

THE ECONOMIC IMPACT OF MEGA SPORTS EVENTS

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Abstract: *The ability to leverage cost or benefits and establish a sustainable legacy from hosting the Olympics games as the mega-event continues to be of significant interest from policy makers. Relatively few studies have focused on impacts and future legacy by the cities (or regions/states). The crucial problem is to find correct data because in the past; there is only very little evidence about Olympics impact studies. The paper is focused on four Olympics games in Sydney 2000, Athens in 2004, Beijing in 2008, London in 2012, and the aim is to focus on GDP, games cost, and sports-related cost. The number of athletes and sports-related cost is more or less constant, but the game cost depends on the size of infrastructure, which is not related to the Olympics.*

Keywords: *Olympics games, impact, GDP, games cost, sport-related cost*

JEL Classification: Z 20, Z 28

1 Introduction

During the Olympics, the world looks not only for world records in sports disciplines, but also in the economic indicators. A country that has to bear the cost of the Olympics is de facto bound by the contract to host games. Each initial budget is modified several times. The Olympics are mostly financed from public funds. The question we need to ask: Are the Olympics creating benefits for the taxpayers? How will ordinary worker from the host city benefit from the mega-event when the price is several billion dollars? Or, how will be an ordinary worker from another part of state benefit from the mega-event?

In this study, I focus on the comparison of the economic impacts of the four Olympic Games. I choose a sample of four most recent Olympics. My sample includes, XXVII Olympiad Games to the XXX Olympiad. Firstly, I would like to say that every single Olympics is unique. They are not only unique because of number of venues, but they are especially unique approach

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to their arrangement. Every city, every OCOG (Organising Committees for the Olympic Games) must work under different conditions. One thing they have in common is that every Olympics must meet the minimum conditions of the IOC (International Olympic Committee). It is at least interesting that technical standards manual (Competition Venues, 2005) would not be available to the public:

“The material and the information contained herein are provided by the IOC to be used for the sole purpose of preparing, organizing and staging an edition of the Olympic Games. This material and information is the property of the IOC and may not be disclosed to third parties or the general public, whether in whole or in part, without the prior written approval of the IOC. Sharing of such material and information is only permitted, under the condition of strict confidentiality, with third parties assisting in the preparation, organization and staging of an edition of the Olympic Games.”

The Olympics are overwhelmingly financed from public funds. The people can therefore question whether the public has a right to know how taxpayers' money is being spent. As in the following sections, I will note some Olympics cost more than 5% GDP of the country in the Olympic year. Costs climbed to an average of more than 20bn 2015 US\$ for organizing this mega-event. This huge sum of the money should be used to support young families and young people to start their own business and thus create new jobs for the young people (Klimko & Rievajová, [12]).

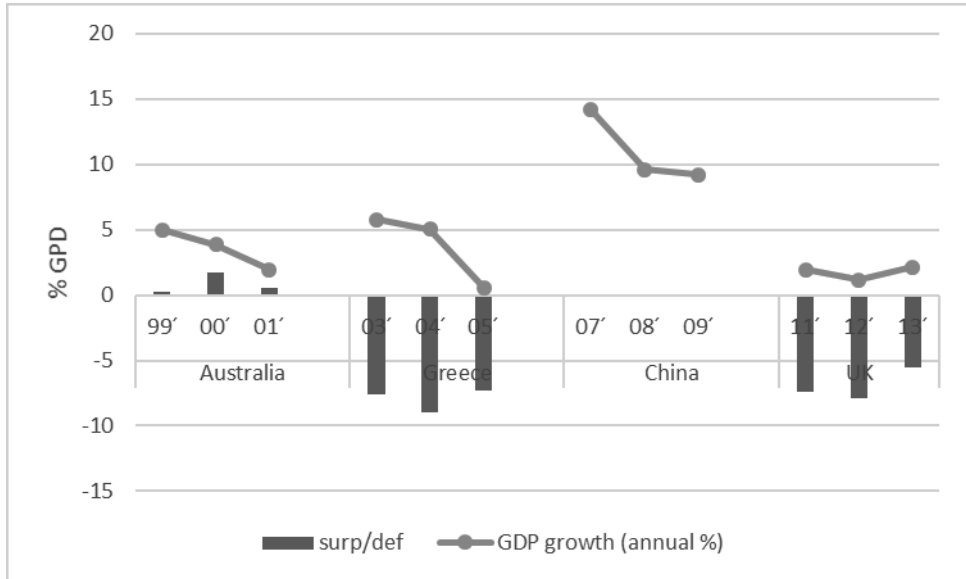
2 GDP and Olympics

The Olympic Games is a mega event. Mega events are one-time events that can attract a huge mass of spectators, have a global reach, are expensive (at a significant cost), have an impact on the host city and its inhabitants (Muller, [14]). The Olympic Games is a huge burden on the state budget. Whereas the average price for the Olympic Games between 2000 and 2012 was around US\$20.8 bn, for the smaller countries, this project is simply too expensive (If we remove cost for the Games in Beijing (US\$48 bn in 2015) the average is about US\$11.5 bn in 2015). For Greece, whose GDP was about US\$240.51 bn in current prices in the year 2004, the Olympics means an enormous burden. According to the Minister of Finance, the cost of the 2004 Athens games was EUR 8.5 bn (In, [8], in press). In the year 2015 a study of the Athens Olympics was issued by the Foundation for Economic & Industrial Research. It is a study on the economic impact of the Olympic Games in Athens. This highly detailed study refers to Games cost at the amount of EUR 9,223 bn, which is not the final sum. One should also take into consideration the tax revenues, the social security contributions and other public revenues from the staging of the Olympic Games and from the additional economic

activity during the preparation period (Foundation for Economic & Industrial Research, [6])

Figure 1

Cash surplus/deficit (% of GDP)



Source: [20], [21].

Note: Data are unavailable for China cash surplus/deficit.

Figure 1 shows us the cash surplus / deficit and GDP annual growth rate (%). Between years 1999 and 2000, Australia recorded positive balance budget surpluses. The surplus is at 1.44%. In 2001 compared to 1999, the surplus improved by 0.28% compared to 2000 and decreased to 1.16% but still remained positive at 0.53%. In Greece, the opposite phenomenon occurs. Overall budget balance in the Olympic year increased by 1.36%. In 2005 compared with 2003, it improved by 0.28% and compared to 2004 to 1.64%. In 2005, however, surplus / deficit was negative at -7.28%. In the year 2011, the United Kingdom was in a very similar situation as Greece. It reached a value of -7.42%; in comparison with the Olympic year it was lower by -0.45%. A year after the Olympics, it decreased compared to the Olympics of 2.39%, as it decreased by 1.94% compared to 2011, but it still remained in the negative value at -5.48%. If we look at the GDP growth in all organizing countries, we can see a decline in the GDP growth in the year they hosted the Olympics. The average is a 1.8% decline in GDP growth. However, it must be added that China recorded a decline in growth in the crisis year of 2008 to 4.5% (from 14.9% to 9.62%). China, if we exclude other countries from this average, fell by an average of 0.88%. An interesting fact is also that only the

United Kingdom recorded GDP growth in the post-Olympic year, namely by 0.98% compared to the Olympic year.

A possible explanation why each of the above mentioned countries recorded a decline in the GDP growth is the fact that the countries invested funds from other areas where they were missing in the next period. In this case, we can mention in particular about Greece, which enabled the country to organize the conditions for too showy Olympic Games.

2.1 Games costs and Sports-related cost

To organize the Olympics, IOC chose a model consisting of three stages of the budget. The first stage of this budget is the OCOG budget. The second step is the budget category of NON-OCOG. The third category is indirect capital costs. These are all costs for the infrastructure related to the arrangement, but which are not directly connected to the Olympic games (IOC, [7]).

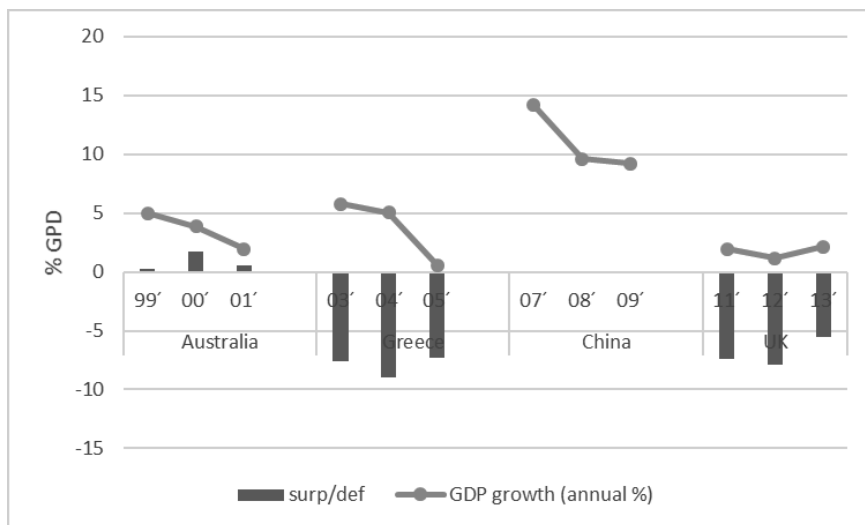
OCOG budget consists of all costs associated with organizing various OG events. There are costs for sports events, the Olympic Village operation, the operation of the MPC and IBC program of games, technology, Caterers, security, health services, advertising and promotions, and test events before the Olympics.

Non-OCOG budget direct costs constitute the very building of the infrastructure. This includes stadiums, construction of the Olympic village, the construction of the MPC (Media-press center), and IBC (International Broadcasting center).

The third category is indirect capital costs related to the construction of supporting infrastructure, for instance, the construction of roads, new railway lines and bus stops, train stations, trams, and airport. There is also the building of engineering networks. This category includes the costs of organizing games in terms of state agencies, which are in particular the security forces (police, firefighters, medical service, secret service, or army).

Figure 2 shows us the difference between the cost price for the Olympics and sports-related cost. The difference between the cost of OH and sports-related cost in the year 2000 in Sydney is at USD2.95 bn, Athens USD5.04 bn, 42.27 in Beijing, and London 9.71. In the case of the Beijing Olympics, it is necessary to mention a huge investment in environmental policy. Huge investments in environmental improvements were one of conditions of the IOC when Peking was awarded the Games. From the original investment of Yuan45bn (US\$ 5.696bn), investment was increased by government representatives to Yuan57bn (US\$ 7.215bn) (Jinxia & Mangan, [10]).

Figure 2

Estimated Olympic games cost and sports-related cost

Source: [19, 1, 2, 13, 5, 6, 3, 16]; author's calculations.

Note: All costs have been converted to US\$2015.

Table 1

Comparison of Estimated games cost to % of GDP and Sport-related cost to % of GDP

	<i>GDP (current US\$)</i>	<i>Estimated Games cost</i>	<i>% of GDP</i>	<i>Sports-related cost</i>	<i>% of GDP</i>
<i>Sydney</i>	414,95	4,73	1.14	1,78	0.43
<i>Athens</i>	240,52	12,83	5.33	6,79	2.82
<i>Beijing</i>	4558,43	48,71	1.07	6,44	0.14
<i>London</i>	2630,47	17,17	0.65	7,46	0.28
<i>Average</i>	1961,09	20,86	2.05	5,62	0.92

Source: [20, 21, 19, 1, 2, 13, 5, 6, 3, 16]; author's calculations.

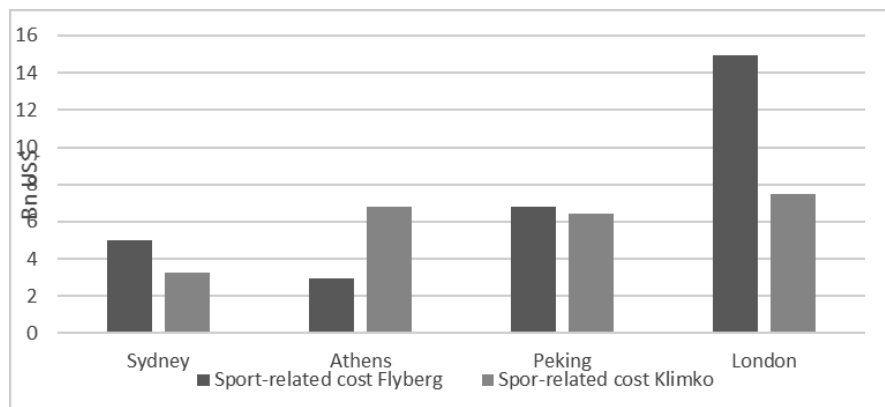
Notes: GDP, Estimated games cost and Sports-related cost are in current US\$.

If we look at the table, games of the XXVIII Olympiad meant a huge burden for the Greek economy. Given massive stadiums, new airport, new metro line, and infrastructure (ATHOC, [1]), this project was one of the most expensive in the long history of the Olympic Games in the overall price ratio to GDP. The cheapest game in the overall price ratio to GDP are the games in London with a ratio of 0.65% of GDP, followed by the Games in Beijing with 1.07% of GDP, and only just behind them are the games in London with 1.14% of GDP. At the ratio of funds spent by OCOG and non-OCOG, the

Games in Greece are again the most expensive games. It was followed by the Games in Sydney with 0.43% of GDP, the Games in London with 0.28% of GDP, and finally the Games in Beijing, with 0.14% of GDP.

Figure 3

Sports-related cost



Source: [5, 19, 1, 2, 13, 15, 6, 3, 16]; author's calculations.

Note: All costs have been converted to 2015 US\$.

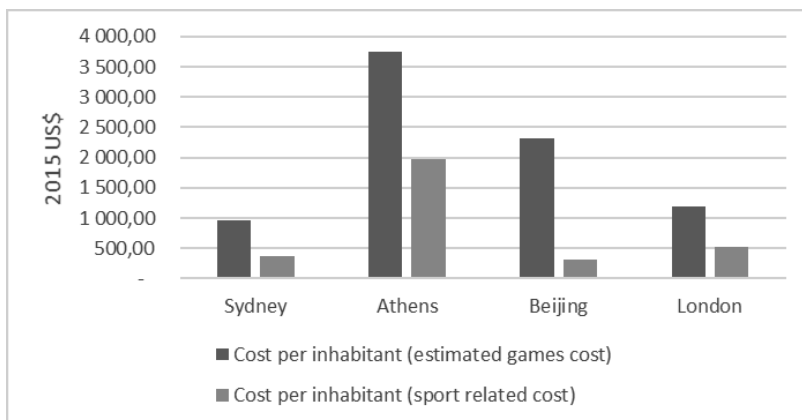
There are not many studies on the problems related to the staging of Olympics Games. We focused on the comparison of a group of authors which is quite often quoted (Flyvbjerg et al, [5]) in terms of showing the sports-related cost spending. It is very interesting that our conclusions differ significantly. It can be seen from Figure 3 that the approximate results were recorded only at the Beijing Olympics. In the case of Sydney, the authors point to the amount of US\$5,026 bn in 2015. According the Audit Office of Australia, price stadiums amounted to AU\$1.24 bn from public funds, and the amount of AU\$0.96 bn from private sources. The actual expenditures were reported by SOCOG at 2.37 bn AU\$. All these amounts are in constant prices in the year 2000. In the paper authors point to the fact that sports-related cost is the sum of OCOG + NON-OCOG expenditures (Flyvbjerg et al, [5], p.7). They arrived at a similar conclusion about the Olympics in Athens. The authors point to the sum of US\$2.9 bn in 2015. The sum for sports-related cost is only at the level of €2.9 bn, just because of ATHOC official reports indicate that the OCOG expenditures were at around €2 bn in 2004, which is approximately US\$2.4 bn in 2015. This would imply that the construction of stadiums, the Olympic village, MPC and IBC cost “only” US\$0.5 bn, which is not even close to be real. In terms of games in London, we concluded that there had to be a mistake made by authors, since the amount of sports-related

cost are interpreted in other sources as the cost for the whole Olympic games (Rogers – Blight [19], G.; Kavetsos, [11]; Jennings, [9]; DCMS [4]).

Host cities differ in terms of size and degree of infrastructure. The range of new construction will greatly affect the level of development of the city, or places in the city where the Olympic Park grew up (Muller, [15]; Preuss [18]). Comparing the expenditures per capita in each host city, we can make a picture of how much a citizen of the city would theoretically have to pay if they want to host the Olympics. Host city citizens are not paying the whole bill for the Olympics, but certainly the greatest burden is borne by the state; therefore all taxpayers of the country have to pay this bill. When smaller cities (population under 2 millions) are considering the candidacy, they should realize how much the Olympics actually cost. Whereas the average price for other four Olympics games was US\$20.8 bn in 2015, smaller cities (or states) should not even apply for hosting this mega event. The biggest burden for the host city were the Athens games. The total cost divided by the number of citizen is US\$3700 per citizen, Beijing was slightly less US\$2300, followed by London with nearly US\$1,200, and Sydney ended about US\$960 per citizen. If we look at sports-related cost, the most expensive games are the Games in Athens with a total about US\$2,000, followed by the games in London with approximately US\$520, the Game in Sydney with around US\$360, while the cheapest ones appear to be the Games in Beijing with about 300 US\$ per citizen. As we mentioned in the introduction, Beijing City invested considerable sums in building environmental measures to improve the quality of air, water and soil. That is the explanation why by the category sports-related cost, the Beijing Games held in 2008 are the cheapest ones.

Figure 4

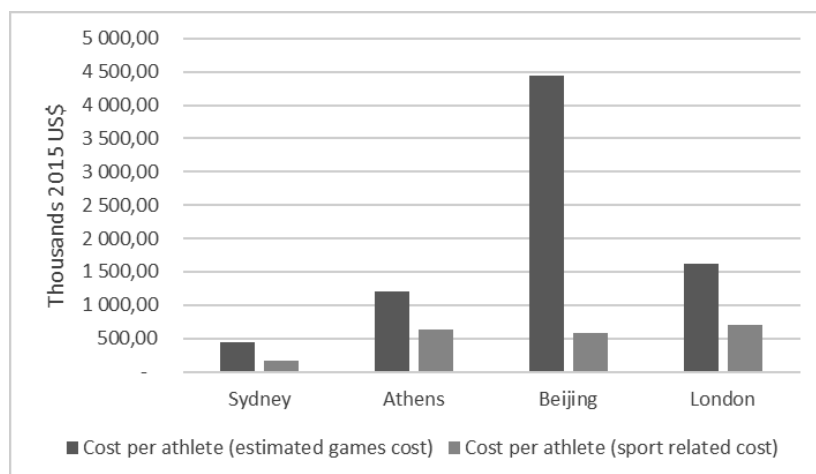
Difference between estimated games cost and sports-related cost per inhabitant



Source: [19, 1, 2, 13, 15, 6, 3, 16]; author's calculations.

Note: All costs have been converted to 2015 US\$.

Figure 5

Difference between estimated games cost and sports-related cost per athlete

Source: [19, 1, 2, 13, 15, 6, 3, 16]; author's calculations.

Note: All costs have been converted to 2015 US\$.

Figure 5 is quite similar to Figure 4, but shows us the average estimated game cost per athlete and sports-related cost per athlete. The number of athletes to the last four Olympics was almost constant, so it is a very appropriate comparison. Average athletes who participated in the Olympics are 10,696.5 (max 10,942, 10,568 min). Compared with the total cost of staging the Olympics the most expensive Olympics Games were those in Beijing, namely US\$4451, followed by the Games in London of about US\$1,620, the Athens US\$1200 and the least costly were the Games in Sydney, only US\$444 per athlete. In terms of sports-related cost per athlete was the most expensive Games in London US\$700. Followed by the Games in Athens, about US\$640, Games in Beijing US\$588, and the best-placed games in Sydney US\$167.

3 Conclusion

In all the four cases studied, GDP growth slowed in the Olympic year. On average, it was a 1.8% decrease. It has to be added that China alone in the crisis year of 2008 recorded a GDP fall of 4.5%. Three host countries (except the United Kingdom) recorded a decline in their GDP growth in the year after the Olympics. The game itself affects economies at a very high level on average 2% of GDP of that country in the Olympic year. While the highest recording country is Greece, the game cost of which was equal to 5.33% of GDP (this number is not necessarily final due to the lack of information from the Greek side). If we take into account only sports-related cost, on average,

the games cost was 0.92% of the GDP of the country in the Olympic year. The recorder was again Greece with 2.82%.

In terms of prices by the number of host city citizens, on average the games cost is about US\$2,053 per citizen. The most expensive Olympic Games were in Athens US\$3,745 per citizen. In terms of sports-related cost was the average cost about US\$792.

The Olympic Games cost an average country per athlete US\$1,932 million. The most expensive games were in Beijing, costing 4,451 millions US\$. In terms of sports-related cost, it was US\$0,525 million per athlete. The most expensive games in terms of the cost per athlete were those held in London.

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