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Studying the Economic Impact of Cities Hosting the Super Bowl

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ABSTRACT

Every year, a new city fights for the rights to host an upcoming Super Bowl. Lobbyists and committees are assembled to prove their case to the NFL and are put through a serious vetting process. The personnel focus their attention on and make claims about the weather, new stadium (if applicable), and accommodations available in their city. The paramount aspect of their assertion stems from the economic impact the major event will draw forth. The data and analyses up to this point have generated mixed conclusions on the true benefits from hosting the Super Bowl. In this paper, I propose a new regression that measures the economic impact on host cities in the states of California and Louisiana.

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Chapter 1

Introduction

Overview of the Super Bowl, viewership, and NFL's claims

Occurring once a year in the month of February, the Super Bowl is played out amongst the viewership of millions. Americans around the nation tune in to watch their favorite athletes compete against one another, under bright stadium lights and in front of a roaring crowd. Fanatics from every region observe the game, praying that their coach can lead their team to victory. The goal is to see your team raise the Lombardi Trophy. The Super Bowl is the most televised and watched sporting event in the United States. According to NPR.org (2015), this mega event held the top 7/8 spots for the most-watched broadcasts in history. In 2015, NBC released an announcement to the press that 114.4 million people viewed the Seahawks-Patriots matchup. Evident throughout network broadcasting data, obtaining the rights to project and broadcast the Super Bowl is at the forefront of FOX, NBC, and CBS's objective list.

Correspondingly, hosting the Super Bowl is the most prominent target for lobbyists, team owner(s), and organizational committees. This mega event is both portrayed as and projected to bolster an economic impact of \$300 million- estimates have reached close to \$400 million in previous years. Concluded in a study by the NFL in 1999, Super Bowl XXXIII was approximated to attribute \$393 million to the city of Miami (Baade and Matheson, 2003). The large increases in tourism, projected expansions in tax revenue, and spike in food/restaurant sales entices city officials to explore this opportunity. Based off of the NFL's calculations and forecasts, hosting the Super Bowl is the most profitable event available for cities who are seeking to explore means to an economic boom.

Examining the conditions that must be met by the host city

Explored by Smith and Smith (2008) specific conditions must be met by a city, in order to host the Super Bowl. As well, it is indicated that the costs, benefits, and return on investments are meticulously observed when exploring who will accommodate the Super Bowl for a particular year. The Super Bowl planning committee vigorously researches and examines the amenities, capacity numbers, and market trends of the city in question. In order to select the appropriate host for the sporting event, executives assess the availability of labor, environmental regulations, proximity to materials, and construction costs (Heizer and Render, 2007; Pelagagge, 2001, as cited in Smith and Smith, 2008). Hosting a major event requires additional staff to direct traffic, clean the facilities, scan tickets, sell merchandise, and ensure that proper security measures are being taken. Furthermore, it is highlighted in Smith and Smith's 2008 study that shipping and transportation costs, media space, practice facilities, and high-end hotels are used as criteria. The process for selecting a host city is chosen in a timespan of three to five years in advance. It is apparent that weather, media coverage, and regional conditions are utilized in the venue selection process. Selecting the host city is a diligent process that requires substantial time, energy, focus, and money. Although the costs to host such an event may stir the local citizens, lobbying governments and city officials vow that the economic benefits from the Super Bowl outweigh the upfront fees.

Analyzing the social benefits of hosting the Super Bowl

Additionally, hosting a major event is cited as leading to social benefits, increasing the quality of life, and pride within the community (Groothuis and Rotthoff, 2016). Projected on television sets across the nation, the host city is displayed in an elegant manner. Astonishing views, eye-catching landmarks, and well-decorated street corners are captured on broadcast. As a result, network channels bolster the host city's name and appearance. This enhances the appeal

and probability of making the host city a tourist destination in the future (Hall, 1989). Residents gain an added sense of pride from hosting major events- i.e. the Super Bowl- and work diligently to restore and improve their community. A new demand for better goods and services arises, which revitalizes an area, and there is a rise in the emotional uplift of locals (Hall, 1989). Sports play an important role in acting as a catalyst for community flourishing and city prosperity.

Delving into the perceived payoffs of hosting the large scale event

In hindsight, the football game being played during the day of the Super Bowl is a minuscule component, when compared to the events that must be ensued prior. Planning for this public competition requires hours, days, and months of strategic planning. The payoff is perceived via the economic, social, and political structures of a society- a host city in this case (Babiak and Wolfe, 2006). These benefits are recognized in the form of CSR- corporate social responsibility- initiatives. Babiak and Wolfe (2006) note that the Super Bowl has the potential to improve infrastructure, bolster investments, create new jobs, and enhance the image of a city (Ahmed, 1991, as cited in Babiak and Wolfe, 2006). Given the findings from reports published in 2006, it is estimated that \$18.5 million was spent on the Super Bowl in 2006 and the final economic impact surfaced at approximately \$250 million- for the host city of Detroit (Rovell, 2006 and Walsh, 2006, as cited in Babiak and Wolfe, 2006). When preparing for the large scale event, the host committee must address the concerns brought forth from the opposing side- i.e.: why is the money not being spent elsewhere and/or what is being done to help the environment by hosting this event. Extensive board meetings and conferences are conducted, in order to ensure that all concerns are being answered with a thoughtful response/decision- to appease the masses. Detailed in the research conducted by Babiak and Wolfe (2006), 50 events were hosted in 12 communities within the host city of Detroit in 2006. These planned affairs- a bi-product of the Super Bowl- included infrastructure construction, charities, educational programs, and

diversity initiatives. In light of the Super Bowl occurring, it appears that the selected host city benefits economically through financial, educational, and social gains.

Given the positive outlook portrayed in the paper thus far, it appears as though the NFL's superb claims of economic generation are true. Conducted via a data analytics study, Jeffrey H. Humphrey projected Super Bowl XXVIII to create 2,736 jobs and attribute \$166 million to the city of Atlanta, Georgia (Baade and Matheson, 2003). Roughly 46% of the economic gains were via a direct impact from the hosting city. This effect was observed by multiplying the average visitor's expenditures by the number of days they spent visiting the city. Approximately 54% of the remaining impact surfaced through indirect consumption and production. Although significantly less than the current projections, it can be observed that the Super Bowl does have an impact on host cities. Albeit, economists have argued, stating that the gains- in fact- are not as large as we perceive them to be. The studies used and conducted by the NFL have been noted as having subjection to significant error and manipulation (Matheson, 2002).

Brief insight into the regression analysis being conducted in this paper

In this paper, I will consider the regressions and models previously built and analyze their results. Previous studies and experiments have focused on taxable sales data in the host cities of Florida and Texas over a select period of time. The results and conclusions analyzed thus far from economic research display a minimalistic impact on the hosting city's economy. Via the data I have collected, I will be observing the host cities in California and Louisiana. These two states are the most prominent ones to host the Super Bowl outside of Florida. The previous research and assessments of this mega-event's impact have been geared towards Miami and Houston.

If apparent and truthful to the previous studies conducted, the data observed from the western and southern regions of the United States will show similar results to past studies. The

conclusions brought forth by the regression and analytical insight performed will bring about a handful of questions. If the Super Bowl does not appear as bountiful and elegant as the NFL depicts it to be, how come cities lobby for it every year? Additionally, my work will address the economic impact apparent in the host cities- from monetary and labor aspects. It is my desire and passion to address the NFL's hypothesis and determine whether or not it is worth it to host the next Super Bowl.

Discussion of the paper's layout

The following sections provide a more in-depth picture of the previous models and literature used and created. Necessary terms and definitions relevant to the information at hand will be introduced and compartmentalized. Further, I will address the model I have created and define the variables I have chosen to include/exclude in my regression. I will address how the model was formulated and how it is used to perform an analysis. This section will also describe how the data was collected and the sources necessary for extraction. The final section will address the results I have concluded and potential manipulations/stipulations that have the ability to weaken the data set.

Chapter 2

Literature Review

Synopsis of the Super Bowl and funding

First hosted at the Memorial Coliseum in Los Angeles, California, the Super Bowl was brought to existence in 1967. Since the Green Bay Packers victory in that historic moment, teams have been fighting every year for a chance to make it through the playoffs. There is one goal in mind for every player: to hoist the Lombardi Trophy on the podium, in front of millions of viewers. On the other spectrum, the objective for team committees and city officials is to host the most valuable sporting event in the United States. The economic benefits brought forth from the Super Bowl are perceived as ways for cities to build new stadiums and minimize the team's required contributions for construction (Baade, Baumann, and Matheson, 2008). Between 1990 and 2010, \$25 billion was spent on sporting facilities and the vast majority of funding was brought forth through public offerings and tax revenue (Siegfried and Zimbalist, 2006).

Defining consumer surplus and externalities

According to Siegfried and Zimbalist (2006), public funding for these stadiums is rationalized via consumer surplus, externalities, and public goods. Consumer surplus is denoted as the added benefit a person receives- if he/she is willing to pay \$1,000 for a Super Bowl ticket, but instead pays \$600, there is a consumer surplus of \$400. Furthermore, externalities are brought forth when an indirect party is positively or negatively affected by the actions of another. When a city decides to host the Super Bowl, tourism, foot-traffic, and loudness increase; this affects the peace and quietness of one who does not prefer sports. A public good is a commodity that is available to each resident of the area and is paid through taxes. In the case of a stadium, the presence of a sports team is non-rival and non-exclusive; residents are not barred from enjoying their team. Tying it all together, cities perceive the benefits from hosting the Super Bowl as both

positive to the satisfaction of residents and increasing overall revenue. This allows governing officials to revitalize areas, bolster the city's appearance, and permit new arena construction.

Introduction to previous models

In 1999, Professor Philip Porter “began the crusade” to uncovering the economic impact of hosting the Super Bowl. Porter used a regression analysis similar to the ones economists use today to measure the fiscal effects. Via his data derived from sales receipts, he concluded that the Super Bowl did not produce “Hail-Mary” results- economic impacts were greatly overstated. Little to no effects were observed in the host cities of Miami, Tampa, and Phoenix (Coates, 2006). Put more bluntly, there was no increase in taxable sales for the host city (Matheson, 2002). Albeit, the data used was limited in size, relating to only six Super Bowls. A year later, Baade and Matheson (2000) reported that the Super Bowl only produced 537 additional jobs and \$32 million for the host cities. Their study involved twenty-five Super Bowls ranging from 1973 to 1997. According to the two economic studies presented thus far, the data skews in a negative manner for the NFL. The NFL's studies and predictions of \$300-\$400 million in added benefit do not appear evident and “real.”

It is palpable that the NFL conducted an ex-ante study, similar to the one conducted- and previously mentioned- by Jeffrey H. Humphrey. In economics, an ex-ante research experiment is performed when predictions are made on the number of people expected to attend, the duration of days that they will stay, and the assumed amount of money they will spend (Baade, Baumann, and Matheson, 2008). Jeffrey H. Humphrey postulated in his regression that the average fanatic would spend \$252 and the summed number of days that all tourists would stay for the Super Bowl amounted to 306,680. Utilizing these numbers, he estimated an economic benefit roughly half the size of what the NFL advertises- \$166 million. Baade, Baumann, and Matheson (2008) note that the ex-ante studied is inherently flawed because lobbyists and officials over project the

number of people that will attend an event. In doing so, the economic benefits are over stated and do not reflect a true composite of what is actually set to occur.

Uncovering the limitations evidenced in previous models

Additionally, it is important to draw attention to three primal issues that are mentioned in almost every- if not all- models pertaining to the economic impact of the Super Bowl. The following are included in the ex-ante regressions and are denoted as the substitution effect, crowding out, and leakages.

Substitution- This effect is prominent in all facets of economics and is depicted when a consumer chooses to spend his/her money in one area rather than another. As a result, the money is substituted for one good over another.

A good share of money spent at sporting contests is money not spent elsewhere in the local economy—one form of entertainment expenditure substituting for another. Thus, while sports teams may rearrange spending in an urban area, they do not add much to it (Siegfried and Zimbalist, 2006).

Baade, Baumann, and Matheson (2008) also note that people attending the Super Bowl may be in town for other reasons. That is they are visiting family, tending to work, among other options, and they choose to go to the game in their free time. The money they spend at the game could be substituted at local shops and eateries instead.

Crowding out- Host cities of the Super Bowl are located in large metropolitan areas that experience regular tourism throughout the holidays, winters, and summers. That is, the Super Bowl is an added bonus for tourism. Had the event not taken place in this city, tourism would still occur. During the time of the Super Bowl, the host city is inundated with foot-traffic and locals are deterred- they strand far away from the event. An increase in demand for hotels, shopping, and eating raises prices in the city and residents are dissuaded from consuming

(Baade, Baumann, and Matheson, 2008). The economy is supplanted rather than supplemented (Matheson, 2002).

Leakages- This economic term is apparent when money and funds move out of the local economy and to an external one. Baade, Baumann, and Matheson (2008) report leakages when hotels or restaurants raise room/food prices, without changing wages.

As a hotel's revenue increases without a corresponding increase in costs, the return to capital (as a percentage of revenues) rises, while the return to labor falls. Capital income is far less likely than labor income to stay within the area in which it is earned (Baade, Baumann, and Matheson, 2008).

That is, since chain corporations are abundant in metropolitan areas and host cities, the profits are sent to corporate, which is located elsewhere. This money has now left the host city and is being spent elsewhere. Siegfried and Zimbalist (2006) also reference leakages as players, coaches, and owners spending their salaries outside of the city for which they play. Most athletes and organization personnel do not live in their city of play outside the season, rather they decide to live and consume products in other areas of the United States.

Putting together the facets of the ex-ante research model, it is imperative to define the multiplier that is used in the regressions pertaining to the Super Bowl. A multiplier amplifies the financial effect of spending in the local economy- money circulates throughout the area and passes through the hands of multiple residents (Investopedia.com, 2020).

It is the notion that direct spending increases induce additional rounds of spending due to increased incomes that occur as a result of additional spending (Baade and Matheson, 2003).

According to Siegfried and Zimbalist (2006), the appropriate multiplier for a regression model surrounding the Super Bowl would be roughly 1.25. However, previous studies conducted tend to use a higher multiplier which skews the data and overstates the economic impact perceived.

Analysis of Baade and Matheson's 2003 models

Assessing one of the most prominent Super Bowl studies conducted, Baade and Matheson presented a revised model in 2003. Their model accounted for the deficiencies explained above and is used to explain how much economic activity increases during the Super Bowl- in regards to the host city. They utilized two models in their research to explain the data and draw upon a conclusion.

Model 1 (Fixed Effects) - This model focused on 73 metropolitan areas that have hosted a Super Bowl in the past and/or are home to a sports franchise. Utilizing real personal income, state and local tax averages, oil booms, and population size statistics, the variables are used to examine changes in personal income. It is necessary to detail that city growth rates are a fixed percentage- all cities are acting the same regardless of their size, composition, and reactions to sudden and drastic changes. This is an extreme assumption to make and is noted as a flaw within their work. Their study concludes with insignificant data; hosting the Super Bowl only leads to income growth of 0.4%.

Model 2 - This revised model is created to re-predict changes in income for the host cities. The major changes denoted in this regression include: the Super Bowl variable is now a dummy variable and that the equation is separately run for each host city. Furthermore, additional variables were used to help aid in the predictive success of the model. Wages, taxes, income levels, and growth rates were factored into the equation- as done similar to model 1. Upon conclusion of their results, they found that the Super Bowl reduced personal income and created negative economic conditions within the host cities. Furthermore, it is noted in their study that this downturn was correlated to the poor economic conditions in Los Angeles. Baade and Matheson (2003) found that the odds of the Super Bowl resulting in a negative impact on the host city were 23/100- 23%.

The model estimates that the average host city experienced a reduction in personal income of \$133.4 million relative to the predictions of the model. The Super Bowl has an overall negative impact on the host city economy of \$133.4 million (Baade and Matheson, 2003).

However, it is important to mention that some cities did experience a boom in their economy- the effects can be moderately tied to hosting the Super Bowl. Baade and Matheson (2003) state that the models are unable to explain all of the variation that is occurring in the income variable due to omitted variables. Their analysis describes that a 1% error in predicted economic growth converts into a \$200 million difference for small cities and a \$2 billion discrepancy in the largest city.

The final results of their 2003 analysis were further examined using a probabilities table. The NFL's claims of an economic impact of \$300-\$400 million had a probability of occurring between 0.87% and 5.00% (Baade and Matheson, 2003). The two economists found that an economic impact of \$100-\$252.7 million had the likelihood of materializing between 10% and 47.40%. Overall, the predicted impact from hosting the Super Bowl was found to be approximately \$92 million- a 50% probability of occurring.

Summary of Baade, Baumann, and Matheson's 2008 model

Furthermore, in 2008, Baade, Baumann, and Matheson reassessed their findings in the creation of a new model. Via this model, they utilized taxable sales to determine the economic impact of cities hosting the Super Bowl. In this regression they utilized ex-post factors- such as lockouts and strikes. Ex-post data uses information pulled from after an event or scenario occurs, rather than predicting the outcome(s) - ex-ante. Additionally, they incorporated the ex-ante factors and deficiencies evidenced earlier in this paper. Noted in their paper are the findings from Coates and Humphreys in 2002- hosting playoff games is statistically insignificant on per capita income. Twenty-five years of data, taken from the state of Florida, are used within their

regression. It is important to identify that the annual data was divided by twelve to create a monthly portrayal within the model. This is done to determine if there is a spike in taxable sales revenue during the month of the Super Bowl. According to their model and findings, the NFL's claims about the Super Bowl bringing in \$300-\$400 million in economic benefit are misleading. Baade, Baumann, and Matheson (2008) found that the Super Bowl only attributed \$99.6 million for the city of Miami- $\frac{1}{4}$ of what the NFL projected in their assessment.

Chapter 3

The Method

Introduction to Panel Data sets

Mirroring prior data sets and analytical models used to perform studies on the economic impact of the Super Bowl, I have chosen to utilize a Panel Data set. Panel Data- also defined as Cross-Sectional Time Series Data- is utilized when statistics and numerical information are being observed across a duration of temporal length. Defined and reported by Richard Williams (2015), when variables are measured for similar subject matter across multiple points in time, it is most effective to use a longitudinal data set (Panel Data).

We need special techniques for analyzing such data, e.g. it would be a mistake to treat 200 individuals measured at 5 points in time as though they were 1,000 independent observations, since doing so would usually result in standard error estimates that were too small (Williams, 2015).

When this occurs, each observation is recognized by the entity it characterizes- for this study it is the county- and the point in time it is relating to (Tybout, 2021). These dimensions are denoted as cross-section, i , and time series, t (Hsaio, 2007). Performing the economic impact analysis through this methodology allows for repeated observations to occur for one particular variable.

If the unit of observation is “country-month”, it means there are multiple observations for countries over time. The interval of the observation is a month (KU.edu).

Outline of the Panel Data set used within this regression analysis

In this economic study, the material is focused on county data across the states of California and Louisiana. The unit of observation is the county-month for which the Super Bowl is being held. The measurement interval is derived from a monthly timeline. The overall objective is to identify and explain how the independent variables are contributing and affecting the dependent variable, based upon a time criteria. For the use of this study, there are two

dependent variables- per capita income and unemployment rate. These two response variables are being measured on the county, state, and national levels. It is important to note- this will be explained further in depth in the data section- that the state and national output variables are being utilized when there is an absence of county statistics. The independent variables are being regressed throughout the model to determine how they impact the host city when the Super Bowl occurs. If the Super Bowl is to have a noticeable effect on the host city, it will be apparent in the data set. The same holds true for the latter- that being, the Super Bowl does not generate the economic effects the NFL claims it to. The impact will be observed through the outcomes of the Panel Data set, as well as the coefficients reported on the dependent variables.

Additionally, the data is organized into long format. This means that there is one record for each county for each time period (Williams, 2015). The counties, months, and additional variables are listed chronologically. To note, this data is organized into columns in Excel. Building upon the data structure, I will be examining the regression through a fixed effects model. In experiments, controlling for a variable is often hard to do so. Richard Williams (2015) states that:

Unmeasured differences between subjects are often controlled for via random assignment to treatment and control groups... because of random assignment, we can be reasonably confident that the effects are approximately equal for all groups.

Defining the fixed effects component of the model

However, running a fixed effects model allows for the regulation of a variable(s). Firebaugh, Warner, and Massoglia (2013) define the fixed effects model as a way to estimate certain effects in a regression where variables are frequently measured over time- precisely what is occurring in this regression analysis. Fixed effects models are most effective when independent variables are hard to measure and have the tendency to change slowly/not at all (Firebaugh, Warner, and Massoglia, 2013). This form of analysis permits for stability in the

dataset and more accurate results. Additionally, the fixed effects model enables the use of both constant and inconstant data points. To note, the time-invariant variables are controlled for whether or not they are measured for in the model (Williams, 2015).

Concluding on the model being used for this economic study of the Super Bowl, it is imperative to touch on the flaws it contains. The fixed effects strategy does not control for variables that change over time (Williams, 2015). Nor does it regulate for variables that are not included in the regression if they are varying over time. Furthermore, omitted variables in the data set have the potential to create bias. For reference:

Bias is defined as any tendency which prevents unprejudiced consideration of a question (Pannucci and Wilkins, 2011).

The omission and inclusion of variables creates the ability for data to be skewed. However, it is necessary to mention that the fixed effects model has the ability to prevent such bias from occurring (Firebaugh, Warner, and Massoglia, 2013). This will be addressed in depth later on in the paper.

Chapter 4

The Equation

Analyzing the regression formula used in this study

Explained above, the regression equation being used in this study is tied to a Panel Data set model. The formula created to study the economic impact of the Super Bowl is as follows:

$$Y_{it} = \beta_0 + \beta_1 I_{1it} + \beta_2 X_{1it} + \beta_3 I_{2it} + \beta_4 X_{2it} + \beta_5 I_{3it} + \beta_6 X_{3it} + \beta_7 I_{4it} + \beta_8 X_{4it} + \dots + \alpha_i + u_{it}$$

In this equation, “Y” is the predicted variable- the dependent component. The subscripts attached to it are denoted as “it.” The unit “i” indicates the individual county in the sample, while “t” is reflective of the month- the time variable. Furthermore, “ β_0 ” is the constant term for the regression; the ensuing beta terms are reflective of the slopes for each independent variable being used in the study. This measures the responsiveness of the predicted variable- how much it will move given a 1 unit change in the independent variable. Each beta term has an “X” assigned to it. This is the explanatory variable- each “X” signifies an independent variable being used in the regression. The independent variables being used in this regression analysis include: population, unemployment rate, tax revenue, expenses, and consumption. The “I” component of the equation reflects each dummy variable being used to measure the economic impact of the Super Bowl. The dummy variables are: recession, lockout, dotcom bubble, and Super Bowl month. Since a fixed effects regression is being utilized, “ α_i ” is included in the formula. This is used to account for the effects that are difficult to trace and calculate over time. To account for error in the regression model, “ u_{it} ” is employed. This regression equation is utilized for each dependent variable in the study; the same formula is applied when measuring the effects of the Super Bowl on per capita income and the unemployment rate.

Chapter 5

The Data

Overview of the counties and timeline utilized in this study

Touched on in the description above, the data being used is constructed via observations from counties that hosted the Super Bowl. The counties being utilized for this study are located in California: Los Angeles, Pasadena, Palo Alto, San Diego, and Santa Clara, as well as in Louisiana: New Orleans. In total there are twenty two Super Bowls being analyzed. In regards to the time series, each Super Bowl is being studied using a pre and post effect. For every Super Bowl, the data is documented from the year prior, the year in which the event is being held, and the year following. Utilizing a Panel Data set, the time interval is being displayed in monthly terms. The data cites back to 1966 (the year prior to the first Super Bowl) and spans through 2017. However, it is important to note that the month parameter does not account for gap years. In other words, that data is not continuous for every month since 1966.

Dummy Variables

Within the data set, four dummy variables have been created. These dummy variables include: recession (Rec), lockout (Lock), dotcom bubble (DC_bub), and Super Bowl month (SB_Mon). Dummy variables take on a value of “0” or “1,” and are used as filler numbers.

In a regression model, a dummy variable with a value of 0 will cause its coefficient to disappear from the equation. Conversely, the value of 1 causes the coefficient to function as a supplemental intercept, because of the identity property of multiplication by 1 (Garavaglia and Sharma, 2016).

These variables are relevant in determining the economic impact associated with the Super Bowl. Recessions and the Dotcom bubble influenced the way consumers perceived the value of money- spending versus saving. In periods of economic growth and expansion, consumers will spend more. With added income, people are inclined to substitute away from

saving and towards present consumption. The latter holds true when economic crises are occurring. In regards to the lockout variable, this accounts for the month(s) in which the sport was not being played. Given that the event is not occurring, the monetary transactions occurring within a county cannot be attributed to the sport. External factors are contributing to the economic growth. Lastly, the Super Bowl month is being denoted as a dummy variable to differentiate between when the event is occurring and when it is not. In doing so, any impact on the economy can be attributed to the sporting event.

Independent Variables

Furthermore, the population, per capita income, unemployment rate, taxable sales revenue, and recreation expenditures are being reported on a county level. These factors are relevant to the economic growth rates occurring within a county. As these metropolitan areas expand over time, the population within them is expected- and does- grow. This independent variable influences the monetary cycle that is occurring within the host city. Additionally, per capita income is reflective of the wealth an individual accrues overtime. The unemployment rate is an economic indicator of how the county's economy is performing. When the Super Bowl is occurring, it is expected that the unemployment rate will drop. This can be attributed to the increase in demand for hourly-waged workers- evidenced in the introduction section of this paper. Moving forward, tax sales revenue has been incorporated in almost every study focused on the economic impact of the Super Bowl. Tax sales revenue has evidently risen in the month of the Super Bowl. This is due to the increased volume of transactions occurring during the event. The same logic holds true for recreation expenditures. These expenditures account for the county spending money on sporting necessities- i.e. admissions-, in order to host the Super Bowl. The influences from these independent variables are essential to uncovering the economic impact that occurs.

Substituting for missing county data

In the absence of county wide data, state data for the population, unemployment rate, and tax sales revenue is substituted into the regression. Although the economic data will not be subjected to the specific county(s) for a duration of time- but rather for the state- the coefficient on the dependent variable will still be relevant. Since the data set spans back to 1966, it is crucial to note that there are limiting factors on the county parameters. This will be addressed further in depth in the discussion portion of this paper. The data for this model has been pulled from the Bureau of Labor Statistics, U.S. Census Bureau, Federal Reserve Economic Data, auditing offices, and additional economic resources. The departments' databases did not keep track of county information until the late '80's. It is also imperative to note that per capita consumption is reported on a state level. This variable has not yet been reported on a county level basis. Utilizing this variable will allow for a more complete observation of the economic impact generated from the Super Bowl. Per capita consumption displays crucial evidence to whether or not the economy is further stimulated by the major event.

It must also be brought to attention that nationwide data for the United States is substituted in in certain scenarios. When county and state unemployment rates are both missing, the United States unemployment rate is factored into the equation. This variable is used in the case of Los Angeles and a portion of New Orleans. Prior to 1976, there is no reported unemployment data for the states of California and Louisiana. Furthermore, in the absence of per capita state consumption, per capita United States consumption is reported. Before 1997, per capita consumption was only documented on a nationwide basis. Although the results may be "inappropriately" skewed from this action, I believe it is a necessary parameter to include. The data that is derived from the inclusion of this variable is effective. As mentioned earlier, the "flaws" of this model will be addressed in the discussion portion of this paper.

Use of logarithms

Moving forward, it is imperative to mention that the logarithms of select variables have been taken. These include all independent variables, with the exception of dummy variables and the unemployment rate. Logarithmic values allow for a more precise comparison between counties of different size. For instance, Los Angeles has a greater population size in comparison to Palo Alto and Pasadena. As a result, Los Angeles' tax sales revenue and recreation expenditures will be much higher than the latter. By using logarithms, we are responding to the data's skewness towards larger values (Robbins, 2012). In essence, any outliers within the dataset are being reduced. Overall, this gives a more precise picture of the economic impact brought forth from hosting the Super Bowl.

Chapter 6

The Results

Table 1. *Dependent Variable: County Per Capita Income*

Variable	Coefficient	Standard Error	T-statistic	P > t
Recession	-.1257624	.0347703	-3.62	0.000
Log of County Population	-.0497751	.0148572	-3.35	0.001
Lockout	0	(Omitted)		
County Unemployment Rate	-.036855	.008547	-4.31	0.000
Dotcom Bubble	-.2860196	.020971	-13.64	0.000
Log of County Tax Revenue	-.7086651	.0488335	-14.51	0.000
Super Bowl Month	-.015081	.0356992	-0.42	0.673
Log of County Expenses	.7346276	.0666893	11.02	0.000
Constant	12.36058	1.396309	8.85	0.000

Table 2. *Dependent Variable: County Unemployment Rate*

Variable	Coefficient	Standard Error	T-statistic	P > t
Log of County Per Capita Income	-1.943475	.4507068	-4.31	0.000
Recession	-1.081209	.2497254	-4.33	0.000
Log of County Population	.0578303	.11031	0.52	0.601
Lockout	0	(Omitted)		
Dotcom Bubble	-1.12385	.189342	-5.94	0.000
Log of County Tax Revenue	-2.944893	.4468278	-6.59	0.000
Super Bowl Month	.121901	.2592161	0.47	0.639
Log of County Expenses	2.462162	.5722412	4.30	0.000
Constant	39.61373	11.38998	3.48	0.001

Table 3. *Dependent Variable: County and State Per Capita Income*

Variable	Coefficient	Standard Error	T-statistic	P > t
Recession	.0307463	.005104	6.02	0.000
Log of County and State Population	-.0128913	.0021538	-5.99	0.000
Lockout	0	(Omitted)		
County and State Unemployment Rate	-.0012275	.0016701	-0.74	0.463
Dotcom Bubble	.0440369	.0055564	7.93	0.000
Log of County and State Tax Revenue	-.000341	.0154846	-.02	0.982
Super Bowl Month	.0071518	.005266	1.36	0.176
Log of County Expenses	.1201365	.0176611	6.80	0.000
Log of State Consumption	1.093117	.0139276	78.49	0.000
Constant	-2.486559	.298121	-8.34	0.000

Table 1. Regression Tables 1-3

Table 4. *Dependent Variable: County and State Unemployment Rate*

Variable	Coefficient	Standard Error	T-statistic	P > t
Log of County and State Per Capita Income	-2.273964	3.093764	-0.74	0.463
Recession	-.6657322	.2345961	-2.84	0.005
Log of County and State Population	.0563777	.1008568	0.56	0.577
Lockout	0	(Omitted)		
Dotcom Bubble	-1.227225	.2607696	-4.71	0.000
Log of County and State Tax Revenue	-5.061776	.5580464	-9.07	0.000
Super Bowl Month	.1479361	.2274801	0.65	0.516
Log of County Expenses	5.295521	.7556683	7.01	0.000
Log of State Consumption	-5.448087	3.438997	-0.16	0.874
Constant	38.9304	14.70139	2.65	0.009

Table 5. *Dependent Variable: State and National Per Capita Income*

Variable	Coefficient	Standard Error	T-statistic	P > t
Recession	0	(Omitted)		
Log of County and State Population	1.639538	.3846677	4.26	0.000
Lockout	0	(Omitted)		
State and National Unemployment Rate	.027499	.00979	2.81	0.009
Dotcom Bubble	0	(Omitted)		
Log of County and State Tax Revenue	-.0078509	.0309913	-.025	0.802
Super Bowl Month	.0107542	.0064283	1.67	0.105
Log of County Expenses	-.1143017	.0238595	-4.79	0.000
Log of State and National Consumption	.8828921	.1053158	8.38	0.000
Constant	-14.68118	4.20772	-3.49	0.002

Table 6. *Dependent Variable: State and National Unemployment Rate*

Variable	Coefficient	Standard Error	T-statistic	P > t
Log of County and State Per Capita Income	7.777568	2.768919	2.81	0.009
Recession	0	(Omitted)		
Log of County and State Population	-15.7066	7.717501	-2.04	0.051
Lockout	0	(Omitted)		
Dotcom Bubble	0	(Omitted)		
Log of County and State Tax Revenue	-.8935591	.4946884	-1.81	0.081
Super Bowl Month	-.1041519	.1115399	-.093	0.358
Log of County Expenses	1.127912	.4945289	2.28	0.030
Log of State and National Consumption	-12.50486	2.312394	-5.41	0.000
Constant	217.2457	74.04154	2.93	0.006

Table 2. Regression Tables 4-6

Chapter 7

Discussion of Reported Statistics

Analysis of Tables 1-6 and defining collinearity

Detailed in the tables above, there are five significant categories for the research question. The first one pertains to each independent variable being used in the regression. It is important to note that in each regression, the dummy variable- lockout- was omitted due to collinearity. Collinearity relates to the condition that certain independent variables are highly correlated (TAMU.edu). When there is a connection between two or more variables, the statistical significance of the equation is reduced. Statistical significance:

Refers to the claim that a result from data generated by testing or experimentation is not likely to occur randomly or by chance but is instead likely to be attributable to a specific cause (Berry-Johnson, 2020).

For the purpose of this regression, the Super Bowl is being analyzed to see how much it accounts for changes in per capita income and the unemployment rate. By leaving in the dummy variable- lockout- the results of the data would inaccurately describe the connections between the Super Bowl and the dependent variables. Collinearity has the ability to inflate variance and change coefficient signs (TAMU.edu). Ultimately, this creates the potential for inaccurate results. The same problem is evidenced later on for the variables: Recession and Dotcom Bubble. Thus, they have been avoided and removed from the regression.

Coefficients

Observing the coefficient category, the Super Bowl explains a relatively small amount of movement in the predicted values. The coefficients on the Super Bowl variable in Tables 1 and 2 are -.015081 and .121901. That is, when the Super Bowl occurs, there is little increase or decrease in a county's per capita income and unemployment rate. The same holds true on the

state and national levels. The coefficients reported for Tables 3-6 range from $-.1041519$ to $.0071518$.

Standard error and confidence intervals

Furthermore, the standard error column identifies the standard deviation of each variable within the equation. In a simpler definition, standard error is a measure of accuracy. A standard error of zero indicates that there is no random error in the regression (Upenn.edu). Ultimately, the smaller the standard error, the more accurate the statistic is. Evidenced throughout the tables, the Super Bowl variable has a relatively low standard error. The standard errors for Tables 1 and 2 are $.0356992$ and $.2592161$. This indicates that if multiple regressions were rerun, the effect of the Super Bowl on a county's per capita income and unemployment rate will not vary significantly.

Utilizing the results derived from the standard error, a confidence interval can be constructed. A 95% confidence interval is composed of roughly two standard errors both added and subtracted from the original value (Upenn.edu). Observing the two regressions focused strictly on a county's per capita income and unemployment rate, a replication of studies can be made. This is done to create a more narrow and concise approximate for the economic effect of the Super Bowl on a host city. For the host city's per capita income, the true mean effect lies between $-.0854033$ and $.0552414$. In regards to the county's unemployment rate, the true mean is between $-.3887175$ and $.6325194$.

T-statistics and p-values

Additionally, it is important and essential to report the findings indicated from the t-test. In statistics, a t-test is used when determining the significance between an independent and dependent variable. The independent variable being measured in this regression is the occurrence of a Super Bowl, while the dependent variables are per capita income and unemployment rate.

Narrowly focused on the county regression tables, the Super Bowl has a t-statistic of -0.42 and 0.47. In regards to this study, the higher the absolute value of the t-statistic, the increased likelihood that there is a significant connection between the Super Bowl and a positive economic impact. However, given that the t-statistics are close to zero, the null hypothesis cannot be rejected. That is, host cities do not see a large increase in per capita income when the Super Bowl is occurring. As well, unemployment rates do not significantly drop when the large-scale event comes to the selected county.

Building off of the t-test, it is necessary to observe the results located within the p-value column. The p-value is another way to represent the probability of rejecting a null hypothesis. To mention, the null hypothesis is used to show that there is no relationship between the Super Bowl and an economic impact. Dr. Saul McLeod (2019) states that p-values less than 0.05- indicated by $p < 0.05$ - are statistically significant at the 5% level. This means that the null hypothesis can be rejected- there is less than a 5% chance that the null is correct (McLeod, 2019). Observing the p-values in the first two tables- county per capita income and unemployment rate- the Super Bowl displays large figures. The p-values are indicated as 0.673 and 0.639. This signifies that there is strong evidence for the null hypothesis. That is, the Super Bowl does not cause an economic impact in the host city.

Concluding the results from the analysis

Based off of the data derived from the Panel Data set, it is evident that the Super Bowl does not yield the economic prosperity it is attached to in the NFL's claims. In other words, the Super Bowl does not result in a \$300-\$400 million boost for the host city. The results indicate that the Super Bowl does not increase per capita income or lower unemployment drastically. Rather, the Super Bowl has a very small impact on the host city. The added benefit no longer appears palpable, nor is it visible.

Chapter 8

Limitations of the Model

Introduction to limitations

When assessing the model being used, there are two key limitations. These impediments have the potential to alter the results; however, it does not appear that the conclusion will change. The coefficients may vary slightly; although, the outcome is perceived to be in line with the null hypothesis. To current knowledge, it is not probable that the null hypothesis will be rejected if these limitations are corrected. Nevertheless, the data may be presented in a more accurate manner if the modifications are pursued- on a small scale. This assumption is based off of prior research and literature. As discussed earlier, previous models have determined that the Super Bowl does not promote the lavish economic gains that it is advertised to.

Limitation #1- data selection

The first drawback stems from the data selection. Within the regression, only two states are being analyzed- California and Louisiana. The reasoning behind this is due to the fact that previous literature has been focused on the hosting areas of Texas and Florida. California and Louisiana are the two most prominent states to host the Super Bowl- omitting Texas and Florida. Given that the data dates back to 1966, certain host cities have been intertwined with state and national statistics. This caveat is noted earlier in the data section. By analyzing states that have held the Super Bowl in recent years, strictly county data would be available and utilized in the regression. In doing so, the results may prove more precise; however, the sample size would be smaller. Overall, it does not appear evident that this limitation is skewing the data significantly. Mentioned earlier, the results are in line with previous literature and research.

Limitation #2- Super Bowl frequency

Secondly, it is important to mention that the Super Bowl frequently occurs in the first week of February. However, there are some instances in the data where the large-scaled event takes place at the end of January. For this regression analysis, the dummy variable- Super Bowl Month- only takes the value of 1 in the month where the Super Bowl occurs. In previous research, models have included both January and February as being indicators of the Super Bowl month. In Baade and Matheson's 2003 study, these months were included in the dummy variable:

As the Super Bowl generally occurs in either the last weekend of January or the first weekend of February, the dummy variables for all Super Bowl years include both January and February. This captures spending in preparation for the event, economic activity during Super Bowl week, and spending occurring several weeks after the big game, which should capture some portion of the multiplier effect as local businesses and residents spend part of their Super Bowl windfall (Baade and Matheson, 2003).

After observing previous research and studies, it was determined that only one month would be used as an indicator for the Super Bowl. This would allow for variation amongst previous models and the possibility of different results. However, the original regression utilized in this study echoed the results of preceding literature.

Correcting for the Super Bowl frequency

Upon further discussion, it was advised that a regression involving the two month Super Bowl indicator should be used. That is, the dummy variable takes on the value of 1 in the months of January and February. The same equation that was used in the original model is being utilized again to observe any differences in the statistics that might occur. As well, there have been no modifications to any of the other data points. The results are depicted below:

Chapter 9

The Results from Regression Analysis #2

Table 7. *Dependent Variable: County Per Capita Income (2-months)*

Variable	Coefficient	Standard Error	T-statistic	P > t
Recession	-.1259663	.03477	-3.62	0.000
Log of County Population	-.0496374	.0148609	-3.34	0.001
Lockout	0	(Omitted)		
County Unemployment Rate	-.0366551	.0085638	-4.28	0.000
Dotcom Bubble	-.2860466	.020967	-13.64	0.000
Log of County Tax Revenue	-.7086725	.0488234	-14.52	0.000
Super Bowl Month	-.0133907	.0257199	-0.52	0.603
Log of County Expenses	.7341225	.0666942	11.01	0.000
Constant	12.36697	1.396196	8.86	0.000

Table 8. *Dependent Variable: County Unemployment Rate (2-months)*

Variable	Coefficient	Standard Error	T-statistic	P > t
Log of County Per Capita Income	-1.927351	.4502925	-4.28	0.000
Recession	-1.071402	.2495326	-4.29	0.000
Log of County Population	.0550302	.1101692	0.50	0.618
Lockout	0	(Omitted)		
Dotcom Bubble	-1.116369	.1891978	-5.90	0.000
Log of County Tax Revenue	-2.927005	.4464979	-6.56	0.000
Super Bowl Month	.1874339	.1862152	1.01	0.315
Log of County Expenses	2.457094	.5713293	4.30	0.000
Constant	39.21344	11.37922	3.45	0.001

Table 9. *Dependent Variable: County and State Per Capita Income (2-months)*

Variable	Coefficient	Standard Error	T-statistic	P > t
Recession	.0309813	.0050786	6.10	0.000
Log of County and State Population	-.0129416	.0021423	-6.04	0.000
Lockout	0	(Omitted)		
County and State Unemployment Rate	-.0014389	.0016666	-0.86	0.389
Dotcom Bubble	.0440742	.0055257	7.98	0.000
Log of County and State Tax Revenue	-.0005672	.0153988	-0.04	0.971
Super Bowl Month	.0075669	.0037885	2.00	0.047
Log of County Expenses	.1209398	.0175716	6.88	0.000
Log of State Consumption	1.093435	.0138524	78.93	0.000
Constant	-2.49811	.2965898	-8.42	0.000

Table 3. Regression Tables 7-9

Table 10. *Dependent Variable: County and State Unemployment Rate (2-months)*

Variable	Coefficient	Standard Error	T-statistic	P > t
Log of County and State Per Capita Income	-2.673847	3.096982	-0.86	0.389
Recession	-.6380124	.2346502	-2.72	0.007
Log of County and State Population	.0485438	.1006439	0.48	0.630
Lockout	0	(Omitted)		
Dotcom Bubble	-1.196685	.2608108	-4.59	0.000
Log of County and State Tax Revenue	-5.026808	.5565205	-9.03	0.000
Super Bowl Month	.2286196	.1641697	1.39	0.165
Log of County Expenses	5.331026	.7532176	7.08	0.000
Log of State Consumption	-.069181	3.445028	-0.02	0.984
Constant	37.1049	14.7111	2.52	0.012

Table 11. *Dependent Variable: State and National Per Capita Income (2-months)*

Variable	Coefficient	Standard Error	T-statistic	P > t
Recession	0	(Omitted)		
Log of County and State Population	1.666216	.3610976	4.61	0.000
Lockout	0	(Omitted)		
State and National Unemployment Rate	.0283082	.0091928	3.08	0.005
Dotcom Bubble	0	(Omitted)		
Log of County and State Tax Revenue	-.0097724	.0290883	-0.34	0.739
Super Bowl Month	.0120635	.0045161	2.67	0.012
Log of County Expenses	-.1027546	.0231229	-4.44	0.000
Log of State and National Consumption	.8637181	.0992638	8.70	0.000
Constant	-14.9366	3.949259	-3.78	0.001

Table 12. *Dependent Variable: State and National Unemployment Rate (2-months)*

Variable	Coefficient	Standard Error	T-statistic	P > t
Log of County and State Per Capita Income	8.704658	2.826747	3.08	0.005
Recession	0	(Omitted)		
Log of County and State Population	-17.37963	7.688751	-2.26	0.031
Lockout	0	(Omitted)		
Dotcom Bubble	0	(Omitted)		
Log of County and State Tax Revenue	-.824743	.4875845	-1.69	0.101
Super Bowl Month	-.1270203	.0851948	-1.49	0.147
Log of County Expenses	1.101959	.4842422	2.28	0.030
Log of State and National Consumption	-12.87753	2.285103	-5.64	0.000
Constant	229.0864	73.15627	3.13	0.004

Table 4. Regression Tables 10-12

Discussion of results

Observing the results, there appears to be some slight changes in the data. However, it is important to mention that the conclusion still holds- the null hypothesis cannot be rejected. When referencing the county data in Table 7, there are minimalistic differences in the results compared to Table 1. The coefficient variable for the Super Bowl increased from $-.015081$ to $-.0133907$. This indicates that there is no significant movement in per capita income when the Super Bowl is hosted. As well, the standard error moved from 0.0356992 to $.0257199$. By adding another month to the Super Bowl indicator, the results appear to be more accurate. If additional regressions were run, the model would not indicate significant movement in the results. Furthermore, the t-statistic changes from -0.42 to -0.52 and the p-value shifts from 0.673 to 0.603 . A larger t-statistic represents a more significant connection between the Super Bowl and changes in per capita income. However, there is no evidence for this in the revised model. Likewise, the p-value is still too large to reject the null hypothesis. In order to be significant, the independent variable should take on a value less than 0.05 - $p < 0.05$. All in all, it is evident in the data that the revised model does not alter greatly from the original model.

When comparing the results from Table 8 to Table 2- the county unemployment rate- the data does not alter immensely. The coefficient attached to the Super Bowl variable increases from $.121901$ to $.1874339$. Although a slight change in the effect, there is no indication that the Super Bowl impacts the county's unemployment rate. As well, the standard error shifts from $.2592161$ to $.1862152$. The t-statistic moves from 0.47 to 1.101 and the p-value decreases from 0.639 to 0.315 . Although the p-value significantly decreases in this model, it still does not fall into the category of $p < 0.05$. As a result, it can be concluded that the addition of another month in the data set does not significantly alter the results. The null hypothesis cannot be rejected due to these changes.

Furthermore, it can be evidenced in some regression results from the second model that the Super Bowl variable takes on significant p-values. This is clear in Tables 9 and 11- the p-values are 0.047 and 0.012. However, it is important to mention that the t-statistics in these hover around the range of 2 to 2.67, which is still low. As well, the data is not strictly concise to the county- it includes state and national statistics. This makes the data set weaker and less reflective of the Super Bowl's direct impact on the county. Variables at the state and national level are unlikely to describe the effects of the Super Bowl on a local level (Tybout, 2021). Conclusively, the second regression analysis does not significantly impact the results uncovered in the original model. The null hypothesis cannot be rejected- the Super Bowl does not significantly increase per capita income in the hosting county, nor does it significantly decrease the unemployment rate.

Concluding remarks

Although limitations are apparent in the Panel Data set, it does not appear that the data is misrepresented. The regression has concluded similar results of past works. While there might be slight variation in the coefficients and t-statistics, the data is congruent. Nevertheless, the inclusion of these limitations in future research and analytics may allow for additional accuracy.

Chapter 10

Conclusion

Synopsis of the regression analysis and final observations

Every year, city officials and lobbyists present their claims to the NFL as to why they should host the next Super Bowl. Persuaded by the NFL's bold claims that accommodating the colossal event will bolster the city's image, city representatives are eager to best position their metropolis. The NFL claims that the Super Bowl will generate an economic impact of \$300-\$400 million in the area. The perceived effects circulate around and stem from the possibility of job creation, increased living conditions, and revitalization of the area. Evidenced in this regression-focused on per capita income and unemployment rates- the null hypothesis cannot be rejected. There is no evidence within the analysis that supports the NFL's robust claims. The data shows that there is very little economic growth generated from hosting the Super Bowl. Although there may be some degree of error within the Panel Data set, the statistics reflect and are in line with previous research. As a result, it does not appear wise to buy into the NFL's luxurious and lucrative assertions. It is apparent that there is a significant portion of "fluff" behind the NFL's logic. That is, their predictions for the amount of visitors, money spent, jobs created, etc. appear overstated. All in all, it is suggested that city officials move cautiously and do not buy into the exaggerated hype.

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ACADEMIC VITA

JUSTIN M. SORBO

EDUCATION

The Pennsylvania State University | Schreyer Honors College | College of the Liberal Arts

Major: Bachelor of Science in Economics

Expected Graduation: May 2021

Certification: Smeal College of Business, Business Fundamentals

Dean's List Achievement: 7 semesters

Quentin Wood Educational Excellence Scholarship

The National Society of Collegiate Scholars

PROFESSIONAL EXPERIENCE

Commonfund, Wilton, CT

June 2020 - Aug 2020 & Nov 2020 - Present

- Currently organizing and managing client data in Pivotal- a Customer Relationship Management system.
- Analyzed client endowment portfolios valued at \$1,000,000+ by modeling liquidity, spending, cash flow, and risk metrics.
- Interpreted and reviewed financial statements and annual reports- focused on deriving client business models.
- Constructed detailed graphics- bar, line, and pie charts- to display endowment performance and fiscal trends.
- Prepared fee analyses and calculated fee ratios for client investment funds.
- Researched and reported on market, private equity, and private capital performance.
- Presented financial and economic data on the effects of Covid-19 on national aquariums.

Tutor Doctor, University Park, PA

Nov 2020 - Present

- Tutor students in college level business and economic classes to boost their academic performance and understanding.

The Pennsylvania State University- Department of Economics, University Park, PA

Aug 2019 - Present

- Current teaching assistant- provide support in the grading process and constructive input/feedback to students.
- Tutor students on complex economic theorems and ideologies to ensure understanding.

Nittany Notes, University Park, PA

Jan 2019 - Present

- Serve as a learning aid for college students in economic and business classes- Econ 302, 304, 333, BA 304, and FDSC 105.

All American Sewer & Drain Services, Inc., Stamford, CT

Summers 2015 - 2019

- Assisted with bookkeeping functions- accounts receivable/payable, bank reconciliations, invoicing, and proposals.
- Conducted inventory management, scheduling, and field coordination.

Ralph D Russo Plumbing and Heating, Stamford, CT

Spring 2017

- Executed office management tasks -Creating excel spreadsheets for the tracking and management of tax calculations.

LEADERSHIP & INVOLVEMENT

Penn State Dance Marathon- THON, University Park, PA

Spring 2018 - Present

- Committed to enhancing the lives of children and families impacted by childhood cancer via a student-run philanthropy.
- Current Family Relations Chairman- submit bi-weekly reports on past, present, and future organization performance.
- Oversee philanthropic events- enrollment, coordinate event locations, design merchandise, and email communication.

Pi Kappa Alpha Fraternity- Beta Alpha Chapter, University Park, PA

Jan 2018 - Present

- Prepare young men with the leadership, scholarship, service, and social experiences needed to excel upon graduation.
- Former Secretary- oversaw roster management, membership duties, attendance, and communicated with officials.
- Former Risk Manager- enacted safety policies, reported violations, conducted house inspections, and monitored events.
- Former Philanthropy Chair- raised donations for Centre County Paws, Meals on Wheels, Autism Speaks, and THON.

The Pennsylvania State Interfraternity Council, University Park, PA

Aug 2018 - May 2019

- Former Associate Member of Community Relations- integrated fraternities with the local community.
- Coordinated and managed the First Responder's Dinner for local police, firemen, and EMTs.
- Participated in and informed students about Greek Sweep- an organized initiative to clean up litter in State College.

VOLUNTEER SERVICE

Neighbor 2 Neighbor Program, University Park, PA

Fall 2018 - Present

- Coordinate and participate in community service events, in partnership with the Highlands Civic Association.

Bridgeport Rescue Mission, Bridgeport, CT

2015 - Present

- Aid local soup kitchen with food drive/stocking of shelves and assist with the clothing and toy drives.

Best Buddies Program, Wilton, CT

2015 - 2017

- Mentor, friend and advocate for those with disabilities. Engaged members in various activities to bolster enjoyment.

SKILLS

- Proficient in Microsoft Access, Excel, PowerPoint, Teams, Word, Adobe Photoshop, Stata, and Tableau.
