The Economic Development and Tourism Effects of the Olympics

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ABSTRACT The aim of this paper is to determine if and how mega sports organizations like the Olympics contribute to the countries' economies, as well as its citizens' well-being through tourism. The World Bank relevant economic data set from 1990-2012 was used for the paper. Australia, Greece and China's tourism and GDP figures were analyzed by using the Multiple Linear Regression Model. The Eviews8 program was used for the Chow Breakpoint Test. In addition, Percentage Trend Analysis was also applied to the whole data. When Australia, Greece, and China examples were considered, the researchers found that the Olympics have breakpoint effect on these countries' economic development and citizens' well-being but not on tourism except for Greece. The view that mega organizations such as the Olympics will bring automatic, permanent and positive contribution to the economy through image rise and tourism must be reconsidered.

INTRODUCTION

It is important to understand the rationale behind countries' efforts to host mega sporting events like the Olympics. The main reason for these struggles is the anticipation of global media attention. This will promote the image of the host country as well as the host cities because tourism potentials of the country will definitely thrive. Most governments in the world know and believe in this opportunity. The paper aims to understand whether this expectation is meaningful and whether organizing mega events like the Olympics are worth pursuing. The researchers believe that the outcomes of this paper will help relevant authorities when and if they plan to bid for the mega- sporting events in their countries. Dinnie (2003) noted that there are increasingly more reasons why nations must manage and control their branding, such as the need to attract tourists and to find markets for their exports. Mega-events are likely to have long-term positive effects for the cities and communities that hosted them and will provide opportunities for increased international publicity and recognition (Deccio et al. 2002; Keller 2001). The hosting of mega- and hallmark events is perceived as an important vehicle for tourism development because it increases the number of tourists and builds a positive image for the country (Fourie et al. 2011; Getz 2008). Despite the high costs of actual event hosting, several studies identified the economic development through image promotion as the main benefit for hosting countries (Kim et al. 2010; Kim et al. 2005; Matos 2006). Considering the capacity to draw visitors, mega-events have become a substantial component of many economic development plans (Kotler et al. 1993). It is also commonly assumed that the scale of such event and the scale of the preparation for it will create larger and lasting economic benefits to the host city (Owen 2005). There is also an argument that even for a short while destination image will change, therefore, the number of tourist arrivals will increase, filling the hotels and creating thousands of extra jobs. According to Chon (1991) regional image of tourism can change and this is a dynamic process. The 2002 Korea-Japan World Cup showed that tourism image of a region change even for a short - time (Kim et al. 2005). But whether this change of image is permanent and whether later the image will return to its former level, should be an issue for examination (Kim et al. 2005). An expansion in tourism is generally assumed to have a positive contribution to economic growth.

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The money a tourist spends can represent a significant income source for a nation's economy (Balaguer et al. 2002). So, when the announcement made for the future host of the Olympics is made, is the joy of the winning country and the disappointment of the losing country really based on any quantitative analysis? At this point, a research was needed to understand if and how mega sports events like the Olympics contribute to the country's economy and the well-being of the citizens through tourism. Therefore the relevant economic data from 1990 to 2012 of the countries that hosted the Olympics after 2000 (Australia, Greece and China) were examined and the data were analyzed to see whether the Olympics have the capability of making economic contributions to a renown country. The data for the number of foreign tourists and tourism revenue from the year of the Olympics (Australia: 2000, Greece: 2004, China: 2008) up until 2012 was analyzed to see whether there are any structural trend breakpoints. Similarly, Gross Domestic Product (GDP), which is calculated by including tourism revenue figures, and Per Capita Income numbers were analyzed to see whether the year of the Olympics and onwards have any significant changes on economic growth and economic well-being of the nation in question. By analyzing all the relevant data, the economic impacts of the Olympics for the hosting countries could be seen more clearly.

MATERIAL AND METHOD

All the relevant economic data used in this paper was taken from World Bank economic data set covering a period of $1990 = 2012$. The Multiple Linear Regression Model and the Chow Breakpoint Test were used to analyze the data with the help of "Eviews8" program. Percentage Trend Analysis was used to see the changes over the years.

Multiple Linear Regressions

Multiple Linear Regression is a statistical technique that uses several explanatory variables to predict the outcome of a response variable. The goal of multiple linear regression (MLR) is to model the relationship between the explanatory and response variables. MLR takes a group of random variables and tries to find a mathematical relationship between them. The model creates a relationship in the form of a straight line (linear) that best approximates all the individual data points. The model for MLR, given n observations, is: $yi = B0 + B1xi1 + B2xi2 + ... + Bpxip + Ei$ where $i = 1, 2, ..., n$.

Chow Breakpoint Test

The Chow Test is a statistical and econometric test of whether the coefficients in two linear regressions on different data sets are equal. In econometrics, the Chow test is most commonly used in time series analysis to test for the presence of a structural breakpoint. In program evaluation, the Chow test is often used to determine whether the independent variables have different impacts on different subgroups of the population.

Breakpoint Year

The year of the Olympic was taken as a breakpoint year. Some people may argue this decision. The effect of an improvement on a country's image in tourism becomes glaring when that country attracts media attention and this would be the year of the Olympic.

Percentage Trend Analysis

Trend analysis is the presentation of amounts as a percentage of a base year. Having the trend percentages makes it easier to read and compare the financial data from one year to another, and calculated as:

Percent Change = (Current Year Amount – Base year Amount)/Base Year Amount.

GDP: Gross Domestic Product (GDP) is the market value of all officially recognized final goods and services produced within a country in a year, or other given period of time.

GDP PC: GDP Per Capita (PC) is often considered as an indicator of a country's standard of living. It is calculated as GDP/Population of a specified country.

Number of Tourists: The number of foreign visitors for a specified year.

Tourism Revenue: The total revenue yielded from the foreign tourists for a specified year.

RESULTS

For Australia (Table 4: Australia, Percentage Trend Analysis), GDP, GDP PC, the number of tourists and tourism revenue numbers all increased in the year of the Olympics, 2000. But the following year being 2001 all numbers showed sharp declines, especially for GDP and

Table 1: Australia, Breakpoint 2000

GDP : Chow Breakpoint Test :2000			
F-statistic	44.41731	Probability	0.000000
Log likelihood ratio	39.93168	Probability	0.000000
GDP PC : Chow Breakpoint Test :2000			
F-statistic	45.60711	Probability	0.000000
Log likelihood ratio	40.43370	Probability	0.000000
Number of Tourists : Chow Breakpoint Test :2000			
F-statistic	1.851792	Probability	0.193405*
Log likelihood ratio	4.224776	Probability	0.120949*
Tourism Revenue : Chow Breakpoint Test :2000			
F-statistic	28.59490	Probability	0.000011
Log likelihood ratio	29.27326	Probability	0.000000

Since * Prob.>0.05 there is no structural breakpoint for 2000.
Australia (Table 1: Australia, Breakpoint 2000) has structural breakpoints for GDP, GDP PC and tourism revenues but not for number of tourists.

Table 2: Greece, Breakpoint 2004GDP : Chow Breakpoint Test :2000

GDP : Chow Breakpoint Test :2004			
F-statistic	10.77022	Probability	0.000747
Log likelihood ratio	17.43080	Probability	0.000164
GDP PC : Chow Breakpoint Test :2004			
F-statistic	11.52366	Probability	0.000528
Log likelihood ratio	18.27021	Probability	0.000108
Number of Tourists : Chow Breakpoint Test :2004			
F-statistic	6.202833	Probability	0.011777
Log likelihood ratio	11.42138	Probability	0.003310
Tourism Revenue: Chow Breakpoint Test :2004			
F-statistic	8.863656	Probability	0.003257
Log likelihood ratio	14.72617	Probability	0.000634

Since all Prob. <0.05 there are structural breakpoints for all parameters for 2004.
According to the results of the Table 2 (Greece, Breakpoint 2004) Greece has structural breakpoints for all parameters: GDP, GDP PC, Number of Tourists and Tourism Revenues.

Table 3: China, Breakpoint 2008

GDP Chow Breakpoint Test :2008			
F-statistic	115.0798	Probability	0.000000
Log likelihood ratio	59.19405	Probability	0.000000
GDP PC : Chow Breakpoint Test :2008			
F-statistic	112.7954	Probability	0.000000
Log likelihood ratio	58.76839	Probability	0.000000
Number of Tourists : Chow Breakpoint Test :2008			
F-statistic	2.413231	Probability	0.125752 *
Log likelihood ratio	5.331712	Probability	0.069540 *
Tourism Revenue : Chow Breakpoint Test :2008			
F-statistic	1.993412	Probability	0.173067 *
Log likelihood ratio	4.510480	Probability	0.104848 *

Since * Prob.>0.05 there are no structural breakpoints for 2008.
China (Table 3: China, Breakpoint 2008) has two structural breakpoints, GDP and GDP PC. For Number of Tourists and Tourism Revenues no structural breakpoints were identified.

Table 4: Australia, Percentage trend analysis

Year	Change in GDP (in per-cent)	Change in GDP PC (in percent)	Change in num-ber of tourists (in per cent)	Change in tourism revenues (in per-cent)
1990-1991	4.56	3.23	-	-
1991-1992	-0.06	-1.26	-	-
1992-1993	-4.13	-5.06	-	-
1993-1994	3.48	2.39	-	-
1994-1995	14.06	12.69	-	-
1995-1996	9.06	7.64	11.78	15.64
1996-1997	8.53	7.32	3.67	-0.59
1997-1998	-8.33	-9.28	-3.50	-14.85
1998-1999	-2.67	-3.77	7.01	10.31
* 1999-2000	6.77	5.51	10.59	1.17
2000-2001	-8.81	-10.03	-1.52	-1.63
2001-2002	4.17	2.91	-0.31	6.40
2002-2003	18.31	16.86	-1.96	22.19
2003-2004	31.39	29.88	9.88	22.86
2004-2005	13.13	11.65	5.45	-3.09
2005-2006	7.76	6.18	0.60	4.57
2006-2007	14.23	13.52	2.02	23.63
2007-2008	23.62	21.16	-1.03	10.47
2008-2009	-12.20	-13.99	-0.04	-1.00
2009-2010	23.21	21.31	5.39	15.40
2010-2011	21.47	19.79	-0.17	5.79
2011-2012	10.49	8.63	4.61	-0.23

*The hosting year of the Olympic

Table 5: Greece, Percentage trend analysis

Year	Change in GDP (in per-cent)	Change in GDP PC (in percent)	Change in num-ber of tourists (in per cent)	Change in tourism revenues (in per-cent)
1990-1991	7.41	6.37	-	-
1991-1992	10.54	9.33	-	-
1992-1993	-6.38	-7.24	-	-
1993-1994	7.16	6.27	-	-
1994-1995	17.39	16.49	-	-
1995-1996	5.75	5.01	-8.85	-10.11
1996-1997	-2.45	-3.06	9.07	0.93
1997-1998	0.46	-0.08	8.40	63.10
1998-1999	-1.54	-1.97	11.43	42.84
1999-2000	-6.58	-6.88	7.66	4.79
2000-2001	4.36	4.05	7.34	-0.50
2001-2002	12.48	12.10	0.88	8.56
2002-2003	32.04	31.61	-1.49	8.37
2003-2004	18.20	17.79	-4.70	18.14
2004-2005	5.32	4.92	10.91	5.03
2005-2006	9.01	8.58	8.63	7.75
2006-2007	16.71	16.24	0.79	8.22
2007-2008	11.84	11.40	-1.40	12.11
2008-2009	-6.02	-6.40	-6.42	-15.86
2009-2010	-8.94	-9.14	0.62	-14.98
2010-2011	-0.92	0.73	9.46	19.12
2011-2012	-13.99	-13.76	-5.53	-11.15

*The hosting year of the Olympic

GDP PC. The decrease in tourism revenues, GDP and GDP PC's were so significant that these numbers fell even below those of pre-Olympic year of 1999's. Only tourist's figures stayed above the figures of 1999. In the pre-Olympic period (1995-1999), the number of tourists increased by 4.74 percent per annum on the average, while in the post-Olympic period (2000-2012) the number of tourists increased by only 2.58percent. This shows a slower growth rate. But the revenue generated by tourism in the pre-Olympic period increased by 2.65percent per year, but increased to 8.19percent after the Olympics.

Greece's GDP, GDP PC and tourism revenue numbers increased but the number of tourists decreased for the year 2004 Olympics (Table 5: Greece, Percentage Trend Analysis). This may be due to the crowding out effect. There was an increase in number in the following year being 2005. In the pre-Olympic period (1995-2003), the number of tourists increased by 4.30 percent per year on an average, while in the post-Olympic period (2004-2012) the number of tourists increased by only 1.37 percent, indicating a very slow growth. Interestingly, while tourism revenues in the pre-Olympic period increase by 14.75

Table 6: China, Percentage trend analysis

Year	Change in GDP (in per-cent)	Change in GDP PC (in percent)	Change in num-ber of tourists (in per cent)	Change in tourism revenues (in per-cent)
1990-1991	6.31	4.87	-	-
1991-1992	11.38	10.03	-	-
1992-1993	4.22	3.03	-	-
1993-1994	26.95	25.53	-	-
1994-1995	30.18	28.77	-	-
1995-1996	17.59	16.37	13.63	16.84
1996-1997	11.28	10.15	4.41	23.78
1997-1998	7.01	5.99	5.48	4.78
1998-1999	6.26	5.34	7.87	13.43
1999-2000	10.63	9.77	15.46	15.41
2000-2001	10.54	9.74	6.21	9.75
2001-2002	9.74	9.01	10.96	14.40
2002-2003	12.87	12.17	-10.41	-13.96
2003-2004	17.71	17.02	26.66	48.37
2004-2005	16.84	16.15	12.09	14.73
2005-2006	20.21	19.54	6.63	16.61
2006-2007	28.79	28.12	9.63	10.76
*2007-2008	**29.41**	**28.75**	**-3.05**	**7.30**
2008-2009	10.38	9.83	-4.10	-3.39
2009-2010	18.82	18.25	9.41	17.64
2010-2011	23.46	22.87	3.44	6.30
2011-2012	12.36	11.82	0.25	3.05

*The hosting year of the Olympic

percent per year, this figure sharply decreased to 3.15percent after the Olympics.

China's GDP, GDP PC and Tourism Revenue numbers (Table 6: China, Percentage Trend Analysis) increased, but the number of tourists decreased for the year of Olympics, 2008. In the following year being 2009, GDP and GDP PC increased, while the number of tourists and tourism revenues decreased. In the pre-Olympic period (1995-2007), the Number of Tourists increased by 9.05percent per year on the average, while in the post-Olympic period (2007-2012) the number of tourists drastically reduced to 1.37percent. Similarly, tourism revenues increased by 14.57percent per year in the pre-Olympic period, but sharply decreased to 6.18 percent after the Olympics.

DISCUSSION

In the struggle for having the competitive advantage in the world, national reputation is becoming more and more significant as countries compete for the attention of investors and tourists (Anholt 2007). Some suggested that support for mega sports events, traveling and city image are very important in attracting visitors (Searle 2002). Also, mega sport events have an enormous power and this power can likely stimulate the potential for tourism mobility, media participation and international recognition (Burgan et al. 1992; Crompton 2000). The host countries had experienced a lot of negative outcomes for the number of tourists as well as the tourism revenues, especially during the post-Olympics periods.

Tables 1, 2 and 3 draw different pictures , on the other hand, in terms of GDP and GDP PC.The Olympics have structural breakpoint effects on these countries' GDP and GDP PC, meaning that hosting the Olympics had helped to boost the hosting countries for their economic development and welfare. In contrast to our findings, some argued that the Olympics were not worth pursuing: "never host mega events since in economic terms, mega-events tend to bring in more of external money, whereas spending on a local sports team tends to recirculate economic activity rather than create new economic activity. New expenditure tends to merely replace the spending of traditional tourists, leaving little, if any, net increase in the demand for local goods and services. Both local sports teams and mega-

events involve large leakages of demand outside the local economy" (Zimbalist 2015).

Even if we assume that some countries may benefit from tourism, the effect will be very weak and temporary, since there is a little evidence about mega sporting events that enhances the generation of tourism revenues across the country (Fourie et al. 2010) and increases employment and business activities temporarily (Spilling 1998; Leiper 1997). Porter et al. 2008 also argued that the tourism, employment, and income effects of the 2006 World Cup (WC) were not realized. These findings are in line with our results, especially for Australia, and China, where a number of tourists and tourism revenues had no structural breakpoints. Australian and Chinese tourism sectors had not experienced the anticipated growths.

The assumption of hosting the Olympics will bring automatic, permanent and positive consequences is easily accepted by the keen state officials of the hosting countries but according to our results this assumption has some flaws. For example, when the Australian tourism authorities considered the 2000 Olympics as an excellent opportunity to promote Australia to international markets and used a number of instruments to encourage foreign tourism (Chalip 2002), the number of hotel rooms in Sydney increased by 40percent before the Games (1994–2000), but after the Games there has been significant decline in the number of visitor accommodation rooms, in part because of the conversion of former hotel or serviced apartment rooms for residential purposes (Sydney 2002). Barcelona, Seoul, and Atlanta also experienced growth in the number of hotel rooms before the Olympics, but there was a decline in the average occupancy rate during the Olympic year, as well as the first years after the Olympics. Barcelona saw that revenue per available room drastically drop by almost 60 percent in 2 years after the Olympics (LaSalle 2001). Du Plessis et al. (2011) indicated that the total number of attendees at the 2010 FIFA World Cup (WC) was only one-third of the most conservative ex-ante expectation. Manzenreiter (2008) showed that monthly foreign visitor numbers to Japan during the 2002 WC were no different to those of other months in the same year for the host country. Similarly, the researchers also found that Greece and China had experienced strong drops in the number of tourists that visited those countries, even in the Olympics years and there-

fore, leaving less revenues for the tourism sectors. There are some supporting evidences regarding short-term positive tourism effects, including the 1976 Montreal Olympics (Whitson et al. 2006), the 1994 World Cup (Baade et al. 2004), the 2000 Summer Olympic Games (Drayton, 2000), and the 2002 Winter Olympic Games (Porter et al. 2008). Hosting major sport events can cause positive shifts in tourism demand on a long-term basis, but the additional revenues might not counterbalance the investment costs that are required for the host destination (Solsberg et al. 2007). Nevertheless, our results did not produce similar results, at least for Australia, Greece and China. For the bidding countries of the Olympics, there are dominant risks that overweight the benefits. The cost of organizing the Olympics can cause a big blow to a country's economy and this may lead to bankruptcy as in the case of Greece. "Hosting the event cost almost •9 billion ($11 billion at today's exchange rate), making the 2004 Games the most expensive ever at that point. Within days of the closing ceremony, Greece warned the euro area that its public debt and deficit figures would be worse than expected. The 2004 deficit came in at 6.11 percent of gross domestic product, which is more than double the euro-zone limit while debt reached 110.6 percent of gross domestic product, resulting in the highest in the European Union. (Today, Greece's debt is 165.3 percent of GDP.) Greece became the first EU country to be placed under fiscal monitoring by the European Commission, in 2005. Although hundreds of thousands of visitors came to Greece in 2004 to be a part of the games' return to their birthplace, yet in the following years Greece's share of the tourism pie grew smaller as visitors opted for other countries, such as Croatia and Turkey, which benefited from lower prices and better marketing" (Businessweek, 2012). The heavy foreign borrowing which was used to fund the 2004 Olympics and the very negative effects of 2009, led to the Global Financial Crisis on any kind of borrowing Greece has faced with a major blow to the country's image worldwide up until now.

CONCLUSION

From the discussion, it has been observed that the tourism effect of the Olympics is vague. The reason why the researchers cannot see the expected results is because in this rapidly evolving world the cities and the countries have already been working to improve their tourism potentials through a variety of interesting and creative ways. This may be the reason why Turkey outperformed Greece in the Games year. Also visual and the internet technology and also transportation means have evolved very rapidly, thereby creating a new way of life for the people especially after 2000. With the help of this new way of life which empowered people, it became very easy to travel and explore the whole world. Most of the people who were economically capable of going abroad for the Olympics, most probably had already visited that city or country maybe more than once. So, instead of going to the Olympics, paying higher rates for hotels, paying more for airplane tickets, and experiencing chaos in traffic, people have developed a tendency to watch the Games from their home's comfort with big or mega screen TVs. Therefore, the Olympics have become a sports spectator event rather than a sports travel event.

RECOMMENDATIONS

The view that mega organizations such as the Olympics will bring automatic and positive results every time and, therefore, a permanent contribution to the economy through image promotion and tourism must be reconsidered. Even though different countries have experienced different outcomes, yet, when the researchers take the economic effects of the Olympics into consideration, recommendation suggests that the Olympics be hosted for the purpose of economic development but not for tourism.

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