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## The Effects Hosting an Olympic Games has on the Host Nation's Economy

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*The Effects Hosting an Olympic Games has on the Host Nation's Economy*

An Honors Thesis submitted in partial fulfillment of the requirements for Honors in  
Economics

By:  
William Kite

Under the Mentorship of Dr. Gregory Brock

ABSTRACT

In today's world, many countries put a huge emphasis on hosting/bidding for the rights to host an Olympics Games. This has caused countries to spend enormous amounts of money to improve their country in order to be selected to host this event. Thus, this paper is going to examine the benefits that these countries get from hosting an Olympic Games. We investigate the influences that hosting an Olympic Games has on that country's gross domestic product per capita and their levels of international trade. In addition, we also examine those countries that bid for an Olympic Games, but do not win the bid to examine the effects that the even going to the trouble to bid for an Olympic Games has on the economy of those countries.

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## **Introduction**

The right to host an Olympic Games is a very prestigious honor, and this causes the selection process to win the right to host these events to be extremely competitive. In order to ensure that the best nation is selected to host a particular Olympic Games, the International Olympic Committee (IOC) was created on June 23<sup>rd</sup> 1894. The IOC is in charge of deciding which city is best suited to host a particular Olympic Games, and they accomplish this goal through a two year bidding process that takes place nine years before the anticipated start day of the actual opening ceremony of the Olympics. This process is broken down into two stages: the applicant phase and the candidature phase. In the applicant phase, interested cities, backed by their nation, are required to application file to the IOC, and the IOC then completes a detailed report of each bid. These reports are then shared by the IOC Executive Board which decides which cities meet the requirements to advance to the candidature phase. In the second phase, each city is required to give a presentation as to why they should host the Games to the IOC, and the IOC then votes to determine which city wins the honor of hosting the Olympic Games. This election process is fully completed seven years prior to the anticipated start of the Olympic Games.

In order to prove to the IOC that their city is the most qualified to host the Olympic Games, potential host cities often get in a bidding war that causes them to spend excessive amounts of money in order to get to host the Games. In particular, it has become common practice for each elected host city to try and “out-do” or to create a more attractive Olympic Games than the previous host city. There is no better example of

this than in 2008 when the city of Beijing, obviously backed by the nation of China, spent an estimated 42 Billion US dollars in their attempt to create the best Olympic Games atmosphere ever. This excessive spending to host the Olympic Games has led some people, in particular economists, to wonder if the potential benefits of hosting the Olympic Games outweigh the increasing costs that are becoming necessary to host an event of this caliber.

The costs associated with hosting an Olympic Games are relatively easy to estimate, for it is relatively easy to total the amount of money spent on the new construction and improvements of infrastructure, sports stadiums, etc. However, it is much harder to estimate the potential benefits that a host city or nation will generate as a result from hosting an Olympic Games. Some potential benefits that have been brought in previous studies are that when a city/nation is elected to host an Olympic Games, their nation's exports will rise due to the increased exposure of tourists that visit during the duration of the Olympic Games (Rose and Spiegel). Also, it is expected that an inflow of new funds will come into the host nation's economy that would not have flown into the nation's economy had the country not been selected to host the Olympic Games (Kasimati). This inflow of capital into a nation's economy will lead to a rise in per capita Gross Domestic Product for the host nation. There are also many other benefits that come from hosting an Olympic Games that are extremely difficult to put a monetary value on, such as the honor of being able to host the Games or the ability to showcase what your country has to offer on a global stage.

In this paper, we are going to examine the effects that hosting an Olympic Games ceremony has on the host nations per capita Gross Domestic Product and their amount of

exports. We are also going to look at the effects on those same statistics on countries that placed a bid on hosting the Olympics, but did not win the bid. We are going to factor in for the fact that the Summer Olympic Games generally have more countries that participate in the Games, and thus, we are going to examine that effects on Olympics in general, only summer Olympic Games, and only Winter Olympic games. In order to examine these effects, we are going to run a simple OLS regression to examine the effects and the correlation amongst the variables. We are expecting to see a significant increase in per capita GDP and exports for not only the countries that win the right to host the Olympic Games, but also the countries that go through the trouble to place a bid for the Olympics. We will then be comparing these results to the results found in a similar study done by Andrew Rose and Mark Spiegel in their study called “The Olympic Effect”.

### **Methodology**

Before we began looking for data, we had to determine which countries had won the Olympics for each particular year. In addition, we had to go back and examine which countries had place bids to host the Olympic Games, but lost the vote by the International Olympic Committee (IOC) in the final stages. We considered countries that fell into this category as the “runner-ups” or the countries that fell just short of winning the bid to host the Olympics. This was crucial, for in our study we were examining both the countries that won the bid and the countries that were considered to be the “runner-ups”. Another important fact to point out with our data is that we tried to only use data that was collected post World War II, for we wanted to avoid the unwanted effects that this abnormal economic data would have on our analysis of the Olympic Games.

Additionally, we chose to start our data beginning in 1960, for we added an eight year lag and an eight year leap on to all of our data. Thus, by starting in 1960, it ensures that all of our data (including the lag years) are in the post-World War II era.

There are also some other important factors to mention about our data before we begin our analysis of it. One important thing to mention about our data is that all of the data in the excel sheet have been converted into 2014 US dollars using the CPI inflation calculator provided by the Bureau of Labor statistics (BLS.gov). This is extremely important, for without converting all the data into a common currency, we would not be able to make accurate comparisons or assumptions about the effects the Olympic Games had on the interested variables. Another important aspect about our data is that the most recent Olympic Games used in our analysis is the 2012 Summer Olympic Games hosted in London. Thus obviously, when we attempted to add on our eight year leap onto the data, we were unable to do so seeing as how it is only 2015. Thus, with all the winning and bidding countries for the 2008, 2010, and 2012 Olympic Games, our eight year leap data reflects the data for those categories in 2014 or the most recent data that was available.

In order to analyze the data, we ran an ordinary least squares regression (OLS) test to determine the effects that various variables had on the anticipated outputs. In our case, the output or the results that we were interested in analyzing are the gross domestic product per capita and the total amount of exports with an eight year lag from the year that a country hosted or bid for the Olympic Games. The independent or explanatory variables that were used in the regression were: Per Capita GDP year of host, Per capita GDP 8 years before host, Exports year of host, exports 8 years before host, country



population 8 years before host, country population at time of host, and country population 8 years after the host date. In addition, two dummy variables were added to the regression model. The first dummy variable added was that I titled “Win Bid”, and this variable was used to determine if the country actually won the bid to host the Olympic Games. If the country actually won the bid to host the Olympic Games a “1” was used to signal yes, otherwise a “0” was used to signal no. The second dummy variable used in my comparisons was a variable titled “summer”, and this variable was used to signal if that particular Olympic Games was a summer or Winter Games. A very similar process to the first dummy variable was used, such that a “1” meant yes it was Summer Olympics and a “0” meant no it was not. Since there are only two types of Olympic Games, summer or winter, a “0” in the “summer” dummy variable category implies that a particular Olympic Games was a winter games, and thus, there is no need to create a third dummy variable for “winter”.

In addition to our regression analysis, we will also be comparing the impacts that hosting an Olympic Games has on the gross domestic product per capita and the total amount of exports of a country in another manner. We will be doing this by calculating the average annual percentage change in both the gross domestic product per capita and total exports. This will allow us to look exactly at the average change in per capita GDP and the total exports, both eight years before the Olympic Games and eight year after the Olympic Games, and try to determine the impact that the Games have these statistics. This will allow us to examine whether there is a bigger change in these factors when the Olympic Games are announced or in the years after the actual host date. In addition, we will once again be able to compare the differences in countries that actually win the right

to host the Olympic Games versus those countries who are considered to be the “runner-up” countries. Also, due to a lack of data available, the 1976 Soviet Union “runner-up” bid, the 1980 Soviet Union successful bid, and the 1984 Yugoslavia successful bids are ignored in our data analysis in an attempt to keep our data as accurate as possible in making comparisons amongst the various impacts the Olympic Games have on nation’s economies.

### **The Impacts the Olympic Games have on Per Capita GDP**

Here we examine the impacts that various factors associated with the Olympic Games have on the host or bidding countries per capita gross domestic product. As stated above, a very simple ordinary least squares or OLS regression model was introduced in order to explain some of these effects. In order to look at these effects, the dependent variable (Per Capita GDP 8 years after host) is a function of all the explanatory variables. This can be expressed by the equation:

$$\text{GDP}_8 = \beta_0 + \beta_1(\text{GDP}) + \beta_2(\text{GDP}-8) + \beta_3(\text{exports}-8) + \beta_4(\text{exports}) + \beta_5(\text{exports } 8) + \beta_6(\text{pop}-8) + \beta_7(\text{pop}) + \beta_8(\text{pop } 8) + \beta_9(\text{win}) + \beta_{10}(\text{Summer})$$

In this equation, the  $\beta_x$  represents the coefficient from the regression analysis, and the variables are:

GDP= Per Capita Gross Domestic Product at time of host

GDP-8= Per Capita Gross Domestic Product 8 years before host

Exports-8= total exports 8 years before host

Exports= total exports at time of host

Exports8= total exports 8 years after host

Pop-8= population 8 years before host

Pop= population at time of host

Pop 8= population 8 years after host

Win= dummy variable for did country win their bid to host Olympics

Summer= dummy variable for is it a Summer Olympic Games

This allows us to take a look at the effects that each of these variables had in predicting the anticipated variable, Per capita GDP 8 years after host, and the effects that each of these explanatory variables has on our prediction equation can be seen in Table 1. This model has an R squared value of .901 meaning that about 90% of the variability in this model can be explained through the explanatory variables mentioned above. Thus, although this is a very simple model, it should be able to be relatively close to predicting the GDP per capita after 8 years of hosting/bidding for the Olympic Games. One of the most interesting results to take a look at from our regression analysis is the coefficient from the dummy variable “win”. This coefficient, as seen in table 1, is negative, and this suggests that a potential host countries per capita GDP will be lower if they actually win the bid to host the Olympic Games rather than if they are just a “runner-up”. This suggests that while a country is better off putting in a competitive bid for the Olympics, their per capita GDP will be higher if they don’t have to spend the money to actually host the Olympic Games.

Looking at the impacts that the Olympic Games has on a countries per capita GDP based on an annual percentage increase can also help us determine the magnitude of these effects. This also allows us to compare whether there was bigger change in Per Capita GDP in the years after announcement, but prior to the Olympic Games or in the

years after the actual hosting of the event. The percentage changes in Per Capita GDP in the eight years prior to the actual host date are shown in table 2 for each country that won or was a “runner-up” for the Olympic Games. Table 3 shows the percentage change in Per Capita GDP for each of these countries in the eight years after the actual host date. At the end of each of these tables is the average percentage change of all these countries and it can be seen that the average change is higher in the years prior to the host. This suggests that countries might gain more from just the announcement of the games rather than the event itself.

### **The Impacts the Olympic Games have on Total Exports**

Here we are exploring the impacts that hosting/ bidding for an Olympic Games have on a nation’s total exports. Once again, a simple OLS regression model will be used to determine the effects that various variables have on the total exports that the country has eight years after the host date of the Olympic Games. These effects can be examined and predicted again by the following equation:

$$\text{Exports}_8 = \beta_0 + \beta_1(\text{GDP}-8) + \beta_2(\text{GDP}) + \beta_3(\text{GDP } 8) + \beta_4(\text{exports}-8) + \beta_5(\text{exports}) + \beta_6(\text{pop}-8) + \beta_7(\text{pop}) + \beta_8(\text{pop } 8) + \beta_9(\text{win}) + \beta_{10}(\text{Summer})$$

In this equation, the  $\beta_x$  represents the coefficient variable from the regression test, and the variables are once again defined as the following:

GDP= Per Capita Gross Domestic Product at time of host

GDP-8= Per Capita Gross Domestic Product 8 years before host

GDP 8= Per Capita Gross Domestic Product 8 years after host

Exports-8= total exports 8 years before host

Exports= total exports at time of host

Pop-8= population 8 years before host

Pop= population at time of host

Pop 8= population 8 years after host

Win= dummy variable for did country win their bid to host Olympics

Summer= dummy variable for is it a Summer Olympic Games

By using this simple OLS regression model, we are able to analyze the impacts that various factors had on the total exports of a nation due to the Olympic Games. In this case, the R squared value is .982 which is considered to be extremely high. This means that over 98 percent of the variation in the dependent variable, the exports after 8 years from the host date, is explained in this model. Another important factor to note here is that the adjusted R squared value is very close to the R squared value, and this means that all of the variables are significant and we have a sufficient amount of data to make assumptions from this model. Another important factor to take away from this model is the coefficient from the dummy variable “Win Bid”. This variable is an extremely high positive number (as seen in table 4), and this suggests to us that countries exports will increase significantly more if they win their bid to host the Olympic Games. This suggests that it is more beneficial to a country in terms of total exports to win their bid to host the Olympic Games rather than just be one of the countries that places a competitive bid but comes up short or “a runner-up” country.

In an attempt to replicate these results found in the regression analysis, we calculated the average annual percentage growth in total exports for both countries that “Win” their bid to host the Olympic Games and those countries that lost their bid or are

considered to be “runner-up countries”. The average percentage change in total exports before the host date are shown in table 5, and the average percentage change in total exports after the host date are shown in table 6. This data was then used to calculate the average percentage change in total exports both before and after host for “winning countries” and “runner-up countries”, and this data can be found in tables 7 and 8, respectively. As the tables show, winning countries experience a 10.85% growth before host and a 7.01% growth after host as compared with “runner-up” countries which only experience a 7.97% growth before host and a 6.86% growth after host. This data reinforces our findings from the regression analysis that it is better off for a country to win the bid to host the Olympic Games in terms of their nation’s total exports.

### **Conclusions**

While there are many factors that the models used in this paper did not take into consideration when examining the impacts that hosting/bidding for an Olympic Games has on a nation’s economy, there are several findings that were quite interesting. One of these findings is the fact winning a bid to host an Olympic Games has a negative effect on the host countries Per Capita GDP when compared to “runner-up” countries. This suggests that a “runner-up” country would gain a greater impact on their Per Capita GDP than the country that actually wins the right to host the Olympic Games. However, contrary to this finding, our study shows that winning the bid to host an Olympic Games has a positive effect on those nations’ total exports when compared to “runner-up” countries. This suggests that it is more beneficial for a country in terms of total exports to win the bid to host the Olympic Games. The fact that these factors contradict each other

is extremely interesting, and it suggests that there must be other factors not explained in this model that are affecting these economic statistics.

Another key factor that must be done is to compare the findings from our study to those similar studies completed before ours to see if our findings are the same. In a study called “The Olympic Effect” completed by Andrew Rose and Mark Spiegel, they examined the effect that hosting an Olympic games has on various economic data. While they used a much more complicated model to try and predict these results, our findings can still be compared to theirs in many ways. In Rose and Spiegel’s study, they found a nation’s total exports would increase more by being a “runner-up” as compared to being a “winning nation”. This is the opposite of what our study found, and the unanimous question that is going to be asked is” why is this case?” While I cannot be certain, I am assuming that their model takes into account a variety of different variables, and this is leading us to different conclusions. Another possible answer as to why our models are drawing different conclusions is that our data might be different. This could be the reason, for it is very difficult to gather data on some countries due to the difference in governments and the length of time our data covers. In addition, this data is collected by various organizations, and even today this data is not always accurate, let alone the data collected over fifty years ago. Despite these differences, the fact remains that the Olympic Games is still a worldwide event that can have huge impacts on many nation’s economies, and there needs to be more studies conducted to determine the actual magnitude of these impacts.

## Works Cited

- Berlemann, Michael, and Jan-Erik Wesselhoft. *Estimating Aggregate Capital Stocks Using the Perpetual Inventory Method* (2014): n. pag. Lucius & Lucius Verlagsgesellschaft, 2014. Web. 9 Sept. 2014.
- Brock, Gregory, and Ewan Sutherland. "Telecommunications and Economic Growth in the Former USSR." *East European Quarterly* XXXIV.3 (2000): 319-35. Web. 22 May 2014.
- "Current World Population." *World Population Clock: 7 Billion People* (2015). Dadax, 2015. Web. 30 Mar. 2015.
- "Exports of Goods and Services (BoP, Current US\$)." Exports of Goods and Services (BoP, Current US\$). The World Bank Group, 2015. Web. 31 Mar. 2015.
- Floros, Christos. "The Impact of the Athens Olympic Games on the Athens Stock Exchange." *Journal of Economic Studies* 37.6 (2010): 647-57. Web. 28 Aug. 2014.
- "Former Yugoslavia: Population." *Former Yugoslavia Population: Historical Data with Chart*. N.p., 2010. Web. 30 Mar. 2015.
- Fowler, Geoffrey A. "China Counts the Cost of Hosting the Olympics." *WSJ*. The Wall Street Journal, 16 July 2008. Web. 30 Mar. 2015.
- "GDP per Capita (current US\$)." GDP per Capita (current US\$). The World Bank Group, 2015. Web. 31 Mar. 2015.
- "Geoba.se: Gazetteer - The World at Your Fingertips." *Geoba.se: Gazetteer - The World at Your Fingertips*. N.p., 2015. Web. 30 Mar. 2015.
- "Inflation Calculator: Bureau of Labor Statistics." *U.S. Bureau of Labor Statistics*. U.S. Bureau of Labor Statistics, n.d. Web. 30 Mar. 2015.
- Kasimati, Evangelia. "Economic Aspects and the Summer Olympics: A Review of Related Research." *International Journal of Tourism Research* 5.6 (2003): 433-44. Web. 21 Nov. 2014.



Lamotte, Olivier. "Disentangling the Impact of Wars and Sanctions on International Trade: Evidence from Former Yugoslavia." *Comparative Economic Studies* 54.3 (2012): 553-79. 26 Apr. 2012. Web. 8 Oct. 2014.

"Olympic.org." *Olympics*. N.p., n.d. Web. 30 Mar. 2015.

Rose, Andrew K., and Mark M. Spiegel. "The Olympic Effect\*." *The Economic Journal* 121.553 (2011): 652-77. Web. 21 Aug. 2014.

## Appendices

Table 1: Per capita GDP 8 years after host regression coefficients results

	<i>Coefficients</i>
Intercept	350.7447618
Per Capita GDP ( year of host)	1.007780817
Per Capita GDP ( 8 years before host)	0.291622421
Exports ( 8 years before host)	-2.56807E-08
Exports Year of host	-1.7511E-08
Exports ( 8 years after host)	2.55961E-08
Population ( 8 yrs before host)	0.000409283
Population( year of host)	-0.001156255
Population( 8 yrs after host)	0.000713546
Win Bid	-840.3093274
Summer	171.1214923

Table 2: Average Per Capita GDP Annual Growth before host

Country Name	Year	Average Per Capita GDP Annual Growth before host
Italy	1960	6.00%
Switzerland	1960	3.67%
USA	1960	1.23%

<b>USA</b>	<b>1960</b>	<b>1.23%</b>
<b>Austria</b>	<b>1960</b>	<b>8.04%</b>
<b>West Germany</b>	<b>1960</b>	<b>8.65%</b>
<b>Japan</b>	<b>1964</b>	<b>11.53%</b>
<b>USA</b>	<b>1964</b>	<b>2.13%</b>
<b>Austria</b>	<b>1964</b>	<b>5.03%</b>
<b>Austria</b>	<b>1964</b>	<b>5.03%</b>
<b>Canada</b>	<b>1964</b>	<b>1.95%</b>
<b>Finland</b>	<b>1964</b>	<b>4.75%</b>
<b>Mexico</b>	<b>1968</b>	<b>3.64%</b>
<b>USA</b>	<b>1968</b>	<b>3.90%</b>
<b>France</b>	<b>1968</b>	<b>4.88%</b>
<b>France</b>	<b>1968</b>	<b>4.88%</b>
<b>Canada</b>	<b>1968</b>	<b>3.89%</b>
<b>Finland</b>	<b>1968</b>	<b>3.74%</b>
<b>West Germany</b>	<b>1972</b>	<b>3.77%</b>
<b>Spain</b>	<b>1972</b>	<b>7.15%</b>
<b>Canada</b>	<b>1972</b>	<b>3.84%</b>
<b>Japan</b>	<b>1972</b>	<b>11.17%</b>
<b>Canada</b>	<b>1972</b>	<b>3.84%</b>
<b>Finland</b>	<b>1972</b>	<b>5.37%</b>
<b>Canada</b>	<b>1976</b>	<b>3.73%</b>
<b>USA</b>	<b>1976</b>	<b>1.78%</b>
<b>Austria</b>	<b>1976</b>	<b>5.19%</b>
<b>USA</b>	<b>1976</b>	<b>1.78%</b>
<b>Switzerland</b>	<b>1976</b>	<b>1.46%</b>
<b>USA</b>	<b>1980</b>	<b>2.06%</b>
<b>USA</b>	<b>1980</b>	<b>2.06%</b>
<b>USA</b>	<b>1984</b>	<b>2.32%</b>
<b>Japan</b>	<b>1984</b>	<b>3.33%</b>
<b>Sweden</b>	<b>1984</b>	<b>1.42%</b>
<b>South Korea</b>	<b>1988</b>	<b>10.66%</b>
<b>Japan</b>	<b>1988</b>	<b>3.50%</b>
<b>Canada</b>	<b>1988</b>	<b>2.18%</b>
<b>Sweden</b>	<b>1988</b>	<b>1.92%</b>
<b>Italy</b>	<b>1988</b>	<b>2.26%</b>
<b>Spain</b>	<b>1992</b>	<b>3.71%</b>
<b>France</b>	<b>1992</b>	<b>2.15%</b>
<b>Australia</b>	<b>1992</b>	<b>1.93%</b>
<b>France</b>	<b>1992</b>	<b>2.15%</b>

<b>Bulgaria</b>	<b>1992</b>	<b>-3.01%</b>
<b>Sweden</b>	<b>1992</b>	<b>0.84%</b>
<b>Norway</b>	<b>1994</b>	<b>2.11%</b>
<b>Sweden</b>	<b>1994</b>	<b>0.46%</b>
<b>USA</b>	<b>1994</b>	<b>1.79%</b>
<b>USA</b>	<b>1996</b>	<b>1.52%</b>
<b>Greece</b>	<b>1996</b>	<b>0.97%</b>
<b>Canada</b>	<b>1996</b>	<b>0.23%</b>
<b>Japan</b>	<b>1998</b>	<b>1.25%</b>
<b>USA</b>	<b>1998</b>	<b>1.95%</b>
<b>Sweden</b>	<b>1998</b>	<b>0.99%</b>
<b>Australia</b>	<b>2000</b>	<b>3.06%</b>
<b>China</b>	<b>2000</b>	<b>7.56%</b>
<b>Great Britain</b>	<b>2000</b>	<b>3.12%</b>
<b>USA</b>	<b>2002</b>	<b>2.19%</b>
<b>Sweden</b>	<b>2002</b>	<b>3.01%</b>
<b>Switzerland</b>	<b>2002</b>	<b>1.08%</b>
<b>Greece</b>	<b>2004</b>	<b>4.40%</b>
<b>Italy</b>	<b>2004</b>	<b>2.35%</b>
<b>South Africa</b>	<b>2004</b>	<b>-1.80%</b>
<b>Italy</b>	<b>2006</b>	<b>1.82%</b>
<b>Switzerland</b>	<b>2006</b>	<b>7.86%</b>
<b>Finland</b>	<b>2006</b>	<b>5.21%</b>
<b>China</b>	<b>2008</b>	<b>-4.93%</b>
<b>Canada</b>	<b>2008</b>	<b>2.80%</b>
<b>France</b>	<b>2008</b>	<b>3.19%</b>
<b>Canada</b>	<b>2010</b>	<b>2.55%</b>
<b>South Korea</b>	<b>2010</b>	<b>-2.46%</b>
<b>Austria</b>	<b>2010</b>	<b>3.48%</b>
<b>Great Britain</b>	<b>2012</b>	<b>-1.66%</b>
<b>France</b>	<b>2012</b>	<b>-0.02%</b>
<b>Spain</b>	<b>2012</b>	<b>-0.47%</b>
		<b>Total Average</b>
		<b>3.02%</b>

Table 3: Average Per Capita GDP Annual Growth after host

<b>Country Name</b>	<b>Year</b>	<b>Average Per Capita GDP Annual Growth after host</b>
<b>Italy</b>	<b>1960</b>	<b>6.74%</b>
<b>Switzerland</b>	<b>1960</b>	<b>2.93%</b>
<b>USA</b>	<b>1960</b>	<b>3.90%</b>
<b>USA</b>	<b>1960</b>	<b>3.90%</b>
<b>Austria</b>	<b>1960</b>	<b>4.03%</b>
<b>West Germany</b>	<b>1960</b>	<b>3.50%</b>
<b>Japan</b>	<b>1964</b>	<b>11.17%</b>
<b>USA</b>	<b>1964</b>	<b>3.10%</b>
<b>Austria</b>	<b>1964</b>	<b>5.29%</b>
<b>Austria</b>	<b>1964</b>	<b>5.29%</b>
<b>Canada</b>	<b>1964</b>	<b>3.84%</b>
<b>Finland</b>	<b>1964</b>	<b>5.37%</b>
<b>Mexico</b>	<b>1968</b>	<b>3.59%</b>
<b>USA</b>	<b>1968</b>	<b>1.78%</b>
<b>France</b>	<b>1968</b>	<b>3.91%</b>
<b>France</b>	<b>1968</b>	<b>3.91%</b>
<b>Canada</b>	<b>1968</b>	<b>3.73%</b>
<b>Finland</b>	<b>1968</b>	<b>5.04%</b>
<b>West Germany</b>	<b>1972</b>	<b>2.87%</b>
<b>Spain</b>	<b>1972</b>	<b>3.70%</b>
<b>Canada</b>	<b>1972</b>	<b>2.97%</b>
<b>Japan</b>	<b>1972</b>	<b>3.14%</b>
<b>Canada</b>	<b>1972</b>	<b>2.97%</b>
<b>Finland</b>	<b>1972</b>	<b>2.99%</b>
<b>Canada</b>	<b>1976</b>	<b>1.62%</b>
<b>USA</b>	<b>1976</b>	<b>2.32%</b>
<b>Austria</b>	<b>1976</b>	<b>2.29%</b>
<b>USA</b>	<b>1976</b>	<b>2.32%</b>
<b>Switzerland</b>	<b>1976</b>	<b>1.36%</b>
<b>USA</b>	<b>1980</b>	<b>2.64%</b>
<b>USA</b>	<b>1980</b>	<b>2.64%</b>
<b>USA</b>	<b>1984</b>	<b>1.97%</b>
<b>Japan</b>	<b>1984</b>	<b>3.98%</b>
<b>Sweden</b>	<b>1984</b>	<b>0.84%</b>
<b>South Korea</b>	<b>1988</b>	<b>8.01%</b>

<b>Japan</b>	<b>1988</b>	<b>2.50%</b>
<b>Canada</b>	<b>1988</b>	<b>0.23%</b>
<b>Sweden</b>	<b>1988</b>	<b>0.49%</b>
<b>Italy</b>	<b>1988</b>	<b>1.49%</b>
<b>Spain</b>	<b>1992</b>	<b>3.23%</b>
<b>France</b>	<b>1992</b>	<b>1.91%</b>
<b>Australia</b>	<b>1992</b>	<b>3.06%</b>
<b>France</b>	<b>1992</b>	<b>1.91%</b>
<b>Bulgaria</b>	<b>1992</b>	<b>1.20%</b>
<b>Sweden</b>	<b>1992</b>	<b>2.72%</b>
<b>Norway</b>	<b>1994</b>	<b>2.96%</b>
<b>Sweden</b>	<b>1994</b>	<b>3.01%</b>
<b>USA</b>	<b>1994</b>	<b>2.19%</b>
<b>USA</b>	<b>1996</b>	<b>1.87%</b>
<b>Greece</b>	<b>1996</b>	<b>4.40%</b>
<b>Canada</b>	<b>1996</b>	<b>1.36%</b>
<b>Japan</b>	<b>1998</b>	<b>0.88%</b>
<b>USA</b>	<b>1998</b>	<b>1.53%</b>
<b>Sweden</b>	<b>1998</b>	<b>6.25%</b>
<b>Australia</b>	<b>2000</b>	<b>4.88%</b>
<b>China</b>	<b>2000</b>	<b>-4.93%</b>
<b>Great Britain</b>	<b>2000</b>	<b>3.98%</b>
<b>USA</b>	<b>2002</b>	<b>0.20%</b>
<b>Sweden</b>	<b>2002</b>	<b>4.92%</b>
<b>Switzerland</b>	<b>2002</b>	<b>10.99%</b>
<b>Greece</b>	<b>2004</b>	<b>-1.48%</b>
<b>Italy</b>	<b>2004</b>	<b>-1.10%</b>
<b>South Africa</b>	<b>2004</b>	<b>3.95%</b>
<b>Italy</b>	<b>2006</b>	<b>-0.47%</b>
<b>Switzerland</b>	<b>2006</b>	<b>4.18%</b>
<b>Finland</b>	<b>2006</b>	<b>0.75%</b>
<b>China</b>	<b>2008</b>	<b>10.17%</b>
<b>Canada</b>	<b>2008</b>	<b>0.60%</b>
<b>France</b>	<b>2008</b>	<b>-1.52%</b>
<b>Canada</b>	<b>2010</b>	<b>0.45%</b>
<b>South Korea</b>	<b>2010</b>	<b>2.06%</b>
<b>Austria</b>	<b>2010</b>	<b>0.51%</b>
<b>Great Britain</b>	<b>2012</b>	<b>0.46%</b>
<b>France</b>	<b>2012</b>	<b>0.46%</b>

<b>Spain</b>	<b>2012</b>	<b>0.15%</b>
		<b>Total Average</b>
		<b>2.83%</b>

Table 4: Total exports 8 years after host regression results

	<i>Coefficients</i>
Intercept	54540040086
Per Capita GDP ( 8 years after host)	5113250.225
Per Capita GDP ( year of host)	-225515.2561
Per Capita GDP ( 8 years before host)	-8469550.988
Exports ( 8 years before host)	0.903440571
Exports Year of host	0.413307821
Population ( 8 yrs before host)	-2846.503331
Population( year of host)	10283.58672
Population( 8 yrs after host)	-6205.813969
Win Bid	2337800133
Summer	-29374563930

Table 5: Average total export annual growth before host

<b>Country Name</b>	<b>Year</b>	<b>Average export annual growth before host</b>
<b>Italy</b>	<b>1960</b>	<b>28.34%</b>
<b>Switzerland</b>	<b>1960</b>	<b>14.21%</b>
<b>USA</b>	<b>1960</b>	<b>7.61%</b>
<b>USA</b>	<b>1960</b>	<b>7.61%</b>
<b>Austria</b>	<b>1960</b>	<b>21.40%</b>
<b>West Germany</b>	<b>1960</b>	<b>19.42%</b>
<b>Japan</b>	<b>1964</b>	<b>21.65%</b>
<b>USA</b>	<b>1964</b>	<b>7.85%</b>
<b>Austria</b>	<b>1964</b>	<b>15.22%</b>
<b>Austria</b>	<b>1964</b>	<b>15.22%</b>
<b>Canada</b>	<b>1964</b>	<b>8.30%</b>
<b>Finland</b>	<b>1964</b>	<b>8.38%</b>
<b>Mexico</b>	<b>1968</b>	<b>7.31%</b>
<b>USA</b>	<b>1968</b>	<b>6.35%</b>
<b>France</b>	<b>1968</b>	<b>7.67%</b>

<b>France</b>	<b>1968</b>	<b>7.67%</b>
<b>Canada</b>	<b>1968</b>	<b>10.37%</b>
<b>Finland</b>	<b>1968</b>	<b>5.62%</b>
<b>West Germany</b>	<b>1972</b>	<b>3.00%</b>
<b>Spain</b>	<b>1972</b>	<b>26.21%</b>
<b>Canada</b>	<b>1972</b>	<b>11.29%</b>
<b>Japan</b>	<b>1972</b>	<b>26.26%</b>
<b>Canada</b>	<b>1972</b>	<b>11.29%</b>
<b>Finland</b>	<b>1972</b>	<b>9.44%</b>
<b>Canada</b>	<b>1976</b>	<b>10.41%</b>
<b>USA</b>	<b>1976</b>	<b>11.37%</b>
<b>Austria</b>	<b>1976</b>	<b>19.60%</b>
<b>USA</b>	<b>1976</b>	<b>11.37%</b>
<b>Switzerland</b>	<b>1976</b>	<b>15.21%</b>
<b>USA</b>	<b>1980</b>	<b>12.65%</b>
<b>USA</b>	<b>1980</b>	<b>12.65%</b>
<b>USA</b>	<b>1984</b>	<b>1.35%</b>
<b>Japan</b>	<b>1984</b>	<b>4.53%</b>
<b>Sweden</b>	<b>1984</b>	<b>-1.32%</b>
<b>South Korea</b>	<b>1988</b>	<b>16.54%</b>
<b>Japan</b>	<b>1988</b>	<b>5.07%</b>
<b>Canada</b>	<b>1988</b>	<b>2.75%</b>
<b>Sweden</b>	<b>1988</b>	<b>1.42%</b>
<b>Italy</b>	<b>1988</b>	<b>1.66%</b>
<b>Spain</b>	<b>1992</b>	<b>13.29%</b>
<b>France</b>	<b>1992</b>	<b>9.34%</b>
<b>Australia</b>	<b>1992</b>	<b>6.63%</b>
<b>France</b>	<b>1992</b>	<b>9.34%</b>
<b>Bulgaria</b>	<b>1992</b>	<b>-6.03%</b>
<b>Sweden</b>	<b>1992</b>	<b>6.08%</b>
<b>Norway</b>	<b>1994</b>	<b>4.10%</b>
<b>Sweden</b>	<b>1994</b>	<b>2.98%</b>
<b>USA</b>	<b>1994</b>	<b>8.26%</b>
<b>USA</b>	<b>1996</b>	<b>5.89%</b>
<b>Greece</b>	<b>1996</b>	<b>3.23%</b>
<b>Canada</b>	<b>1996</b>	<b>4.12%</b>
<b>Japan</b>	<b>1998</b>	<b>0.74%</b>
<b>USA</b>	<b>1998</b>	<b>4.81%</b>
<b>Sweden</b>	<b>1998</b>	<b>2.21%</b>
<b>Australia</b>	<b>2000</b>	<b>2.65%</b>

<b>China</b>	<b>2000</b>	<b>29.22%</b>
<b>Great Britain</b>	<b>2000</b>	<b>3.37%</b>
<b>USA</b>	<b>2002</b>	<b>1.85%</b>
<b>Sweden</b>	<b>2002</b>	<b>2.11%</b>
<b>Switzerland</b>	<b>2002</b>	<b>0.50%</b>
<b>Greece</b>	<b>2004</b>	<b>10.02%</b>
<b>Italy</b>	<b>2004</b>	<b>2.02%</b>
<b>South Africa</b>	<b>2004</b>	<b>4.41%</b>
<b>Italy</b>	<b>2006</b>	<b>4.47%</b>
<b>Switzerland</b>	<b>2006</b>	<b>6.30%</b>
<b>Finland</b>	<b>2006</b>	<b>6.60%</b>
<b>China</b>	<b>2008</b>	<b>44.07%</b>
<b>Canada</b>	<b>2008</b>	<b>3.69%</b>
<b>France</b>	<b>2008</b>	<b>7.46%</b>
<b>Canada</b>	<b>2010</b>	<b>3.44%</b>
<b>South Korea</b>	<b>2010</b>	<b>17.21%</b>
<b>Austria</b>	<b>2010</b>	<b>8.47%</b>
<b>Great Britain</b>	<b>2012</b>	<b>1.87%</b>
<b>France</b>	<b>2012</b>	<b>1.21%</b>
<b>Spain</b>	<b>2012</b>	<b>3.89%</b>

Table 6: Average total export annual growth after host

Country Name	Year	Average export annual growth after host
<b>Italy</b>	<b>1960</b>	<b>15.73%</b>
Switzerland	1960	9.99%
USA	1960	6.35%
<b>USA</b>	<b>1960</b>	<b>6.35%</b>
Austria	1960	8.48%
West Germany	1960	15.80%
<b>Japan</b>	<b>1964</b>	<b>15.92%</b>
USA	1964	6.27%
Austria	1964	13.89%
<b>Austria</b>	<b>1964</b>	<b>13.89%</b>
Canada	1964	11.29%
Finland	1964	9.44%
<b>Mexico</b>	<b>1968</b>	<b>15.46%</b>



USA	1968	11.37%
France	1968	19.43%
<b>France</b>	<b>1968</b>	19.43%
Canada	1968	10.41%
Finland	1968	18.00%
<b>West Germany</b>	<b>1972</b>	13.55%
Spain	1972	14.24%
Canada	1972	7.40%
<b>Japan</b>	<b>1972</b>	16.01%
Canada	1972	7.40%
Finland	1972	17.57%
<b>Canada</b>	<b>1976</b>	2.65%
USA	1976	1.35%
<b>Austria</b>	<b>1976</b>	-0.16%
USA	1976	1.35%
Switzerland	1976	-0.09%
USA	1980	1.29%
<b>USA</b>	<b>1980</b>	1.29%
<b>USA</b>	<b>1984</b>	6.88%
Japan	1984	5.78%
Sweden	1984	6.08%
<b>South Korea</b>	<b>1988</b>	8.95%
Japan	1988	2.11%
<b>Canada</b>	<b>1988</b>	4.12%
Sweden	1988	3.44%
Italy	1988	6.22%
<b>Spain</b>	<b>1992</b>	4.38%
France	1992	0.50%
Australia	1992	2.65%
<b>France</b>	<b>1992</b>	0.50%
Bulgaria	1992	1.07%
Sweden	1992	3.04%
<b>Norway</b>	<b>1994</b>	4.62%
Sweden	1994	2.11%
USA	1994	1.85%
<b>USA</b>	<b>1996</b>	1.66%
Greece	1996	10.02%
Canada	1996	4.48%
<b>Japan</b>	<b>1998</b>	4.38%
USA	1998	3.18%

Sweden	1998	6.30%
<b>Australia</b>	<b>2000</b>	13.33%
China	2000	44.07%
Great Britain	2000	6.86%
<b>USA</b>	<b>2002</b>	6.42%
Sweden	2002	8.72%
Switzerland	2002	11.12%
<b>Greece</b>	<b>2004</b>	0.71%
Italy	2004	1.82%
South Africa	2004	7.82%
<b>Italy</b>	<b>2006</b>	0.47%
Switzerland	2006	5.03%
Finland	2006	-0.91%
<b>China</b>	<b>2008</b>	5.03%
Canada	2008	-0.75%
France	2008	-1.42%
<b>Canada</b>	<b>2010</b>	0.99%
South Korea	2010	2.47%
Austria	2010	0.87%
<b>Great Britain</b>	<b>2012</b>	-0.25%
France	2012	0.09%
Spain	2012	0.52%

Table 7: Average total export annual growth for “Winning Countries”

Winning country Average export annual growth before host	10.85%
Winning country Average export annual growth after host	7.01%

Table 8: Average total export annual growth for “Runner-up Countries”

"Runner UP" countries average export annual growth before host	7.97%
"Runner UP" countries average export annual growth after host	6.86%