A Cost-Benefit Analysis of the Post Olympic Games Use of the 2004 Athletic Venues

by

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ABSTRACT

This study provides estimates of the economic costs and benefits of the post Olympic use of the 2004 Olympic venues, using a Cost-Benefit Analysis framework. Certain assumptions have been made regarding the three types of costs: depreciation, maintenance and operation. Two scenarios of revenues are put forward: a profit maximization scenario and a private-public mixed objective maximization scenario. Two basic conclusions emerge from the CBA valuations. First, many venues have very small net economic benefits in their post-Olympic use. It might be more efficient if these were considered as "sunk" cost and closed down. Second, for some venues the low economic return is because of the legal restrictions on their post-Olympic use. If these restrictions are removed, these venues can have a high rate of return.

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CONTENTS

1. Introduction: Olympic Games Impacts

The Olympic Games are a major sporting event that takes place every four years in different cities (countries) over for a period of about three weeks. Its organization requires many years of preparation. This is the reason why the International Olympic Committee (IOC), the right-holder of the Games, announces seven years in advance, through a bidding process, the location of the Games. The City of the 2004 Games was known in September 1997. This gives the host authorities the necessary time to prepare the city for the Games.

As was the case even in antiquity, the modern Olympic Games are not a simple athletic event. The IOC itself sees the games as an opportunity for the host country to achieve non-athletic goals. Even though the economic impacts are considered very important, other impacts such as social, cultural, environmental and political have also been used to evaluate this mega event. The hosting of Olympic Games is considered an opportunity for boosting economic and social development. The analysis of the economic and social impacts of Olympic Games has been the subject of extensive research. The Games are considered to be a *hallmark* event which includes a number of activities, such as:

1. Construction in order to create the necessary infrastructure for organizing the Games. There are two types of construction projects: permanent and temporary.
2. Sports events that take place during the Olympiad.
3. An increase in international tourist influx that starts from the moment of the IOC's announcement and continues for a long period after the Games.[1]
4. An increase in private domestic and foreign investment.
5. An increase in human capital investment.

The various phases of the economic impacts of the Games are given in Table 1.1. Sydney's and Barcelona's Olympic Games experiences demonstrate that these events may boost economic development. From an economic methodological point of view it

[1] For small countries, the tourism impact might be the most important long-run economic impact. An evaluation of the tourism impact of the 2004 Games is presented in Papanikos (1999). Faulker (1993) presents a general evaluation of the tourism impact of hallmark events.

is very difficult to accurately estimate the economic impacts of the Games because they extend over a long period of time, usually over 10 years (1998-2011 for Athens). Very important become the assumptions regarding the economic environment during this long-run period of impact. Equally important in this scheme are methods of financing the games-related investments; the conditions in the labour market; the impact on the total factor productivity; and the assumptions about the impact on international tourism.

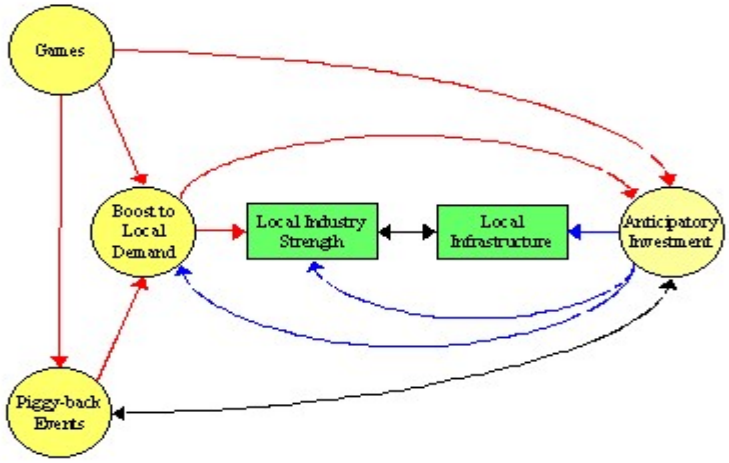
Table 1: Phases of Economic Impacts

Phases **Economic Activities**	Preparation (1998-2004)	Games (2004)	Post-Games (2005 - 2010)
Public Investments (Infrastructure + Sport Venues)	***	**No**	**No**
Sport Events	**	***	*
Games Induced International Tourism	*	***	**
Private Investments	**	*	**
Foreign Investments	*	*	**
Human Capital	***	**	**No**
Exports	**No**	*	**

***Very Big **Big * Small

Schematically, the economic impacts of the Olympic Games are given in Diagram 1. Permanent impacts are represented by rectangles and temporary ones by ovals. The initial event is the Games, which is a temporary event. The Games have three direct impacts. First, they instigate parallel athletic events such as preparations, tournaments, and test events. Second, the Games increase the demand for final goods and services that are produced in the local economy in order to cover operational expenses. Third, the Games require a long-run investment program which creates a permanent local infrastructure, the biggest economic impact of the Olympiad, similar to the importance of the tourism impact.

Diagram 1: Flows of Olympic Games Economic Impacts



Source: Swann (2001).

The Olympic Games impacts are not always positive. The event must leave behind a city or a country indebted and with investment projects (sports venues) that have no alternative use.[1] There is a big concern that scarce resources are not efficiently used, i.e. investment funds are not allocated to projects that maximize economic and/or social benefits. Economists, see Noll & Zimbalist (1997) and Siegfried & Zimbalist (2000), have argued that the economic evaluation of sports venues is weak which leads to an overestimation of the economic benefits and an underestimation of the overall costs in order to make an argument in favour of the project.

A number of authors consider the hallmark events a great opportunity for an overall urban development, particularly of the historical centre of host cities. This is very important for cities such as Athens and Barcelona. According to Judd (1999), this general tendency has created a city centre that is characterized by the improved quality of services and security. Two of the most important components of this city revitalizations are sports and conference venues. For cities that experience a long period of urban degradation, like Athens, this is very important. If one considers the

[1] Essex & Chalkey (2001) provide an historical account of the city experiences of organizing the modern Olympic Games. They conclude that the Games may lead to urban development.

political process required for such big projects[1], then the Olympic Games is a great opportunity for such cities to implement overall revitalization and urban development projects. Studies such as conducted by Phelan (2002) for the Commonwealth Games in the City of Manchester, Kiely (2002) for the American Cup in New Zealand, Morgan (2002) for the World Cup of Rugby in Wales, and Frick (2002) for the Football World Cup in Germany have argued that these events had positive long-lasting impacts on the city that organized them. However, the basic economic question still is valid: are these (sport) investments an efficient allocation of scarce resources? Most economists would argue that they are not. Political reasons and the use of public money can explain this "overinvestment" in sports venues. Economists have developed a framework for measuring the efficiency of such investment projects: the Cost-Benefit Analysis (CBA). In the next section this method will be presented in order to evaluate the overall economic efficiency of Olympic venues.

There has been a great discussion, usually at the media level, of how much the Olympic Games cost the taxpayers of the country that hosts the games. This "Olympic Cost" should include only the cost that is required to organize the Games. This is the cost of any activity that would not have been undertaken if the Games had not taken place. The net Olympic Cost should take into consideration all the revenues that might be incurred because of the Games, including the post-Olympic sales of any of the "sunk cost" materials used for the Games. In this sense, media have a tendency to overestimate the actual cost of organizing the Olympic Games.

[1] Roche (1994) gives emphasis on the political process required for bidding and organizing big events.

2. Cost-Benefit Analysis of Olympic Venues

Cost-benefit analysis (CBA) has become the dominant approach of an economic evaluation of public programs and state investments. CBA has been used extensively by public authorities to do an *ex ante* and an *ex pos*t evaluation of many public projects and has become the necessary tool for decision making in public works. This tool of applied economics has been the subject of severe criticism from both academic economists and bureaucrats. Economists rightly argue that CBA in the hands of politicians and bureaucrats has been misused in order to support the implementation of certain public works. Politicians, on the other hand, claim that CBA does fully take into account the total "benefits" of a given project.

The purpose of this section is not to add to this debate. Boardman, et. al. (2001) present, at a textbook level, a good reasoning of why and how CBA can be applied to aid policymakers in their decisions concerning public projects. At the economic theoretical level, CBA is directly related to the economics of welfare that has a long history, going back to classical economists, see Persky (2001). Here, this framework is used to evaluate the efficiency of post-Olympic use of the Athens 2004 sport venues. The construction of venues for the 2004 Olympic Games was a huge public program. With the exception of one sport venue and one non-sport venue all others were financed by government funds. There was a good reason for this. Olympic Games can be considered as a public good.[1] What makes the Olympic Games a "public" good is the fact that it is neither possible nor desirable to exclude someone from "consuming" the Olympiad that takes place in one country.

This implies that there is a market failure in supplying the Olympic Games. Whenever there is a market failure, there is a role for public involvement. In the case of the Olympic Games, public involvement is multi-dimensional. The International Olympic Committee (IOC) has a monopoly right in organizing the Olympic Games every four years. For each Olympiad, through a bidding process, the IOC transfers this right to a public national entity which is an organization that is backed by the national government. In the case of the 2004 Olympiad, the Athens Organizing Committee of the Olympic Games is a public company established by an Act of the Greek Parliament. This company will be dissolved after the Games are over.

[1] There has been a long debate in economics about public goods that goes back to Adam Smith. An excellent introduction of the economics of Public Goods is given in Stiglitz (2000).

There are two types of CBA: *ex ante* and *ex post* evaluation of public investment projects or public policies. *Ex ante* evaluation helps the policymaker to decide whether a specific project should be undertaken or not. *Ex post* evaluation is done after the project has finished and all costs are "sunk". In the case of the Olympic Venues, the *ex ante* CBA would have helped the policymaker to decide whether some venues should have a post-Olympic use (be permanent sites) or should have a temporary use, just for the Games and will be demolished after them. Such an analysis has not been done. However, even at this stage, *ex post* analysis can help government officials to decide on the alternative uses of the various venues.

The CBA analysis applied in this evaluation is restricted only to the economic aspects of costs and benefits. The emphasis is on the efficient allocation of scarce resources. Even though efficiency should be an important goal of policy-makers, particularly because they use other people's (taxpayers') money, other considerations can be taken into account such as equality, politics, national security etc.

Even though the actual implementation of CBA analysis is loaded with economic and political controversies, its concept is very simple. Public projects or policies should be evaluated according to the Net Total Benefits (NTB) which equal the Total Benefits (TB) minus Total Costs (TC):

$$NTB = TB - TC$$

A useful distinction is between economic (E) and social (S) benefits and costs. Applying this distinction to the above, a breakdown of the NTB is obtained in terms of Net Economic Benefits (NEB) and Net Social Benefits (NSB):

$$NTB = NEB + NSB$$

The NEB is the counterpart of profits in a private firm and the NSB is what economists would consider an externality for the private firm. In this study, the CBA analysis for the Olympic venues is restricted to NEB only. The NSB would require a different methodology. Economists have recently developed the method of the

contingent valuation to estimate NSB of public projects or policies.[1] This study is concerned with the economic efficiency of the Olympic projects. NSB are very important but were beyond the purpose of this research.

3. The 2004 Olympic Sites: Location and Characteristics

The Olympic Games is the world's biggest athletic event and requires huge resources to be allocated in building up the necessary sport infrastructure. Most of these investments take place in the city that has been designated by IOC as the host city. However, as it is almost always the case some events take place in other cities as well. In the case of the 2004 Olympic Games, most athletic events will take place in the wider metropolitan area of Athens, called Attica, but four other cities will host preliminary rounds of football games. Just recently it was decided by the IOC, after a proposal made by the host city that the event of shot put is to take place in the area of ancient Olympia.

Table 2 gives the 27 sport venues that will host at least one event. The locations of these sport facilities in the Attica region are shown in the Map (see Appendix). The main Olympic venues are located in the municipality of Marousi, which was mainly renovated for the Games. The total investment cost is about 1.5 billion euro. This includes both renovation and construction of new sport venues. Notice that only two of the 27 venues are located in the city of Athens itself.

There is no doubt that these venues entail tremendous costs that are paid with taxpayers' money, including funds coming from the European Union. There is also no doubt that there is great public support for the Games, just for the pride of it. However, the most important cost is not the construction cost but the cost after the games which include the maintaining and operating of these super modern facilities. The post-Olympic use of these sport facilities will be examined in the next section.

[1] This method was used for the first time in 1947 but it became popular in the 1980s. See the special issue of *The Journal of Economic Perspectives*, Volume 8 (4), Fall 1994. Noonan (2002) reviews the implementation of this methods in projects like the Olympic Venues.

Table 2: Athletic Olympic Venues

Venue	Loca-tion	Seating Capacity	Sports	Construction or Renovation Cost (millions of €)
Olympic Stadium	Marousi	75,000	Track and Field with the exception of Shot Put (Ancient Olympia)	22
Olympic Tennis Center	Marousi	20,000	Tennis	38
Closed Olympic Gym	Marousi	15,000 18,000	- Gymnastics - Basketball	9
Olympic Center of Water Sports	Marousi	25,000	Swimming, Synch. Swimming, Water Polo & Diving	27
Olympic Velodrome	Marousi	5,000	Track Cycling	
Faliro Coastal Zone Olympic Complex	Faliro	31,500	Tae-kwo-do, Beach Volleyball & Handball	231
Stadium of Peace and Friendship	Faliro	14,000	Volleyball	24
Hellinikon Olympic Complex	Hellinikon	67,500	Baseball, Softball, Fencing, Handball & Hockey	190
Galatsi Olympic Hall	Galatsi	6,000	Table Tennis & Rhythmic Gymnastics	54
Peristeri Olympic Boxing Hall	Peristeri	8,400	Boxing	15
Nikaia Olympic Weightlifting Complex	Nikaia	5,000	Weightlifting	47
Agios Kosmas Olympic Sailing Center	Agios Kosmas	6,600	Sailing	125
Vouliagmeni Olympic Centre	Vouliagmeni	3,000	Triathlon	
Goudi Olympic Complex	Goudi	12,000	Modern Pentathlon, Badminton	38
Markopoulo Olympic Equestrian Center	Markopoulo	67.000	Equestrian	103
Markopoulo Olympic Shooting Center	Markopoulo	13,000	Shooting	52
Schinias Olympic Rowing and Canoeing Center	Schinias	24,500	Rowing, Canoe/Kayak Flatwater Racing	154
Hellinikon Slalom Olympic Center	Hellinikon	5,000	Canoe/Kayak Slalom Racing	33
Panathinaiko Stadium	Center of Athens	5,500 45,000	- Archery - Marathon (Finishing)	3
Pampeloponnisiako Stadium	Patras	20,000	Football	36
Panthessaliko Stadium	Volos	22,000	Football	52
Kaftanzoglio Stadium	Thessaloniki	40,000	Football	49
Pankritio Stadium	Heraklio	33,000	Football	49
Karaiskaki Stadium	Piraeus	35,000	Football (Final)	55
Athens City Center Cycling Road Race Course	Athens	-	Road Cycling	2
Parnitha Olympic Mountain Bike Venue	Parnitha	-	Mountain Bike	2
Ano Liossia Olympic Hall	Ano Liossia	9,300 8,000	- Judo - Wrestling	84
TOTAL				**1493**

Source: Special Issue "Olympic Venues", June, 2002, Hellenic Ministry for the Environment Physical Planning and Public Works, Special Issue "Olympic Venues", June, 2002, Ministry of Culture, Official website of Organizing Committee for Olympic Games "Athens 2004" www.athens2004.gr, &Official website of the General Secretarial for the Olympic Games www.ggoa.gr.

4. Post-Olympic Use

Olympic Games leave a legacy to the host city. This legacy includes tangible and non-tangible elements. The former includes the sport venues. However, these venues must be used in the post-Olympic period if they are to be maintained in a way that will cover at least the maintenance and the operation cost. Ideally, they should cover the cost of the initial investment. In this section, an argument is made for each sport venue for alternative private (commercial) and public uses of the sport facilities. In order to be practical, the legal constraints had to be taken into account which determines what is permitted and what is not permitted in each venue. A second constraint comes from the sports federations themselves that, after the Games, they will want to use the venue for their activities, training and games.

Post Olympic uses were classified into seven general categories: Professional Sports, Amateur Sports, Cultural Events, Commercial Use, Office Space, Conferences and Accommodation. It is argued that within this category, the managers of each site can develop alternative uses. Table 3 presents the proposed post-Olympic uses. Taken into consideration the legal constraints and the characteristics of the sport venues, then the great majority of them (93%) can be used for cultural activities and 69% of them for amateur sport activities and conferences. Needless to say that these activities do not attract private funds and usually are subsidized by taxpayers' money. About half of the venues can be used for commercial activities (shops) and only 24% for renting out available office space. About 31% can be used as hostels or housing.

Table 3: Alternatives Post Olympic Uses

Venues	Professional Sport	Amateur Sport	Cultural Events	Commercial Use	Conferences	Offices	Accommodation	Total (%)
Hellinikon Olympic Complex	X	X	X					**3 (43%)**
Hellinikon Slalom Olympic Center		X		X				**2 (29%)**
Agios Kosmas Olympic Sailing Center		X	X	X				**3 (43%)**
Faliro Coastal Zone Olympic Complex	X	X	X	X	X			**5 (71%)**
Schinias Olympic Rowing and Canoeing Center		X	X		X			**3 (43%)**
Markopoulo Olympic Equestrian Center		X	X	X	X	X		**5 (71%)**
Markopoulo Olympic Shooting Center		X	X		X		X	**4 (57%)**
Ano Liossia Olympic Hall		X	X		X			**3 (43%)**
Galatsi Olympic Hall		X	X		X			**3 (43%)**
Nikaia Olympic Weightlifting Complex		X	X		X		X	**4 (57%)**
Stadioum for Peace and Friendship	X	X	X	X	X			**5 (71%)**
Peristeri Olympic Boxing Hall		X	X		X			**3 (43%)**
Athens Olympic Sporting Center	X	X	X	X	X			**5 (71%)**
Goudi Olympic Complex		X	X					**2 (29%)**
Karaiskaki Stadium	X	X	X	X	X			**5 (71%)**
Kaftanzoglio Stadium	X	X	X	X	X			**5 (71%)**
Pampeloponnisiako Stadium	X	X	X	X	X			**5 (71%)**
Panthessaliko Stadium	X	X	X	X	X			**5 (71%)**
Pankritio Stadium	X	X	X	X	X			**5 (71%)**
IBC			X	X	X	X		**4 (57%)**
MPC			X	X	X			**3 (43%)**
Olympic Village		X	X	X	X	X	X	**6 (86%)**
Pallini Press Village			X	X		X	X	**4 (57%)**
Marousi Press Village			X	X	X	X	X	**5 (71%)**
Agios Andreas Village Press		X	X				X	**3 (43%)**
Selete Village Press			X		X	X		**3 (43%)**
Amygdaleza Village Press						X	X	**2 (29%)**
Polytechnioupoli Village Press			X				X	**2 (29%)**
Panepistimioupoli Village Press			X				X	**2 (29%)**
TOTAL	**10 (35%)**	**20 (69%)**	**27 (93%)**	**16 (55%)**	**20 (69%)**	**7 (24%)**	**9 (31%)**	

5. The Economic Costs and Benefits of the 2004 Sports Venues

The cost-benefit evaluations are based on market oriented criteria in terms of the different types of costs and revenues. This is a very critical assumption because a number of venues, at least as it is stated by the government, will not be privately managed and operated. Thus, the estimates of costs and revenues should be interpreted as benchmark values, e.g. what would be the costs and revenues, if they were privately owned and managed. Even for the venues that will be publicly managed, this is useful because it shows what is the opportunity cost of public management. For each venue, we estimated three types of costs and two types of revenues. The cost is divided into the cost of depreciation, maintenance cost and operation cost. Revenues are of two types. For each venue two scenarios of management are assumed. First, the venue is assumed to be owned-managed by private, profit maximizing, agents. Second, a mixture of public-private management is assumed in which other goals enter into managers' objective function. Both costs and revenues are estimated as an annual average estimate, which may not represent the reality of a given year. All figures are estimated in constant 2003 euro.

The depreciation cost of each venue is estimated assuming that the venue completely depreciates after 30 years[1]. The maintenance costs include both the open and closed space of the venue. This includes the cost of guarding and security services. Using some data from existing sport and non-sport venues and some estimated from companies that supply these services, assuming that the maintaining services are outsourced, then the annual maintenance cost is 42 € per square meter of a closed facility and 17 € per square meter of open space. These costs are required if the facilities are to be maintained according to some standards of quality.

The operation costs correspond to what economists would call the variable cost of the infrastructure. An heuristic method was found, applied consistently for all venues. Using data from existing sports facilities it was estimated that the annual operation costs is about 22 € per square meter. An important element of this cost is the number

[1] The relevant literature, which has been used in cost benefit analysis and contingent valuations uses about the same years of depreciation for sports and cultural venues; see Noonan (2002) for a review of these studies and also the most recent studies by Johnson, Mondello & Whitehead (2003), Lee & Han (2002), Strazzera et al (2003), Thompson et al (2002), Amigues et al (2002), Gursoy et al (2003), Saz-Salazar & Montagud-Marques (2003).

of employees estimated in terms of full-time equivalent jobs. The average annual payroll cost was assumed to 15000 €.

Two scenarios for revenues were estimated. First, it is assumed that each venue maximizes profits. In this case, certain assumptions had to be made regarding the average annual revenues for each sport infrastructure. The basic assumption is that the long-run viability requires that revenues must at least be equal to total cost. For a number of venues, this definitely would not be possible but for other reasons they can be kept alive through government subsidies or public operation. In this case, revenues are assumed as a 25% markup over total costs. This is before taxes. Second, it is assumed that a private-public mix of management operates the venue in its post-Olympic phase. In this case a 7% revenue markup is assumed. These markups are based on figures supplied by sports and recreation related private companies. However, all these companies do not match the scale of operation expected for the sports venues.

The above cost and revenue figures are presented in Table 4. In the same Table, estimates of profits and rate of returns are given. The rates of returns are the ratio of profits to the total investment (construction costs). This is the most important figure that can guide public authorities what to expect from a post-Olympic use of sport revenues. These numbers are in many ways useful to public authorities. It is important to emphasize that the rates of returns depend very much on the assumptions – restrictions made about the post-Olympic use of the venue. For example venues, such as the Olympic village have high rate of returns because of the alternative uses permitted for the site.

Table 4: Economic Costs and Benefits of Olympic Venues (millions €)

Venues	Cost			Total Annual Cost	Revenue		Profits (Rates of Returns)	
	D	M	O		Public + Private	Private	Public + Private	Private
Hellinikon Olympic Complex	6.3	12.7	8.7	27.7	29.7	34.7	1.9 (1.02%)	6.9 (3.7%)
Hellinikon Slalom Olympic Center	1.1	2.0	1.0	4.1	4.4	5.1	0.3 (0.9%)	1.0 (3.1%)
Agios Kosmas Olympic Sailing Center	4.2	2.3	1.1	7.6	8.2	9.5	0.5 (0.43%)	2.0 (1.53%)
Faliro Coastal Zone Olympic Complex	7.7	9.8	4.5	22.0	23.5	27.5	1.5 (0.67%)	5.5 (2.38%)
Schinias Olympic Rowing and Canoeing Center	5.1	11.6	4.6	21.3	22.8	26.6	1.5 (0.97%)	5.3 (3.5%)
Markopoulo Olympic Equestrian Center	3.4	16.5	10.0	30.0	32.0	37.4	2.1 (2.04%)	7.5 (7.28%)
Markopoulo Olympic Shooting Center	1.7	2.8	2.1	6.7	7.2	8.4	0.5 (0.90%)	1.7 (3.23%)
Ano Liossia Olympic Hall	2.8	1.8	1.8	6.4	6.9	8.0	0.5 (0.53%)	1.6 (1.91%)
Galatsi Olympic Hall	1.8	1.8	1.8	5.4	5.8	6.8	0.4 (0.71%)	1.3 (2.53%)
Nikaia Olympic Weightlifting Complex	1.6	1.2	1.2	4.0	4.3	5.0	0.3 (0.59%)	1.0 (2.12%)
Stadium for Peace and Friendship	0.8	3.6	2.9	7.3	7.8	9.1	0.5 (2.13%)	1.8 (7.61%)
Peristeri Olympic Boxing Hall	0.5	0.5	0.5	1.4	1.5	1.8	0.09 (0.67%)	0.3 (2.41%)
Athens Olympic Sports Center	10.6	13.5	11.4	35.5	38.0	44.4	2.5 (0.78%)	8.9 (2.78%)
Goudi Olympic Complex	1.3	2.6	1.4	5.3	5.7	6.7	0.4 (0.99%)	1.3 (3.54%)
Karaiskaki Stadium	1.8	2.4	2.1	6.3	6.8	8.0	0.4 (0.81%)	1.6 (2.88%)
Kaftanzoglio Stadium	1.6	1.3	1.1	4.1	4.4	5.1	0.3 (0.58%)	1.0 (2.07%)
Pampeloponnisiako Stadium	1.2	2.0	1.9	5.1	5.5	6.4	0.4 (1.0%)	1.3 (3.6%)
Panthessaliko Stadium	1.7	1.6	1.4	4.7	5.0	5.9	0.3 (0.63%)	1.2 (2.25%)
Pankritio Stadium	1.6	3.4	3.1	8.2	8.8	10.2	0.6 (1.16%)	2.0 (4.16%)
Olympic Village	9.9	17.6	17.0	44.5	47.7	55.7	3.1 (1.05%)	11.1 (3.75%)
IBC/MPC	6.4	5.1	5.6	17.2	18.4	21.5	1.2 (0.63%)	4.3 (2.23%)
Public Press Villages	6.7	7.1	7.0	21.0	22.1	25.8	1.4 (0.72%)	5.2 (2.57%)
Private Press Villages	4.9	7.5	5.8	18.1	19.4	22.7	1.3 (0.87%)	4.5 (3.11%)

6. Conclusions

The Olympic Games are the biggest sports event in the world today with important economic and social impacts. The cost of building the necessary infrastructure and organizing the Games is such that only rich countries can afford to host the Games. A big economic concern of the hosting cities is the post-Olympic use of the sport and non-sport infrastructure that is necessary for the Games and might have no efficient use after the Olympiad. Economists have developed an appropriate framework, the Cost-Benefit Analysis, in order to measure the efficiency of such investment projects as the Olympic Games venues. This study used CBA to evaluate the efficiency of the post-Olympic use of the Athens 2004 Games.

The evaluations are based on a number of assumptions concerning the costs of depreciation, maintenance and operation. Also, two scenarios are presented regarding the expected revenues that correspond to a pure private use and a public-private mix of management and use of the Olympic facilities. The evaluations also take into consideration the institutional-legal constraints for each venue that restricts the alternative uses of the site.

The CBA shows that most investment projects have a very low economic rate of return in their post-Olympic use. In other words, on one by one evaluation, economic considerations alone will render most of these projects inefficient. In some cases, it might pay off to consider these sites as sunk cost and close the facility because they might not be sufficient to cover the maintenance and the operation costs. This will create a tremendous burden on the government budgets for years to come since political pressures will force the government to keep these sites “open”.

There are many reasons why the majority of these venues are considered as having very high opportunity cost. Most of them are currently considered as sunk costs. For example, the high cost of construction is one of the reasons why the rate of return in many venues is almost zero. This means that if it was not for the Olympic Games, these venues would have never been constructed. Also, the cost of maintaining and operating the venue cannot be altered in the post-Olympic use of the venue.

Policymakers are left with two alternatives. First, they should consider closing the facility if the revenues do not cover the maintenance and the operating costs. Second, they should consider relaxing the restrictions imposed on the alternative uses in the post-Olympic phase. This is a political decision and goes beyond the purpose of this

study. However, it should be mentioned that policymakers are seriously considering this for venues such as the Hellinikon Olympic Complex that have a big potential for development.

A final point relates to the aspect of social benefits and social costs. In this study, only the economic aspects of CBA were presented. This is because the purpose of this study was to evaluate the economic impacts of post-Olympic use of the sports venues. The social benefits would require a different methodology, that of the contingency valuation. Future research should take the social benefits and social costs of the post Olympic use of the sports venues into consideration.

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Parnitha Olympic
Mountain Bike Venue
Olympic
Village
To Thessaloniki
Marathonas
Schinias
Olympic Rowing
and Canoeing
Centre
Dekelia
Ano Liossia
Olympic Hall
To Patra
Athens Olympic
Sports Complex
Galatsi
Olympic
Hall
MPC
IBC
Peristeri
Olympic
Boxing Hall
Rafina
Goudi
Olympic
Complex
Athens City Centre Cycling
Road Race Course
Nikaia
Olympic
Weightlifting Hall
Panathinaiko Stadium
Piraeus
Athens International Airport
Eleftherios Venizelos
Faliro Coastal
Zone Olympic
Complex
Helliniko
Olympic
Complex
Markopoulo
Olympic
Equestrian
Centre
Agios Kosmas
Olympic Sailing
Centre
Markopoulo
Olympic
Shooting Centre
N
0 1 2 3 km
Voulliagmeni Olympic Centre