

A STUDY ON IMPACT OF OLYMPIC GAMES HOSTED COUNTRIES ECONOMY- PRE AND POST ANALYSIS

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ABSTRACT:

In modern days most of the country's economy is moving down sides, to stimulate their economy in the short run global games like Olympics are very much useful. Most of the countries are eager to conduct the Olympic Games at their place to push their GDP at higher level. I had examined past 5 Olympic Games hosted countries economy in pre and post period by considering 4 years from the event day. MAR ratio has been applied to measure the performance of the equity markets and found that performance is going downside in post period of Olympic Games. Regression, weight estimate analysis proved that imports and exports are getting influenced by the weakness of currencies in past period of Olympics games event day. Linear trend model result unveils that most of the country's GDP were getting influence by the inflation more in post period when it is compared with pre period. This analysis is useful to the countries who already hosted and those who wanted to host big games and events such as Olympic Games. So that they can take proper measures to protect their economy after the event takes place.

KEYWORDS: Olympic Games, Exports and Imports, GDP, Inflation, Currency, Indices.

INTRODUCTION:

According to legend, the ancient Olympic Games were founded by Heracles (the Roman Hercules), a son of Zeus. Yet the first Olympic Games for which we still have written records were held in 776 BCE (though it is generally believed that the Games had been going on for many years already) When the first Olympic Games were hosted in Olympia, Greece in 776 BC, Perhaps few knew that they would go on to become one of the most widely Watched mega-events in the world. The Games quickly developed into a political Tool, Used by one city-state to assert dominance over another. Today, the Games continue to present more than the prowess of the world's top athletes; they have largely morphed into a display of the host country's economic capability to hosted international mega-event.

The summer Olympics, considered the biggest sports event in the world, is held every four years and attracts hundreds of millions of spectators. To the host country, it offers a number of benefits, including drumming the world's interest in its cultural wealth, providing job

opportunities for its people, attracting revenues from tourism, and opening friendly relations with the global community. This study focuses on an important Olympics function—that of enhancing the image of the host country. These are the 5 countries which I considered as

CITY	COUNTRY	YEAR	OPENING CEREMONY	CLOSING CEREMONY
LONDON	UK	2012	Jul-27	Aug-12
BEIJING	CHINA	2008	Aug-08	Aug-24
ATHENS	GREECE	2004	Aug-13	Aug-29
SYDNEY	AUSTRALIA	2000	Sep-15	Oct-01
ATLANTA	US	1996	Jul-19	Aug-04

REVIEW OF LITERATURE:

Mr. Nita Mehrotra studied the economic impact on Olympic games hosted countries by comparing with the economies of who bid to host but not awarded but my analysis is Olympics games hosted countries economy pre and post.

Mr. Jiajun yao has analyzed that Olympic hosted countries reputation , How it has changed before and after the games and found that the Olympics can indeed be harnessed as a tool with which to repair a host country's image in the world community But my analysis is on Olympic games hosted countries economy pre and post period.

According to **Stephen B. Billings and J. Scott Holladay** Regression results provide no long-term impacts of hosting an Olympics on two measures of population, real GDP per capita and trade openness. But my analysis is on pre and post study of Olympic Games hosted countries economy.

Andrew Zimbalist had examined the financing of the Olympic Games, explores how the awarding of the Games has become a high-stakes contest, and analyzes the costs of running the Games and their economic impact on the host city and nation but my study is all about Olympic games hosted countries economy pre and post.

Szymanski and Stefan: (a). mislead people into believing that their taxes are being productively spent on social regeneration rather than just funding mass entertainment, and (b) lead some private individuals to invest their own wealth in the expectation that an event will generate returns when it is unlikely to do so but my analysis is Olympic games hosted countries economy pre and post.

According to **Bahman Asgari and Reza Khorshidi** the countries with hosting request and home advantage not only will develop political, economic, cultural, environmental, tourism and psychological aspects, but it will have higher performance in terms of medals but my study is only about how the economy has been lost by the hosted countries.

Jeffrey J. Collett studied the effects of hosting the Olympic Games through GDP, employment, and tourism. To assess the economic impact, host nations will not only be analyzed in and of it, but will also be compared to runner-up nations in the bidding process. Though runner-up nations tend to economically benefit more often than the host nation per Olympiad, host nations are found to benefit intrinsically but my study is related to variables like GDP, Inflation, imports and exports, Currency, Indices of hosted countries.

THESIS examines the economic impact of the Summer Olympic Games on Germany and China .these countries hosted the 1972 Munich Summer Olympics and 2008 Beijing Summer Olympics respectively but my study is on CHINA, UK, US, AUSTRALIA, GREECE countries.

According to **D. Dick and Qingwei Wang** results, however, rely on a larger sample of 15 Olympic events and are obtained by assessing the abnormal returns after the announcement against a "business-as-usual" situation (instead of testing the difference between winner group and loser group). Our findings are in line with economic intuition, since the Summer Games represent a larger event and are thus more likely to have a significant impact. We also find that among the winners, small economies tend to have greater cumulative abnormal returns than their large peers.

NEED OF THE STUDY: Most of the research has been done on the Olympic games hosted countries economy in pre period only (before 4yrs of Olympic Games date). In the recent past big events which accommodate global infrastructure spending given negative impact on future economy china had imported 70% of Iron ore of the world before it conducts the Olympic Games. But after the Olympic Games event Chinese economy started moving downside by observing the various research papers. I found a gap where no research has done to measure the hosted countries economy of Olympic Games in pre and post comparisons. Hence I had considered 5 Olympic Games hosted countries to study economy transaction in pre and post period.

OBJECTIVES:

1. To find the correlation of select economic factors of Olympic Games hosted countries in pre and post period.

2. to measure the inflation impact on GDP and stock indices in pre and post period of Olympic Games.
3. To measure the equity indices performance in pre and post period.
4. to measure the imports impact on GDP in pre period of Olympic Games.
5. To know the currency fluctuation impact on exports in post period.

SCOPE: This study has been emphasized on last 5 Olympic Games hosted countries economy by considering 4 years in pre and post period Based on Olympic event. In this study 36 years data has been considered for the countries of UK, US, CHINA, AUSTRALIA, GREECE.

Empirical Study:

US: GDP, Inflation, Currency, Indices

UK: GDP, Inflation, Currency, Indices

CHINA: GDP, Inflation, Currency, Indices, Imports, Exports

GREECE: GDP, Inflation, Currency, Indices, Imports, Exports

AUSTRALIA: GDP, Inflation, Currency, Indices

RESEARCH METHODOLOGY:

MAR RATIO: The MAR Ratio is calculated by dividing the compound annual growth rate (CAGR) of a fund or strategy since inception by its biggest drawdown. The higher the ratio, the better the risk-adjusted returns. The MAR Ratio gets its name from the Managed Accounts Report newsletter, which developed this metric

Mar Ratio = Compounded Annual Rate of Return / Maximum Drawdown

REGRESSION: In linear regression, the model specification is that the dependent variable, y_i is a linear combination of the *parameters* (but need not be linear in the independent variables). For example, in simple linear regression for modeling n data points there is one independent variable: x_i , and two parameters, β_0 and β_1 :

$$\text{Straight line: } y_i = \beta_0 + \beta_1 x_i + \varepsilon_i, \quad i = 1, \dots, n.$$

In multiple linear regressions, there are several independent variables or functions of independent variables. Adding a term in x_i^2 to the preceding regression gives:

$$\text{Parabola: } y_i = \beta_0 + \beta_1 x_i + \beta_2 x_i^2 + \varepsilon_i, \quad i = 1, \dots, n.$$

WEIGHT ESTIMATION: The process continues until it converges. In weighting, observations with small residuals get a weight of 1 and the larger the residual, the smaller the weight. This is defined by the weight function. With bi square weighting, all cases with a non-zero residual get down-weighted at least a little.

$$w(e) = \begin{cases} 1 & \text{for } |e| \leq k \\ k^2 / |e|^2 & \text{for } |e| > k \end{cases}$$

LIMITATIONS:

1. Imports and exports of USA data have not been considered.
2. Data related to UK has been considered for 3 years.
3. Imports and exports of UK, Australia has not been considered.

DATA ANALYSIS:

1. To find the correlation of select economic factors of Olympic Games hosted countries in pre and post period.

CORRELATIONS

	CHINA	GREECE	US	UK	AUS
GDP VS INFLATION	0.192821	0.013122	0.063725	0.4418	1.137032
GDP VS CURRENCY	0.074885	0.279005		0.078805	0.810265
GDP VS EQINDEX	0.026912	0.172872	0.012482	1.221485	0.005202
INFLATION VS CURRENCY	0.034848	0.5618		1.294441	0.123505
INFLATION VS EQINDEX	0.021218	0.0032	0.054781	0.765085	0.195938
CURRENCY VS EQINDEX	0.446513	0.053138		0.282001	0.971618
GDP VS IMPORTS	0.057122	0.078408			
GDP VS EXPORTS	0.099458	0.225121			
INFLATION VS IMPORTS	0.010805	0.646385			
INFLATION VS EXPORTS	0.041472	0.169945			
CURRENCY VS IMORTS	0.000481	0.000613			
CURRENCY VS EXPORTS	3.2E-05	0.231881			
EQINDEX VS IMPORTS	0.376712	0.339488			
EQINDEX VS EXPORTS	0.5	0.009385			
IMPORTS VS EPORTS	4.5E-06	0.282752			

Interpretation: The above analysis of variance has been applied on co-relation values of select economic factors between pre and post analysis, this study reveals that there is a significant difference of mean between the pre and post analysis and observed that Chinese exports and imports are having high variations, Greece exports, UK equity and currencies variations got

increased. Australia inflation variation with GDP also observed at higher level. USA variations are not found to be significant.

2. To measure the inflation impact on GDP and stock indices in pre and post period of Olympic Games.

PRE

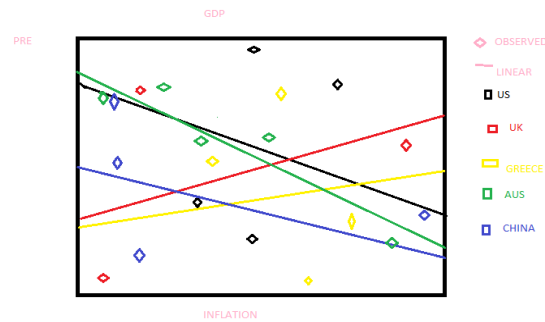
Model Summary and Parameter Estimates

DEPENDENT VARIABLE:GDP

Equation	Model Summary					Parameter Estimates		
	R Square	F	df1	df2	Sig.	Constant	b1	
USAGDP	Linear	0.179	0.655	1	3	0.477	13.662	-3.638
ukgdp	Linear	0.14	0.163	1	1	0.756	-0.254	0.146
greece	Linear	0.042	0.131	1	3	0.741	0.064	0.307
aus gdp	Linear	0.709	7.315	1	3	0.073	1.301	-0.175
chinagdp	Linear	0.171	0.62	1	3	0.489	11.13	-0.154

INDEPENDENTVARIABLE:INFLATION

Interpretation: PRE: The above table depicts that inflation in pre-period of Olympic Games impact on countries growth has been measured by adopting linear trend model of regression. UK and Greece GDP's values were non-significant and rest of the country's GDP's got influenced with inflation during the same period.



The above graph shows that all the countries GDP's values got influenced before hosting the Olympic games except UK and Greece because trend lines are moving left to right at higher directions and observed values are also fallen more below the trend line.

POST

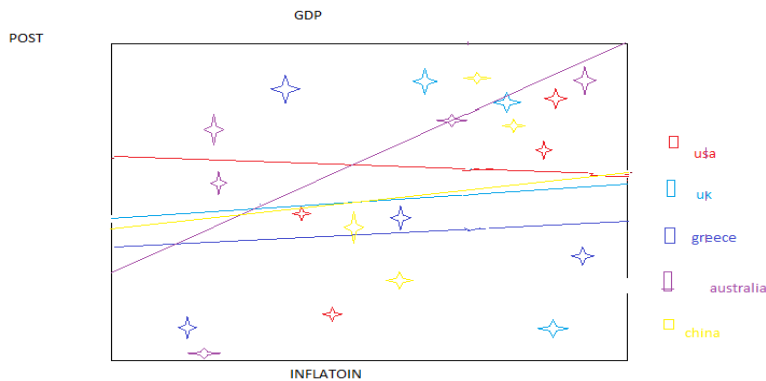
Model Summary and Parameter Estimates

DEPENDENT VARIABLE:GDP

Equation	Model Summary					Parameter Estimates		
	R Square	F	df1	df2	Sig.	Constant	b1	
usagdp	Linear	0.004	0.013	1	3	0.916	4.461	-0.08
ukgdp	Linear	0.042	0.13	1	3	0.742	0.099	0.065
greece	Linear	0.002	0.005	1	3	0.946	0.331	0.043
aus gdp	Linear	0.444	2.394	1	3	0.22	0.016	0.2
chinagdp	Linear	0.043	0.134	1	3	0.739	8.247	0.13

INDEPENDENT VARIABLE:INFLATION

Interpretation: POST: The above analysis of linear trend indicates that all the countries GDP figures got influenced by the inflation expect Australia because probability value is significant.



The above graph indicates that Australia linear trend is moving straight upside from left to right directions that as rest of GDP linear trend lines are moving flat. This indicates that all the countries GDP values were not influenced by the inflation in post hosting period of Olympic Games.

3. To measure the equity indices performance in pre and post period.

	PRE	POST
AUS	1.20322654	0.14203675
GREECE	-0.1839298	0.16802556
UK	0.32580804	0.86353267
US	0.92398748	0.78768069
CHINA	0.21386641	0.08664908

Interpretation: The above analysis of performance has been measured on stock indices of Olympic Games hosted countries in pre and post period and it has been Observed that except Greece and UK stock indices performances slightly improved in post period when it is compared with pre period.

4. to measure the imports impact on GDP in pre period of Olympic Games.

MODEL SUMMARY	GREECE	CHINA
Multiple R	0.998	0.94
R Square	0.995	0.884
Adjusted R Square	0.99	0.767
Std. Error of the Estimate	0.007	0.018
Log-likelihood Function Value	17.949	24.089

		Sum of Squares	df	Mean Square	F	Sig.
GREECE	Regression	0.019	2	0.009	203.695	0.005
CHINA	Regression	0.005	2	0.002	7.586	0.116

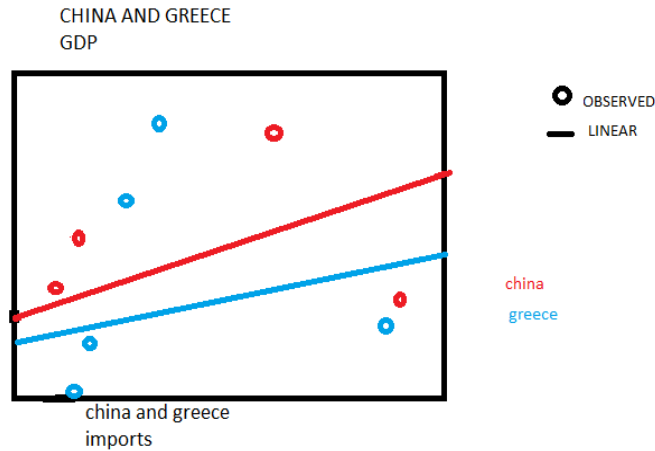
	unstandardized coefficients		standardized coefficients		t	Sig.
	B	Std. Error	Beta	Std. Error		
greeceimports	0.002	0	1.326	0.076	17.541	0.003
greeceexports	-0.005	0.001	-0.509	0.076	-6.741	0.021
chinaimports	0.00004364	0	1.266	1.452	0.872	0.475
chinaexports	-0.00001806	0	-0.332	1.452	-0.229	0.84

Interpretation: The above regression, weight estimation analysis has been applied on imports and exports of Greece and china by currency fluctuations. The R square for both the countries are observed stronger and probability value is found to be significant for both Greece and Chinese. Exports and imports coefficients values were also found to be significant except Chinese exports during the study period.

5. To know the currency fluctuation impact on exports in post period.

	Equation	Model Summary					Parameter Estimates	
		R Square	F	df1	df2	Sig.	Constant	b1
GREECE	Linear	0.11	0.371	1	3	0.586	0.429	0.006
CHINA	Linear	0.025	0.077	1	3	0.8	10.3	0.001

Interpretation: The above analysis depicts that imports in pre period of Olympic Games has no impact on GDP of china and Greece. The probability value is non-significant in both countries during the study period.



Interpretation: The above graph of linear trend of regression model indicates that both the countries linear trend line is moving upside from left to right direction. This graph shows that GDP's were not affected by the imports.

FINDINGS:

1. US economy has not observed any changes during its pre and post period Olympic Games period but Greece, china, UK and Australia economy had observed lot of changes in pre and post hosting period.
2. Australia GDP got influenced by inflation in posting period but in pre hosting period UK and GREECE GDP's were observed to be non-significant with inflation.
3. Stock indices of Olympic Games hosted countries are moving downside in the post Olympic games period when they compared with pre period.
4. Chinese exports were not affected by the currency fluctuations after the Olympic Games period.
5. In pre hosting period Greece and Chinese GDP figures were not influenced by the imports.

CONCLUSION: I conclude the analysis of Olympic Games impact on hosting countries economy in pre and post. In this study I had considered past 5 Olympic Games hosted countries along with selected economic variables. This study had proved that most of the country's economy got detrained in the post period of Olympic Games. All the countries economy observed rational changes in pre period GDP and currencies got strengthen but in the post analysis result unveils that most of countries imports, currencies, and their GDP influenced negatively. Hence further study is recommended on Olympic Games hosted countries economy by considering employment, Infrastructure, and various other factors. Including the countries that are dependent on hosting countries. So that how economy transforming into various directions

and causing negatively in the longer run to the hosting countries along with the dependent countries.

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