A QUANTITATIVE LOOK AT HOSTING THE WORLD CUP

A COMPARATIVE ANALYSIS

by

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ABSTRACT

The purpose of this paper is to develop a general understanding of whether or not it is beneficial for a country to host the World Cup. The following sections will not only critique the assumptions underlying *ex ante* studies, but will also develop a model that works to more accurately analyze economic data collected both before and after a country has hosted the World Cup. Finally, the analysis will provide context for the results by comparing them with those of the same analysis performed on countries that have hosted the Summer Olympics – a mega-event of similar magnitude.

The paper concludes that *ex ante* results are inflated due to the inclusion of a variety of subjective assumptions such as time switching, crowding out, and the multiplier effect. However, it does not derive a consensus determination about the overarching benefit or detriment of hosting the World Cup. To do so, more granular data analysis must be performed on a larger sample, which will only be achievable after more countries have hosted the mega-event.

INTRODUCTION

On the 21st of May 1904, the Fédération Internationale de Football Association (FIFA) was effectively established in Paris, France. More than twenty-five years later, the organization - originally intended to recognize those who had founded the English Football Association (FA) in 1863 - would ultimately give rise to what is widely considered the world's most popular sporting event: the FIFA World Cup. Now, more than one-hundred years later, there is a hotbed of competition amongst countries bidding to host the mega-event. All of this begs the question, 'What do these countries stand to gain?'

The FIFA World Cup (hereafter referred to as the World Cup) reached 3.2 billion viewers worldwide in 2014, breaking TV audience records in several markets including the United States and Germany. But interest in the mega-event was not always noteworthy. In fact, the first World Cup – staged in Uruguay in 1930 – attracted the participation of only four European nations, largely because of a European economic crisis and concern from clubs over having to forfeit their best players for two months. The host nation was so upset they "became the first and only team to refuse to defend their title," and did not participate again until 1950 (FIFA, 2016).

Various setbacks continued to plague FIFA as it worked to establish the World Cup as an event of global prestige. In 1938, Sweden was left without a first round opponent as Austria vanished from the stage. In 1942, the onset of World War II meant demise for the fourth World Cup. It wasn't until eight years later - after a time delay led to postponement of what was to be the fourth staging of the event in 1949 - that the World Cup returned to the international stage in Brazil (FIFA, 2016).

Today, “the FIFA World Cup is the biggest single-event sporting competition in the world and is contested by the senior men's national teams from the 208 Member Associations of FIFA.” (FIFA, 2016) It is a competition that harvests international pride and brings joy to billions worldwide, but it is also one that has recently been riddled with scandal. In 2015, reports of rampant corruption amongst FIFA officials and associates sprouted up in major news and media outlets. After vehemently battling “accusations of corruption, particularly after awarding the 2022 World Cup to the tiny but rich and influential Gulf state of Qatar,” FIFA had fourteen of its officials charged with “racketeering, wire fraud, and money laundering conspiracies” by US authorities (BBC World News, 2015).

While the scandal certainly tainted FIFA’s image as an organization committed to uniting the many peoples of the world around the football every four years, it also raised the question, “What about the World Cup compels countries to bribe FIFA officials for the officials’ vote?” According to an article on ESPN FC, *confirmed* payoffs have ranged from a $1 million bribe from 1998 candidate Morocco to a $10 million bribe in 2008 from South Africa (Associated Press, 2016).

So what does the host nation stand to gain? The answer may appear obvious. With an audience of 3.2 billion viewers, the opportunity not only to capitalize financially from a global following, but also to market the nation’s political or infrastructural developments and to attract swaths of tourists seems invaluable. Various *ex ante* studies tout these potential benefits, assigning them values of up to $24.8 billion (Szymanski, 2002). They find the infrastructural improvements and influx of demand generates jobs and creates long-term returns that far exceed the costs of implementation.

The issue is that there are a number of potential problems with such studies. From the incentives of those who produce the reports to the assumptions those individuals make, *ex ante* studies tend to be rife with errors. While this may come as a benefit to the few who are able to obtain public assets to fund private interests, it comes at the detriment of the masses that provide these funds in the form of increased taxes or lost developments for which the funds employed could have been used. This is especially true for emerging nations, whose capital is fundamentally more valuable than that of developed countries. For example, for a country like South Africa (which hosted the 2010 World Cup), construction of one of the many new stadiums necessary to host the mega-event may come at the expense of much needed public healthcare funding.

Taking the magnitude of the costs associated with hosting a World Cup into consideration, it is essential the various nations vying for the rights to host the mega-event fully understand the implications of doing so. As more and more research largely discredits the ability of *ex ante* studies to predict the economic impact of the World Cup on the nations which host it, more work needs to be done elaborate on the factors that differentiate profitable and unprofitable endeavors. While *ex post* studies that demonstrate the realized economic impact on a nation of hosting "mega-events" are becoming more common, few concentrate specifically on the World Cup. And while it is true that hosting the World Cup and hosting other "mega-events" have much in common, there are also various factors that have the potential to make one profitable where the other might not be.

The purpose of this paper is to examine these differentiating factors and to determine whether it is beneficial or detrimental for a nation to host the World Cup.

Because of the dichotomous results several *ex ante* and *ex post* studies produce, this paper will analyze both models and attempt to determine underlying factors that lead to varying results. It will then develop a model that seeks to more accurately analyze economic data collected before and after a country has hosted the World Cup and will compare the results to a similar analysis performed on countries that have hosted the Summer Olympics, a separate mega-event of similar magnitude.

To be able to develop such a model, it is necessary to have an understanding of the current literature available on the subject. For the sake of understanding, the literature review section that follows will analyze not only works related to the World Cup, but also pieces which examine "mega-events," or "large scale cultural events of mass popular appeal and international importance which are typically stage managed by a combination of national governmental and international nongovernmental actors." (Horne & Manzenreiter, 2004) The two are not interchangeable, but also are not mutually exclusive to the extent that an understanding of one augments an understanding of the other.

LITERATURE REVIEW

A majority of existing studies on the economic impact of hosting a World Cup are *ex ante,* or predictive, studies.

> A typical predictive, or ex ante, economic impact study of the type used by event promoters estimates the number of visitors an event is expected to draw, the number of days each spectator is expected to stay, and the amount each visitor will spend each day. (Matheson, Mega-Events: The effect of the world's biggest sporting events on local, regional, and national economies, 2006)

The goal of these studies is to provide an analysis of the likely benefit the event will provide, helping elected officials make informed decisions about whether to host the event.

The problem with *ex ante* studies, however, is that that "many of the studies are commissioned by those who have a vested interest in holding such events (for example, standing to benefit directly from the provision of public subsidies that these reports may influence or justify)." (Barclay, 2009) Boosters are therefore incentivized to produce economic impact statistics as large as possible in not only in an effort to earn public subsidies, which essentially serve as free money to the organization which they promote, but also to accelerate the speed with which infrastructure projects are approved (Aragao, 2015). For example, "A study by the Dentsu Institute for Human Studies estimated a $24.8 billion impact from the Cup for Japan and a $8.9 billion impact for South Korea." (Matheson & Baade, Mega-Sporting Events in Developing Nations: Playing the Way to Prosperity/, 2004) The problem? The Dentsu Institute is "the research unit of the advertising agency that did so much to promote world football." (Horne & Manzenreiter, 2004)

Fortunately, academics are beginning to address the strategies such *ex ante* studies employ to inflate their results. It is true that any study will inherently have a set of assumptions under which it operates. But multitudinous pieces are starting to pop up that point out the various flaws characteristic of a few assumptions almost all *ex ante* studies of mega-events make.

There are three categories of scholarly consensus concerning the exaggeration of benefits linked to mega-events. The first suggests

> that "the increase in direct spending attributable to the games may be a 'gross' as opposed to a 'net' measure" (Matheson and Baade 2004:1090)…. Secondly, mega-events may crowd out regular business travellers in a particular region...Thirdly, the notion of the multiplier effect (which suggests that further spending is stimulated by initial, direct spending on mega-events) is criticized…" (Matheson and Baade 2004:1091). (Pillay & Bass, 2008)

Measuring wealth creation in gross as opposed to net terms is one of the simplest and easily defendable ways for an *ex ante* study to inflate findings. Essentially, the 'gross method' examines the sum of all receipts over the course of an event in estimating economic impact (Matheson & Baade, Mega-Sporting Events in Developing Nations: Playing the Way to Prosperity/, 2004). This ignores the fact that the money spent on the event displaces local spending on other industries. For example, a resident who spends $300 on a ticket to the World Cup is effectively forgoing spending that same $300 taking a date to see a play.

The 'net measure,' on the other hand, takes into account that "most of the spending by local residents on the sporting event does not generate new economic activity but simply reallocates spending within the economy" by only measuring the extra income generated by the event (Peeters, Matheson, & Szymanski, 2014). For example, if a woman traveling to Japan on business in 2002 decided to spend $300 on a ticket to one of the World Cup matches, that $300 would be taken to account. However, any money spent on her hotel, taxi, food, or other accommodations would not, as she would have spent the same amount regardless of whether the World Cup had been taking place.

These procedural differences can lead to massive disparities in results. As one analysis puts it:

> While the gross impact of these huge games and tournaments is undoubted large, attracting tens or hundreds of thousands of live spectators as well as television audiences that can reach the billions, the net impact of mega-events on real economic variables such as taxable sales, employment, personal income, and per capita personal income in host cities is negligible. (Matheson, Mega-Events: The effect of the world's biggest sporting events on local, regional, and national economies, 2006)

Another reason *ex ante* studies predict economic impacts far in excess of realistic expectations is that they ignore the consequence of crowding out. This occurs either because demand exceeds suppliers' capacity or because tourists favor less congested destinations, both of which push consumers to relocate purchases away from the host region. For example, though the 1984 Olympics in Los Angeles was one of the few documented mega-event proven to be profitable to the host region by *ex post* studies, the city still lost out on approximately $163 million of "out-of-region tourist expenditure that would have occurred if the Olympics had not been held." (Melville & Riaan, 2008)

The third tactic Matheson and Baade (2004) highlight that many studies employ to exaggerate the economic impact of a mega-event is overstating the multiplier effect. The multiplier effect takes into account reinvestment spending that is stimulated by an initial outlay (Pillay & Bass, 2008). For instance, if a worker earns $1, spends half of it,

and then the next person spends half of that and so on and so forth, the multiplier is two. That is, for every dollar spent, two dollars effectively circulate through the economy.

There are a couple inherent problems with incorporating the multiplier effect in valuing the economic impact generated by a mega-event such as the World Cup. First and foremost, "the multiplier technique exacerbates any errors made in estimating direct expenditures." (Matheson & Baade, Mega-Sporting Events in Developing Nations: Playing the Way to Prosperity/, 2004) Therefor, every dollar the initial estimate of *direct spending* differs from the actual value will cause an error twice as large in the overall estimate of income generated. As has already been established, these initial estimates are often already inflated by analysts' use of the 'gross' method instead of the 'net' method.

Additionally, *ex ante* studies often do not account for reductions adjustments to the multiplier effect necessitated by unusual state inherent of economies during mega-events.

> Precise multiplier analysis includes all "leakages" from the circular flow of payments and uses multipliers that are appropriate to the event industry… Since megaevents represent specialized entertainment where the athletes must be imported from participating countries around the world, the multiplier for such a event will be lower than the multiplier for spending on many other local goods and services. (Matheson & Baade, Mega-Sporting Events in Developing Nations: Playing the Way to Prosperity/, 2004)

Overestimating multipliers again leads to a knock-on effect of exaggerating the economic impact of the World Cup on the host nation's economy. Because of the magnitude of the event, a multiplier error as seemingly insignificant as 0.1 can exaggerate an impact estimate by hundreds of millions of dollars.

Even studies that limit the impact of three methods of inflating economic predictions often fail to account for the opportunity cost of the capital used. They rarely examine other areas in which the host nation could have spent the money, such as developing school systems or improving access to vaccinations. These opportunity costs can be especially high for emerging nations, which not only have the least access to basic necessities, but also have to spend the most to develop the extensive infrastructure required to host a World Cup.

> From an economic point of view, the cost of building a new stadium is not best described by the amount of money needed to build the facility but rather the value to society from the same amount of capital spent on the next best public project. (Pillay & Bass, 2008)

Beyond quantified economic measures, literature available on the subject demonstrates that *ex ante* and even many *ex post* studies explain away potential or realized losses with intangible benefits the mega-event provides, such as "publicity" or "nation building." (Matheson & Baade, Mega-Sporting Events in Developing Nations: Playing the Way to Prosperity/, 2004) Such arguments hinge on the idea that hosting a mega-event can help establish a nation's global image, touting political or ideological progression. One widely cited example is that of the 1995 Rugby World Cup.

> The picture of South African President Nelson Mandela wearing the jersey of the white South African captain Francois Pienaar while presenting him with the championship trophy, was a powerful image to the world indicating that South Africa had emerged from its years of racial oppression and served to unify the country. (Matheson & Baade, Mega-Sporting Events in Developing Nations: Playing the Way to Prosperity/, 2004)

The problem with this idea is two-fold. First of all, it is difficult to determine the extent to which such positive image gains are beneficial to a country. Did the everlasting image of Mandela handing off the trophy induce foreign investment, stimulate trade, or attract future tourists? Secondly, hosting a mega-event such as the World Cup is just as likely to damage the host region's image as it is to enhance it.

> …the German psyche was damaged by the terrorist events during the 1972 games in Munich, and the reputation of the citizens of Salt Lake City certainly suffered from the bribery scandal associated with the 2002 Winter Games. (Matheson & Baade, Mega-Sporting Events in Developing Nations: Playing the Way to Prosperity/, 2004)

Taking all of these factors into consideration, literature proves it is extremely difficult to establish the benefit or detriment a nation will experience from hosting the World Cup. *Ex post* studies generally work to limit the amount of error inherent in *ex ante* studies in a number of ways. These can vary from focusing on taxable sales and tax collections to analyzing "hotel occupancy rates and prices and airport arrivals and

departures…to attempt to measure the economic impact of mega-events on host economies." (Matheson, Mega-Events: The effect of the world's biggest sporting events on local, regional, and national economies, 2006) But even such adjustments can fail to account for "legacy," or long-term, impacts the mega-event creates.

METHODS, RESULTS, & DISCUSSION

While in-depth impact analyses of hosting a World Cup have been performed on a country-by-country basis in the past, there is a relative lack of general consensus regarding the overarching benefit or detriment of hosting these events. The goal of this paper is to help derive a central perspective on the matter, as well as to determine the validity of *ex ante* studies and how those studies can be improved.

To do this, World Cup host nation data across twelve statistical indices was compared both to historical norms and to a similar analyses run on data mined from countries that have hosted the Summer Olympics, another mega-event of similar magnitude. The data was harvested from a single database - World DataBank – for a specific reason: the analysis was to be performed on a high level, so there needed to be consistency in terms of how the information was collected. Should government consumption statistics for Argentina from World Factbook be compared to the same data for Brazil from World DataBank, there would likely not only be inconsistencies in terms of what each source considered "government consumption," but also in the period of time covered by each. To control for such idiosyncrasies, data was collected from the most extensive and comprehensive source: World Databank. Doing so yielded a sample of seventeen World Cup and sixteen Summer Olympic host countries dating back to 1960, with innumerable comparable indices.

The twelve statistical indices analyzed in this study on a year-over-year, percentage-growth basis include:

- Government consumption
- Household consumption
- Net investment in nonfinancial assets (% of GDP)
- GDP per capita growth (annual %)
- Employment to population ratio, 15+, total (%) (modeled ILO estimate)
- Final consumption expenditure, etc. (annual % growth)
- Industry, value added (annual % growth)
- Labor force participation rate, total (% of total population ages 15-64) (modeled ILO estimate)
- Unemployment, total (% of total labor force) (modeled ILO estimate)
- Urban population growth (annual %)
- GDP (Current US$) Growth
- International tourism, number of arrivals Growth

Of these twelve, "Household Final Consumption Growth," "GDP per Capita Growth," and "Industry, Value Added Growth" were focused on as the primary overarching indicators of a country's GDP growth, infrastructure development, and consumer sentiment. The other nine indicators were then used to provide insight as to why the three primary gauges were the way they were. Using this analysis, one would ideally be able to not only draw overarching conclusions about the benefit or detriment of hosting the mega-event, but would also be able to compartmentalize sources of deviation from normalcy.

After harvesting data for each host country across each statistical index, average host-year data was compared to average non-host year data on a country-by-country basis by taking the difference between the two values. After adjusting for outliers, the average,

count, and standard deviation of these differences was then derived on an index-by-index basis across all host countries. A t-statistic test was then run to determine the level of normalcy of each finding. Any result yielding a probability value – or p-value - of less than 10% was considered a significant deviation from the norm; that is, it is highly unlikely that the host year data was from the same distribution as the non-host year data. This indicates that some unique factor (such as hosting World Cup or Summer Olympics) likely caused the deviation.

In addition to this single-year analysis, which was meant to display any significant deviations taking place in the host-year alone, a similar analysis was run to compare the five-year period after hosting a mega-event to the five-year period before hosting a mega-event. This analysis was identical to the previous insomuch as the difference between two periods for each index was taken on a country-by-country basis, averaged, controlled for outliers, and used to perform a t-statistic test. But the study differed in that two five-year periods were compared instead of multitudinous one-year periods. For example, instead of comparing 2010 (host-year) economic data for South Africa to average economic data from every other year dating back to 1960, this analysis compared South Africa's average economic data from 2010-2014 to its average economic data from 2006-2010.

The point of running an analysis comparing the ten-year period bracketing a World Cup was to determine whether benefits or detriments realized in the host year were lasting or anomalous. The study could have incorporated data from periods longer than five years before and after hosting, but restricting observations to this timeframe made sense for a couple reasons. First and foremost, "economies change rapidly and to expect

the dynamics of the economy to remain equivalent more than [five] years out allows for other variables to drive growth or reduction in the economy beyond that of the [mega-event].” (Keim, 2015) In other words, by restricting observations to a five-year window, the analysis limits the potential effects of development spurred by something other than the mega-event, such as rapid technological improvement. Secondly, by limiting the scope to a five-year span, the study gains an observation in South Africa. Because World DataBank does not include data for 2016, an observation would have been lost if a six-year or longer window had been employed.

By performing this analysis on different intervals, the study sought to 1) identify whether countries experience spikes of economic activity during host years and 2) determine whether hosting a mega-event such as the World Cup or Summer Olympics is beneficial or detrimental to a nation over the long run. According to most - if not all – *ex ante* studies reviewed, hosting the World Cup should benefit a country both economically and sentimentally. However, as extensive academic literature on the subject has shown, “while benefits can exist in some form or another, the net gain for a region seeking to bolster its economic standing is often overstated.” (Whitson & Horne, 2006) Using the results produced by this study, one should be able to roughly confirm or deny this idea and identify sources of common flaws in *ex ante* estimates.

Taking into account both *ex ante* studies’ claims and their limitations, two hypotheses were developed. First, hosting the World Cup was generally expected to be beneficial to a host-country in terms of GDP growth, infrastructure development, and increases in consumer sentiment, though not to the degree forecast in *ex ante* studies. This hypothesis hinges on the idea that benefits such as increased tourism, revenue from

television agreements, and increased opportunities for employment exist, but not to the extent displayed in *ex ante* studies. As David Whitson and John Horne put it, "a major feature of analysis of sports mega-events has been the gap between optimistic forecasts and the actual impacts of Games on the local economy, society, and culture." (Whitson & Horne, 2006) Secondly, it was assumed that, in general, hosting the World Cup would have a similar effect on a nations' economy as hosting the Summer Olympics, be that beneficial or detrimental. This stems from the fact that both are prominent mega-events that attract swaths of attention and necessitate large-scale investment.

Results from the single-year analysis largely refuted both the first and second hypotheses. Not only were there were few controlled tests that lead to statistically significant results, but those that did yielded near opposite outcomes to those hypothesized. Of the three primary indicators analyzed, derived p-values for "Household Final Consumption Growth," "GDP per Capita Growth," and "Industry, Value Added Growth," were 0.4641, 0.0936, and 0.6719, respectively. A p-value is "the probability that an observed difference is due to random chance when the null hypothesis is true," and a value of less than 0.1 indicates a significant deviation from the norm. This suggests GDP per Capita Growth was the only overarching indicator that deviated significantly from the norm during a host year (Altman, Gore, Gardner, & Pocock, 1983).

Furthermore, this deviation was not in the expected manner. With a mean of -0.8627, GDP per Capita growth actually *contracted* during World Cup host years relative to non-host years. This may be due to the fact that GDP is viewed as the sum of gross value added by all resident producers in an economy, and much of the workforce used to develop the infrastructure and provide the labor necessary to host a World Cup is

contracted from sources outside the host country. For example, of the 1.2 million migrant hands working on the development of Qatar's notorious infrastructure in preparation for the 2022 World Cup, "hundreds of thousands of workers [are] primarily from India, Nepal, Sri Lanka, Pakistan, and Bangladesh." (Human Rights Watch, 2012) These workers represent capital flowing out of the country that could be used to support resident producers and, in turn, host country GDP.

Interestingly, though, the exact opposite trend was manifest in comparing Summer Olympic host year data to non-host year data. Whereas World Cup data showed a statistically significant *decrease* in GDP per Capita Growth during host years, Summer Olympic data showed a statistically significant (p-value of 0.0566) *increase* in GDP per Capita Growth during host years. This spike as compared to the World Cup dip may simply be due to the nature of the two events. While the World Cup is a nation-wide event that requires far-reaching outlays of resources and can make it difficult for tourists to attend multiple events, the Summer Olympics takes place in a single city - typically that which is most affluent and capable of handling necessary development. This limited scope not only contributes to GDP per Capita Growth by both limiting the breadth of investment and increasing the likelihood tourists will see more events, stay longer, and spend more money.

However, to draw any substantial conclusions it is necessary to look at whether these results are consistent over time. An analysis comparing the five years after hosting the two mega-events to the five years before (hereafter referred to as "*ex post* analysis") yields some curious results. In stark contrast to the conclusions drawn from the single-year study, the *ex post* analysis indicates not only that GDP per Capita growth in the five

year period after hosting a World Cup is *not* significantly different than the prior five-year period, but also that there is a statistically significant (p-value of 0.0433) *decline* in GDP per Capita growth for the same the same analysis run on Summer Olympic data. Such results could – though do not necessarily - invalidate the hypothesis that the difference between host year World Cup and Summer Olympic GDP per Capita data is a result in the difference in the nature of the two events. However, they may also indicate that whereas the dramatic spike in Summer Olympic host years is then followed by a dramatic decline in overall consumption in the following years, changes in World Cup consumption habits (and that general levels of GDP growth) tend to taper back to normalcy. This idea is substantiated by a near-significant (p-value of 0.1352) *decline* in the five-year *ex post* average of Household Consumption Growth for hosting the Summer Olympics at the same time as an insignificant (p-value of 0.4684) variation in the same five-year *ex post* average for hosting the World Cup.

Additionally, the study shows a significant (p-value of 0.0304) *increase* in Industry, Value Added Growth in the five-year period after a country hosts a World Cup. Though this result was contrary to expected, it makes sense considering "Industry, Value Added" comprises value added in mining, manufacturing construction, electricity, water, and gas. Inherently, growth in this category takes into account opportunity cost, as value will be maximized if resources are used in the most beneficial manner possible. Therefore, it is reasonable to assume that the uptick in Industry, Value Added Growth in the five-year period after hosting a World Cup is a result of capital shifting back to its normal, value-maximizing state after being employed in a less-than-value-maximizing manner in the five years preceding hosting a World Cup. This is summarized by

Cornelissen's claim that such an event "may involve infrastructural and other developments, the legacies of which may be to the disadvantage, rather than the advantage of the broader populace," an assumption which is further supported by the fact that the average Industry, Value Added Growth for the five-year period prior to hosting a World Cup (2.6847) trails the average Industry, Value Added Growth across all other non-host years (2.7128). (Cornelissen, 2007)

LIMITATIONS & IMPLICATIONS

To fully understand the implications of the analysis, it is first necessary to understand the study's limitations. First, though World DataBank provided the most extensive and comprehensive set of data on the subject, the source was still extremely limited in scope. Even though WorldDatabank extends back to 1960, the two mega-events only happen once every four years, meaning the sample would yield fourteen samples *if every country reported all data*. That being said, countries like China, which hosted the Summer Olympics in 2008, are not always transparent with economic data. This further restricted the sample size for many of the regressions, limiting the statistical power of the analysis.

Secondly, the data was analyzed on a country-by-country basis, which is an extremely high level. Should a more granular analysis be undertaken, perhaps some light could be shed as to the economic impact on a region-by-region or city-by-city basis. It is not unlikely that a host city may benefit from increased levels of tourism at the expense of a near-by non-host city. This would be especially interesting and beneficial when analyzing the Summer Olympics since it is hosted in a single city, but is beyond the scope of an undergraduate thesis.

Finally, by focusing on a high-level analysis, this study took into account limiting factors such as time switching, crowding out, the "carnival effect", and the multiplier effect only to the extent that the ex post analysis worked to constrain their impact by taking five-year averages. Time switching "occurs when a visitor wishes to visit the city in question, but arranges the trip to coincide with the sporting event," and may have played a substantial part role in the significant spike in host year figures as compared to non-host year figures for the Summer Olympics (Barclay, 2009). Crowding out takes into account which projects were displaced by allocating funds that could have been used on one project – such as building a hospital – to another project – such as construction of a new stadium. The "carnival effect" centers on the idea that large events may incentivize local citizens to "flee from noise, traffic jams, etc. in the region" and is often ignored in *ex ante* studies because it can drag projected economic benefits downward if incorporated into the analysis (Maennig, 2007). Finally, the multiplier effect asserts, "that further spending is stimulated by initial, direct spending on mega-events," and is accounted for by applying a multiple to dollars spent when estimating the economic impact of initial spending (Pillay & Bass, 2008).

Though the fact that time switching, crowding out, the carnival effect, and the multiplier effect were not directly incorporated in the analysis may be seen as a limiting factor, there primary reason for leaving these measures out of the study is two-fold. First, not one of these measures is even relatively objective. Therefore, incorporating them into the study would necessitate a substantial degree of predictive analysis on a country-by-country basis, which is well beyond the time-constraints indicative of an undergraduate paper. Second and more importantly, by limiting the impact of such arbitrary and

subjective measures as much as possible, the study attempted to control for the inflationary effects so many *ex ante* studies employ to their benefit. By performing an analysis over the five-years before and after hosting one of the mega-events, the study allowed the effects of each factor to manifest over time should they exist.

With an understanding of the results as they are effected by the limitations of the analysis, a few implications can be drawn. Paramount among these is the conclusion that there is relatively little quantitative evidence that hosting a World Cup is either beneficial or detrimental to a host nation's economy. Performing regressions that control for outliers indicates there is little variance in terms of GDP growth, infrastructure development, or consumer sentiment as a result of either of the two mega-events. This result also suggests that there exists no comparative benefit to bidding to host the World Cup over the Olympics or vice versa; both require massive investments in infrastructure and both rely on swaths of tourist capital to be profitable.

Perhaps the most certain conclusion to be drawn from this study is that *ex ante* analyses are highly subjective and often drastically over-inflated. As the data shows, the parameters focused on, length of period analyzed, and assumptions employed can drastically alter a study's results to show massive economic upticks when none truly exist. Though standardizing a process for the evaluation of these economic projections is arguably impossible, it is clear an individual evaluating *ex ante* studies needs to have a thorough understanding of how such studies are conducted if he or she is to reach an objective conclusion. An understanding of this implication is highly valuable to officials tasked with awarding the next World Cup or Summer Olympics.

CONCLUSIONS

This paper has analyzed underlying indicators in respect to various host countries' GDP growth, infrastructure development, and consumer sentiment in order to test the validity of *ex ante* studies and to determine whether hosting the World Cup is generally beneficial or detrimental to a host nation's economy. While results indicate such a mega-event is highly unlikely to derive a benefit of the magnitude forecast by most *ex ante* studies, it is difficult to develop any definite conclusions in respect to the overarching benefit or detriment hosting the World Cup will produce due to the limited sample size of available data.

Overall, more granular data analysis needs to be conducted over a longer period of time needs before any certain quantifiable conclusions can be drawn. That being said, perhaps the most justifiable reason for hosting such a mega-event is entirely intangible. Unquantifiable effects such as influences on international politics or an opportunity to bolster a sense of national pride were ignored in this analysis but are not unimportant. Wen Jiabao, the sixth Premier of the State Council of the People's Republic of China spoke of the 2008 Beijing Olympics not in terms of economic gain, but instead in terms of an opportunity to show how "democratic, open, civilized, friendly, and harmonious" China was (Barclay, 2009).

As corrupt FIFA administrators are ousted from the system and the association gets a fresh start, it is important officials take both the tangible and the intangible into consideration when deciding which countries will have the opportunity to host one the world's most prestigious sporting events. To do so, it is imperative these officials understand the assumptions underlying the *ex ante* studies they are provided. Hopefully,

this study can provide a basic framework that can be more holistically developed to assist in this analysis, and the FIFA World Cup can return to the level of prestige with which it was once associated.

REFERENCES

Altman, D., Gore, S., Gardner, M., & Pocock, S. (1983). *Statistical guidelines for contributors to medical journals.* British Medical Journal, 1489.

Aragao, M. M. (2015). *Economic Impacts of the FIFA World Cup in developing countries.* Michigan: Michigan University.

Associated Press. (2016). *FIFA admits to World Cup hosting bribes, asks U.S. prosecutors for cash.* ESPN FC. Retrieved from ESPN FC.

Barclay, J. (2009). Predicting the Costs and Benefits of Mega-Sporting Events: Misjudgement of Olympic Proportions? *IEA Economic Affairs*, 62-66.

BBC World News. (2015, December 21). *Fifa corruption crisis: Key questions answered*. Retrieved from BBC World News: http://www.bbc.com/news/world-europe-32897066

Cornelissen, S. (2007). China and the 2008 Beijing Olympics: The dynamics and implications of sport mega-events in the semi-periphery. *The China Monitor*, 4-5.

FIFA. (2016, 11 20). *FIFA World Cup.* Retrieved from FIFA.com: http://www.fifa.com/aboutfifa/worldcup/

FIFA. (2016, 11 20). *History of FIFA - The First FIFA World Cup.* Retrieved from FIFA.com: http://www.fifa.com/about-fifa/who-we-are/history/first-fifa-world-cup.html

Goff, S. (2016, November 11). Will the Trump presidency affect U.S. bid to host 2026 World Cup? *The Washington Post*.

Horne, J., & Manzenreiter, W. (2004). *Accounting for Mega-Events.* London: ISSA and SAGE Publications.

Human Rights Watch. (2012). *Building a Better World Cup: Protecting Migrant Workers in Qatar Ahead of FIFA 2022.* Human Rights Watch.

Keim, M. (2015). *A Cost Benefit Analysis of Hosting the Olympics: A Case Study of the 2000 Sydney Olympics.* Fort Worth: Texas Christian University.

Mabugu, R., & Mohamed, A. (2008). *The economic impacts of government financing of the 2010 FIFA World Cup.* University of Stellenbosch, Bureau for Economic Research.

Maennig, W. (2007). *One Year Later: A Re-Appraisal of the Economics of the 2006 Soccer World Cup.* Hamburg: Hamburg Contemporary Economic Discussions.

Matheson, V. (2006). *Mega-Events: The effect of the world's biggest sporting events on local, regional, and national economies.* Worcester: College of the Holy Cross, Department of Economics.

Matheson, V., & Baade, R. (2004). Mega-Sporting Events in Developing Nations: Playing the Way to Prosperity/. *The South African Journal of Economics*, 1085-1096.

Melville, S., & Riaan, R. (2008). THE ECONOMIC VALUE OF THE 2010 SOCCER WORLD CUP. *Acta Commercii*, 1-14.

Mills, B., & Rosentraub, M. (2013). Hosting mega-events: A guide to the evaluation of development effects in integrated metropolitan regions. *Tourism Management*, 238-246.

Pillay, U., & Bass, O. (2008). Mega-events as a Response to Poverty Reduction: The 2010 FIFA World Cup and its Urban Development Implications. *Urban Forum*, 329.

Szymanski, S. (2002). *The Economic Impact of the World Cup.* London: World Economics.

Whitson, D., & Horne, J. (2006). Part 2: The Global Politics of Sports Mega-Events: Underestimated costs and overestimated benefits? Comparing the outcomes of sports mega-events in Canada and Japan. *The Sociological Review*, 71-89.

Zimbalist, A. (2011). Brazil's Long To-Do List. *Americas Quarterly*.