for Kenyan citizens

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### OTHER AWARDS AND ACCOMPLISHMENTS:

Penn State Renaissance Scholarship Recipient and Renaissance Scholar

Elks National Foundation MVS Scholar  
Whitney Trustee Scholarship Recipient  
Phi Kappa Phi Honor Society Member  
John R. Evans Scholarship Recipient  
Jim and Peg Stine Scholarship Recipient  
Elmer S. and Francis R. Christ Scholarship Recipient

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**HOBBIES AND OTHER CONTRIBUTIONS:**

Sports Writing (had several articles published in The Daily Collegian), Weight Lifting, Basketball, Baseball and Piano