Financial Engineering and Risk Management (2021) 4: 68-77
Clausius Scientific Press, Canada
DOI: 10.23977/ferm.2021.040508
ISSN 2523-2576

The Impact of the 29th Olympic Games on Beijing Inbound Tourism

Caifeng Liu

School of Sports Economics and Management, Central University of Finance and Economics, Beijing, China

Keyword: The Olympic Games, Inbound Tourism, Combined ARMA Model

Abstract: Base on combined ARMA model, the impact analysis of the 29th Olympic Games on Beijing inbound tourism shows that the 29th Olympic Games promote the inbound tourism in Beijing in the general. The 29th Olympic Games had a prominent pro-Olympic promoting effect on Beijing inbound tourism and an obvious crowding-out effect on Beijing inbound tourism in the Olympic year when the 29th Olympic Games was held. Post-Olympic valley effect did not appear in Beijing inbound tourism market. With the 2022 Beijing Winter Olympic Games coming soon, in order to strengthen the long-term impact of the Olympics on Beijing inbound tourism, further policy support is needed.

1. Introduction

As a global sports event, the Olympic Games are featured with large scale, high attention and a wide range of impact. The great impact of the Olympic Games has created and enhanced the image of the Olympic host cities as tourist destinations, which has been widely concerned. Some opinions indicate the Olympic Games have a positive effect on tourism in host city and host country. When the 2000 Olympic Games were held in Sydney Australia, developing tourism was clearly set as one of its important goals. During the Sydney Olympics, there were 350,000 visitors to Australia. Whereas, some studies show that the Olympic Games might have a certain crowding-out effect on inbound tourism during the Games. According to data released by the national bureau of statistics, during the London 2012 Olympics, the number of overseas visitors received in the UK did not increase as expected, but fell by 5% compared with the last year. Additionally, the post-Olympic tourism appears to have a valley effect. The enthusiasm for the Olympic host city will drop sharply after the Olympic Games, resulting in a low point of tourism.

With the holding of the 29th Summer Olympic Games, Beijing launched a series of thematic tourism activities such as ‘feeling the ancient Chinese civilization’ and ‘the world gathering in Beijing’, so as to reshape and consolidate the image of ‘the safest tourist resort and one of the oldest ancient civilized countries’ and promote the development of Beijing tourism. At present, the researches on the impact of the Beijing Summer Olympics on tourism are mostly qualitative analysis, and most of the researches believe that the 29th Summer Olympic Games helped to improve Beijing's international popularity, enhance Beijing's international image, improve the utilization rate of tourism facilities, improve the tourism support system, promote the upgrading of tourism product series and assist urban construction [1]. A rough estimate of the Beijing Summer Olympic tourism effect is made by using the data of previous Olympics [2]. The Beijing 2022 Winter Olympics is upcoming, the ex-post evaluation of the 29th Beijing Summer Olympics on tourism from a relatively complete Olympic cycle will enable us to make a reasonable estimation of Beijing Winter Olympic Games' impact on tourism. Based on the analysis of the combined ARMA model, the paper quantifies the impact of the 29th Beijing Summer Olympic Games on the inbound tourism in Beijing, and further determines whether the 29th Olympic Games have promotion, extrusion and valley effect, so as to provide reference for the evaluation of the impact of the Beijing 2022 Winter Olympics on tourism.

2. Method

The quantitative evaluation of the impact of major events can usually be divided into two types: ex-ante evaluation and ex-post evaluation. Ex-ante evaluation is used to predict the impact of events before the holding of event. Input-output method, measurable general equilibrium model and cost-benefit analysis are commonly used [3]. Ex-post evaluation is evaluated by comparing the economic status between the situation of events and the situation without events, and stripping the impact of events. In the research of the employment impact assessment in Los Angeles and Atlanta [4], the crucial and difficult point of the ex-post evaluation is to define the 'normal' economic state without Games. Since ex-ante and ex-post evaluation are quite different, it is very difficult to make comparison between the two methods. The selection of a method depends on the availability of good data [5]. The topic of this paper is to evaluate the impact of the 29th Olympic Games on inbound tourism in Beijing. Due to the complexity of the factors affecting inbound tourism in Beijing, the data of many influencing factors are not available. Based on the availability of statistical data and the suitability of research methods, the paper constructs a combined ARMA model to evaluate the impact of the 29th Olympic Games on the number of inbound tourists in Beijing.

Combined ARMA model is an important method of time series analysis, which establishes dynamic model based on the change rule of time series. This method does not need to consider the choice of complex explanatory variables, and can avoid the problems of false correlation and false regression which are easy to appear in complex econometric models. And also, because the change rule of time series itself has implied the interaction by many influencing factors, the combination ARMA model can simulate the change of the variables more accurately. The process of constructing combined ARMA model is as follows:

First step, establish a general time series model and fit the deterministic part of the time series. The general time series model is represented as (1): $y_t=f(t)+u_t$, where f(t) is the deterministic part of the time series y_t, and u_t is the residual difference sequence. Since the cyclical and irregular components of time series are difficult to grasp, f (t) is usually fitted according to the long-term trend and seasonal variation of time series until the residual sequence u_t becomes smooth.

Second step, develop ARMA model by applying the Box-Jenkins methodology on u_t. ARMA model, also called autoregressive moving average model, is a mixture of autoregressive model and moving average model. If a time series can be represented as a linear function of its antecedent values and random error terms, it is denoted as the autoregressive model AR (p), where p is the autoregressive order. If the time series can be expressed as a linear function of the current and previous random error terms, it is denoted as the moving average model MA (q), where q is the moving average order. For the specific expressions of the ARMA model, see (2).

Third step, based on the parameter estimation of (1) and (2), construct the combined ARMA model and estimate its parameters as a whole.

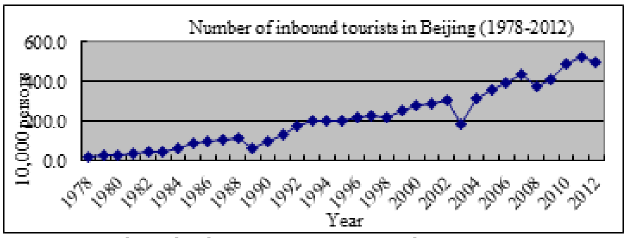
$$\begin{cases} y_t=f(t)+u_t & (1) \\ u_t=\varphi_{t-1}u_{t-1}+\varphi_{t-2}u_{t-2}+\ldots\ldots+\varphi_{t-p}u_{t-p}+\varepsilon_t-\theta_1\varepsilon_{t-1}-\theta_2\varepsilon_{t-2}-\ldots\ldots-\theta_q\varepsilon_{t-q} & (2) \end{cases}$$

Where p is the autoregressive order,φ_{t-1}, φ_{t-2}, ...,φ_{t-p} are the autoregressive coefficients, q is the moving average order,θ_1, $\theta_{2,}$, ..., θ_q are the moving regression coefficients, ε_t is a white noise sequence.

As can be seen from above, the combined ARMA model not only describes the long-term trend and seasonal fluctuation of the variables, but also considers the short-term fluctuation of the variables. So it can be more accurate for prediction. According to the change rule of the number of inbound tourists in Beijing, the combined ARMA model can better determine the number of inbound tourists in Beijing at the situation without the 29th Olympic Games. Further, the impact of the 29th Olympic Games on the number of Beijing inbound tourists is evaluated by comparing the number of Beijing inbound tourists between 'the situation of the 29th Olympic Games' and 'the situation without the 29th Olympic Games'. The combined ARMA model is analyzed through Eviews.

3. Data

According to the tourism statistics from Beijing Bureau of Statistics, since 1978, the numbers of inbound tourists in Beijing shows a gradually rising trend on the whole. The number of inbound tourists in Beijing decreased significantly in three special years: 1990(academic tide), 2003(SARS) and 2008(the 29th Olympic Games). This paper focuses on the impact of the 29th Olympic Games on the number of inbound tourists in Beijing. Based on the international experience, the impact of the Olympic Games on tourism in host city is generally appeared in three periods which are one year before the Olympic Games, the year holding the Olympics Games and one year after the Olympic Games. To observe the trend of the tourist arrivals curve in Beijing (Figure 1), it can be found that the number of inbound tourists in Beijing remained flat from 1978 to 2007. In 2007(the year before the Olympics), the number of inbound tourists in Beijing increased dramatically by 11.6 percent over 2006. That means the 29th Olympic Games exerted a comparatively obvious impact on Beijing inbound tourism. Therefore, the paper takes 2007 as the boundary point, and set 2007-2012 as the impact period of Olympics, taking the four-year post-Olympic cycle into consideration. The paper analyzes the impact of the 29th Olympic Games on Beijing inbound tourism in the pre-Olympic period, Olympic year and post-Olympic period.



Source: Beijing Statistical Yearbook, Beijing Tourism Development Commission Annual Report

Figure 1: The number of inbound tourists in Beijing (1978-2012)

Since Beijing's annual travel statistics are only available since 1978, there are only 29 annual data from 1978 to 2006. Therefore, the paper selects monthly statistics which can be obtained from April 2001 to expand the data size, and build a combined ARMA model with monthly data from April 2001 to December 2006 to predict the number of inbound tourists in Beijing from 2007 to 2012 without Olympic influence. And then, the difference between the forecast value and the actual value from 2007 to 2012 can be calculated to roughly evaluate the impact of the 29th Olympic Games on inbound tourism in Beijing.

4. Construction of Combined ARMA Model

4.1. The Deterministic Model f (t).

To observe the monthly curve of the number of inbound tourists in Beijing (Figure 2), the curve shows a wavelike upward trend. That is, the number of inbound tourists in Beijing has an increasing trend and seasonal fluctuation. A general time series model is given by $y_t=f(t)+u_t$. and the deterministic part f(t) is fitted to grasp the growth trend and seasonal fluctuations.

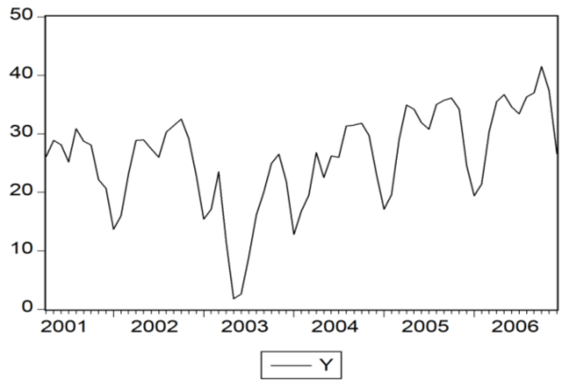


Figure 2: The number of inbound tourists in Beijing (April 2001-December 2006)

The deterministic model is presented as follows:

$$f(t)=c+at+\sum_{i=2}^{12} b_i D_i \quad (i=2,3,4,\ldots\ldots 12) \tag{3}$$

Where t is the time variable, t=0 when it is April 2001, t=1 when it is May 2001, and so on. c is the constant term, and a is the coefficient of t. D_i is the dummy variable for month, i is the natural number from 2 to 12,and b is the coefficient of D_i. Based on the least squares method, the preliminary results show that the coefficient of D_2 is not significant (p=0.5735). Thus, D_2 is deleted, the model parameters are estimated again as follows (Table 1):

Table 1: Deterministic model parameters estimation

Variable	Coefficient	Std. Error	T-Statistic	Prob.
c	11.49624	2.447916	4.696338	0.0000
t	0.162053	0.039593	4.092920	0.0001
D_3	7.919921	3.564065	2.222160	0.0303
D_4	10.93718	3.362623	3.252575	0.0019
D_5	8.980131	3.361224	2.671685	0.0098
D_6	8.453079	3.360291	2.515579	0.0147
D_7	8.182693	3.359824	2.435453	0.0180
D_8	12.98397	3.359824	3.864480	0.0003
D_9	13.56859	3.360291	4.037920	0.0002
D_{10}	15.14820	3.361224	4.506752	0.0000
D_{11}	12.36948	3.362623	3.678522	0.0005
D_{12}	5.589097	3.364487	1.661203	0.1022

4.2. Building ARMA Model of Residual Sequence ut with Box-Jenkins Methodology.

ARMA model requires that the sequence must be stationary, so u_t must be tested for the stability. The results of ADF unit root test on u_t are shown in Figure 3. The value of t-statistic is -2.962746 (p=0.0036), which is lower than the critical values at 1%, 5% and 10% significance levels. Therefore, the null hypothesis of a unit root is rejected. That is, u_t can be seen to be stationary for building ARMA model.

Augmented Dickey-Fuller Unit Root Test on UT

Null Hypothesis: UT has a unit root
Exogenous: None
Lag Length: 1 (Automatic based on SIC, MAXLAG=10)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.962746	0.0036
Test critical values:	1% level	-2.599934	
	5% level	-1.945745	
	10% level	-1.613633	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(UT)
Method: Least Squares
Date: 05/03/13 Time: 22:18
Sample (adjusted): 2001M06 2006M12
Included observations: 67 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
UT(-1)	-0.184521	0.062281	-2.962746	0.0043
D(UT(-1))	0.249885	0.118749	2.104301	0.0392

R-squared	0.139370	Mean dependent var	-0.145022
Adjusted R-squared	0.126129	S.D. dependent var	3.149939
S.E. of regression	2.944596	Akaike info criterion	5.027217
Sum squared resid	563.5921	Schwarz criterion	5.093028
Log likelihood	-166.4118	Durbin-Watson stat	2.055746

Figure 3: ADF unit root test on u_t

Observe autocorrelation and partial autocorrelation plots of u_t, and identify the order of ARMA model and select the optimal model. The selection criteria of the optimal model is as follows: first, the decision coefficient of the model is as large as possible. The greater the coefficient is, the greater the goodness of fit of the model is. Second, the value of AIC, SC of the model is as small as possible, and the items of AR or MA are sufficient to characterize the relevant features. Third, the model parameters estimation is significant. Fourth, the inverted roots of lag polynomial lie in the unit circle, and meet the stationarity - invertibility requirement. Fifth, residuals are white noise, and residual sequence is not correlated. Based on the above criteria, ARMA (1, 2) is the best model, and the estimation results are shown in Figure 4. Coefficients of AR (1), MA (1), MA (2) are statistically significant at 1% significance level. The values of AIC and SC are 5.004670 and 5.102589 respectively. Inverted AR roots and inverted MA roots lie in the unit circle, and meet the stationarity - invertibility requirement. Further, Q statistics test on residuals of ARMA (1, 2) model shows that the model residuals are a sequence of white noise. ARMA (1, 2) extracts complete information from u_t.

Dependent Variable: UT
Method: Least Squares
Date: 05/03/13 Time: 22:19
Sample (adjusted): 2001M05 2006M12
Included observations: 68 after adjustments
Convergence achieved after 9 iterations
Backcast: 2001M03 2001M04

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AR(1)	0.556710	0.128329	4.338140	0.0001
MA(1)	0.596702	0.123566	4.829014	0.0000
MA(2)	0.485639	0.113023	4.296803	0.0001

R-squared	0.773449	Mean dependent var	-0.054067
Adjusted R-squared	0.766478	S.D. dependent var	5.983934
S.E. of regression	2.891684	Akaike info criterion	5.004670
Sum squared resid	543.5193	Schwarz criterion	5.102589
Log likelihood	-167.1588	Durbin-Watson stat	2.078893
Inverted AR Roots	.56		
Inverted MA Roots	-.30+.63i	-.30-.63i	

Figure 4: Results of ARMA (1, 2) model

4.3. Build a Combined ARMA Model.

Based on the above results, the deterministic model and the ARMA model can be combined, and the parameters of the combined model are estimated by the least squares method. Estimates of the combined ARMA model are shown in Figure 5. All parameter coefficients of the model are significant at 1% or 5% significant level. The value of DW is around 2, there is no first-order autocorrelation in residuals, and the values of AIC and SC are small. The value of coefficient of determination is 0.893179, and the value of adjusted coefficient is 0.864962. The overall model has strong significance (P=0.0000), so the fit of the model is excellent. A combined ARMA model is formulated as follows:

$$y_t=10.07913+0.170446t+\sum_{i=3}^{12} b_i D_i +0.547146y_{t-1}+\varepsilon_t+0.715582\varepsilon_{t-1}+0.560253\varepsilon_{t-2} \quad (4)$$

The values of b_3, ..., b_{12} are shown in Figure 5.

Dependent Variable: Y
Method: Least Squares
Date: 04/22/13 Time: 20:35
Sample (adjusted): 2001M05 2006M12
Included observations: 68 after adjustments
Convergence achieved after 10 iterations
Backcast: 2001M03 2001M04

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	10.07913	4.490614	2.244488	0.0290
T	0.170446	0.094889	1.796265	0.0782
D3	6.466075	1.560440	4.143750	0.0001
D4	9.201500	2.669888	3.446399	0.0011
D5	7.476648	3.435211	2.176474	0.0340
D6	7.657695	3.683824	2.078735	0.0425
D7	8.367425	3.728308	2.244296	0.0290
D8	13.79073	3.689113	3.738224	0.0005
D9	14.87557	3.553395	4.186297	0.0001
D10	17.02424	3.255242	5.229791	0.0000
D11	15.09985	2.534620	5.957441	0.0000
D12	8.384036	1.550879	5.405989	0.0000
AR(1)	0.547146	0.139347	3.926494	0.0003
MA(1)	0.715582	0.126124	5.673628	0.0000
MA(2)	0.560253	0.115545	4.848794	0.0000

R-squared	0.893179	Mean dependent var	25.94382
Adjusted R-squared	0.864962	S.D. dependent var	8.275276
S.E. of regression	3.040959	Akaike info criterion	5.254183
Sum squared resid	490.1138	Schwarz criterion	5.743781
Log likelihood	-163.6422	F-statistic	31.65405
Durbin-Watson stat	2.077393	Prob(F-statistic)	0.000000
Inverted AR Roots	.55		
Inverted MA Roots	-.36+.66i	-.36-.66i	

Figure 5: Estimates of combined ARMA (1, 2) model

5. Forecast by Combined ARMA Model

5.1. Evaluation of Forecast Accuracy

For evaluating the forecast accuracy of combined ARMA (1, 2), select dynamic forecasting method to forecast the number of inbound tourists in Beijing from April 2001 to December 2006(see Figure 6). The MAPE (Mean Absolute Percent Error) is a common indicator to evaluate the forecast ability of a model. If the MAPE value is less than or equal to 10%, the forecast can be considered highly accurate. The MAPE value between 10% and 20% indicates good forecasting. The MAPE value of combined ARM A (1, 2) model is 12.24523, which means the forecasting of the model shows good accuracy. Their inequality coefficient is 0.042097 and the covariance proportion is 0.998659, which indicate that the model has a high goodness-of-fit and the predicted value is close to the true value. As a result, the combination ARMA (1, 2) model can be considered to have good forecasting ability, can be used to forecast the number of inbound tourists in Beijing.

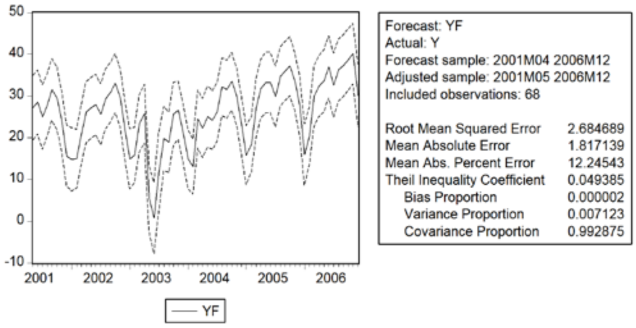


Figure 6: Evaluation of forecast accuracy of combined ARMA (1, 2) model

5.2. Model Forecast

Combined ARMA (1, 2) model is used to forecast the number of inbound tourists from 2007 to 2012 in Beijing. In Figure 7, the curve with squares represents actual values, which are real tourism data under Olympic influence. The curve with triangles represents model predicted values, which are estimates of inbound tourists numbers assumed in the absence of Olympic Games. By observing the difference between the actual values and the predicted values, the impact of the 29th Olympic Games on the inbound tourism in Beijing can be evaluated (see Figure 8).

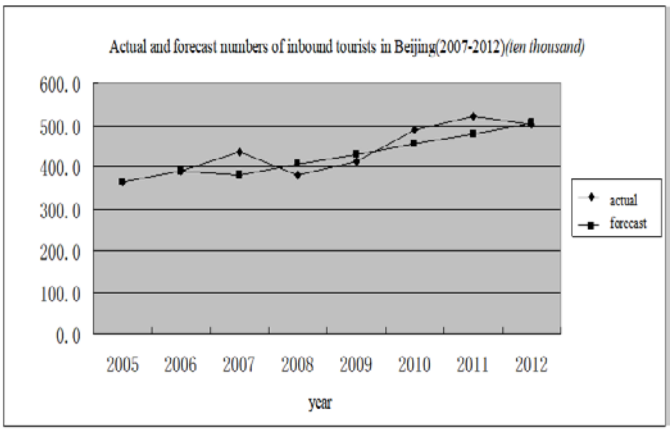


Figure 7: Actual and forecast numbers of inbound tourists in Beijing

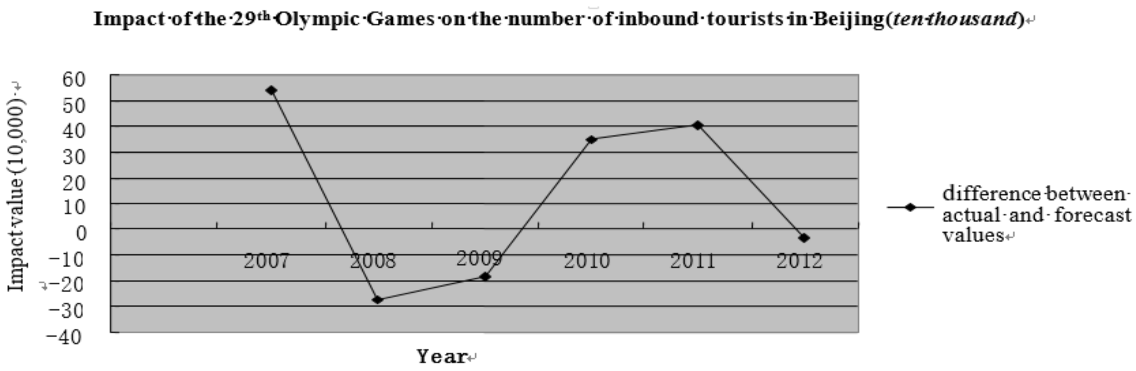


Figure 8: Impact of the 29th Olympic Games on the number of inbound tourists in Beijing

6. Analysis and Discussion

6.1. The 29th Olympic Games Promoted Beijing Inbound Tourism in General

Through the bid, preparation and holding of the Olympic Games, the city traffic, ecological environment and air quality have been obviously improved, and the tourism environment of Beijing has been comprehensively improved. Beijing tourism accommodation reception capacity has been further enlarged, and the construction of urban tourism information and communication network has been greatly developed. During the preparation period of the Olympic Games, the Beijing tourism system carried out the largest and longest-lasting training work in history, and the service level of the tourism industry was greatly improved. The tourism reception work during the Beijing Olympic Games achieved the goal of satisfaction. The major scenic spots in Beijing carried out large-scale repair and maintenance, strengthened the construction of barrier-free facilities, and made the tourism environment more standardized, humanized and international. The 29th Olympic Games has promoted the image of Beijing as a tourist city in an all-round way, and the comprehensive multi-functional tourist area of Olympic sports culture represented by ‘Bird's Nest’, ‘Water Cube’ and the Olympic Park has gradually formed. In 2011, the number of over-night inbound tourists exceeded 5 million for the first time, showing the great development of Beijing's international tourism.

6.2. Pre-Olympic Impact on Beijing Inbound Tourism Is Obvious (2007)

The successful bid for the 29th Olympic Games has greatly enhanced Beijing's international reputation and influence. Before the holding of the Games, Beijing municipal government had formulated a number of policies for Olympic tourism. For example, the Olympic Tourism Development Plan was released in June 2005, and the ‘Olympic-Tourism’ promotion plan was implemented in 2007, which boomed Beijing's inbound tourism ahead of the Olympics. If not consider the impact of the Olympics, the number of inbound tourists in Beijing was only 3.8167 million in 2007. Under the influence of the Olympics, the number of inbound tourists in Beijing reached 4.355 million in 2007, which had an increase of 11.6 per cent over 2006. Comparing the actual number and the forecast number of inbound tourists in Beijing, an increase of 538,300 inbound tourists can be attributed to the 29th Olympic Games.

6.3. Crowding - Out Effect of Olympics on Beijing Inbound Tourism in the Olympic Year Is Obvious (2008)

In the Olympic year of 2008, the number of inbound tourists in Beijing dropped sharply to 3.79 million, nearly 20 percent less than in 2007. Excluding the impact of the Olympic Games, the number of inbound tourists in Beijing in 2008 was expected to be 4.06 million, so it can be roughly inferred that the holding of the 29th Olympic Games has a crowding-out effect on the inbound tourism in Beijing of 272,200. The crowding-out effect of the Olympic Games on Beijing's inbound tourism market is mainly due to two reasons. On the one hand, considering the safety of the Olympic Games, the Chinese government adopted more stringent visa approval procedures, which directly led to the reduction of inbound tourists in Beijing. On the other hand, considering the congestion and inconvenience caused by the Olympic Games and the rising prices during the Olympic Games, some foreign tourists reduced the travel of Beijing as a tourist destination.

6.4. The Post-Olympic Valley Effect of Inbound Tourism in Beijing Did Not Occur (2009-2012)

After the 29th Olympic Games, Beijing's reputation and recognition has been greatly enhanced, and the successful hosting of the Olympic Games has made Beijing one of the world famous cities. According to a survey, the 29th Olympic Games has a positive impact on tourists' cognition [6].When tourists choose Beijing as their destination, host city of the 29th Olympic Games is the biggest attraction to tourists. The inbound tourists curve in Beijing had been rising since 2008. The number of inbound tourists was growing at an average annual rate of 10%, twice as fast as the growing rate from 2001 to 2006. In 2010 and 2011, the actual number of inbound tourists in Beijing exceeded the predicted value in the absence of the Olympic Games. The 29th Olympic Games increased the number of inbound tourists in Beijing by 753,500. The data show that in the four years after the 29th Olympic Games, the Olympic Games still played a positive role in promoting inbound tourism in Beijing, so there was no so-called post-Olympic valley effect. Between 2009 and 2011, the number of inbound tourists in Beijing increased by 2.86 million compared with the number in 2008. The number of inbound tourists fell slightly in 2012, but it still stood at 5.99 million.

6.5. Further Policy Support Is Needed to Strengthen the Olympic Tourism Effect (2012-Present)

Aiming at the international tourism market, the Beijing municipal government issued ‘opinions on comprehensively promoting the development of Beijing's tourism industry’, which put forwards to fully implement the overseas tourism marketing plan of ‘walking into Beijing and remembering the Olympic Games’, consolidate the Olympic brand effect, and form the Olympic tourism industry system. From the current situation, since 2013, the number of inbound tourists in Beijing dropped to 5 million, showing the overall trend of continuous decline. As time went on, the influence of Beijing as an Olympic city in the international tourism market gradually faded, and the number of inbound tourists in Beijing in 2018 was only 4.04 million. The hosting of the 2022 Beijing Winter Olympics is another opportunity for the development of Beijing's international tourism, but due to the influence of the coronavirus epidemics, the impact of the Winter Olympics on Beijing's inbound tourism becomes uncertain. The government needs to further develop the supporting policy for Beijing tourism and the tourism plan of Beijing characteristics for the international market, while improving public health and safety. Beijing will become the first city in the world to have hosted both summer and winter Olympic and Paralympic Games. As one of the important symbols of Beijing, being an Olympic city of both summer and winter Olympics should exert a longer-term positive impact on promoting Beijing's international tourism market.

7. Conclusion and Future Research

Based on the combined ARMA model, the paper analyzes the impact of the 29th Olympic Games on the inbound tourism of Beijing from a relatively complete Olympic cycle (2007-2012). The results show that the 29th Olympic Games promote the development of inbound tourism in Beijing on the whole. The pre-Olympic promotion effect on Beijing inbound tourism was prominent. The crowding-out effect on Beijing inbound tourism market was obvious. However, the post-Olympic valley effect on Beijing inbound tourism did not appeared. The long-term positive effect of Olympics on tourism needs further policy support in anticipation of the 2022 Winter Olympics. In the future, on the impact analysis of Olympics on tourism, several factors can be introduced to construct the perfect multi-variable and complex econometric model, and deeply explore the influence mechanism of sports events on tourism in host cities. Further, the related research topics of sports events and tourism can be expanded, such as the differential analysis on the impact of events on domestic and foreign tourism, the impact analysis of events on different tourist markets, the comparison of tourism effects of the same event in different host cities, and so on.

References

[1] Qiu, X. H., Luo, Y. F., Dang, F. Y. (2003) "Analysis on the Influence of Hosting Olympic Games on Tourism", Sports Culture Guide, no.7, pp. 26-28.

[2] Bian, X. H. (2005) "Economic Impact Assessment of the 2008 Beijing Olympic Games", East China Economic Management, vol. 19, no. 3, pp.86-90.

[3] Andersson, T. D., Armbrecht, J., Lundberg, E. (2008) "Impact of Mega-events on the Economy", Asian Business &Management, vol. 7, no. 2, pp. 163-179.

[4] Baade, R. A., Matheson, V. (2002) "Bidding for the Olympics: fool's gold?" in Transatlantic Sport: The Comparative Economics of North American and European Sports, C.P. Barros, M. Ibrahimo, and S. Szymanski, Eds. Edward Elgar Publishing, Massachusetts, pp. 127-151.

[5] Kesenne, S. (2005) "Do We Need an Economic Impact Study or a Cost-benefit Analysis of a Sports Event", European Sport Management Quarterly, vol. 5, no. 2, pp. 133–142.

[6] Ma, C. L. (2009) "A simple survey on Olympic tourism", Tourism Tribune, vol. 24, no. 3, pp. 8-9.