

Estimating the Cost and Benefit of Hosting Olympic Games: What Can Beijing Expect from Its 2008 Games?

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ABSTRACT

Cities who host the Olympic Games must commit to significant investments in sports venues and other infrastructure. It is commonly assumed that the scale of such an event and the scale of the preparation for it will create large and lasting economic benefits to the host city. Economic impact studies confirm these expectations by forecasting economic benefits in the billions of dollars. Unfortunately these studies are filled with misapplications of economic theory that virtually guarantee their projections will be large. Ex-post studies have consistently found no evidence of positive economic impacts from mega-sporting events even remotely approaching the estimates in economic impact studies. For the 2008 Summer Olympic Games in Beijing, it appears China will take these massive investments in venues and infrastructure to a new level. If organizers of the Beijing Games base their expectations on economic impact studies from previous Olympics, they are sure to be disappointed. The potential for long term economic benefits from the Beijing Games will depend critically on how well Olympics related investments in venues and infrastructure can be incorporated into the overall economy in the years following the Games.

INTRODUCTION

“Mega-events” such as the Olympic Games require large sums of public money to be spent on venues and infrastructure improvements. In order to justify the use of public funds, economic impact studies are often commissioned which invariably project large inflows of money that will have a long-term positive effect on the economy by such means as job creation and visitor spending. Events of the scale of the Olympic Games, which attract large amounts of money from outside a local economy, are forecasted to have economic impacts in the billions of dollars.

Ex-post studies, however, have consistently found no evidence of positive economic impacts from mega-sporting events even remotely approaching the estimates in economic impact studies. In a study of the impact of Super Bowls on local economies, Philip Porter (1999) found “no measurable impact on spending associated with the event. The projected spending and spillover benefits of regional impact models never materialize” (Porter 1999, p. 61). Porter’s explanation is that capacity constraints in the hotel industry cause room prices to

increase with no change in occupancy rates. Higher rates contribute to the crowding out of regular traffic and net spending in areas other than hotel rooms changes little or not at all.

Longer term sports programs, usually involving stadium subsidies to attract or keep professional teams, have also failed to deliver on projected economic benefits. Even for cities that usually are considered success stories for sports development strategy, such as Baltimore (Hamilton and Kahn 1997) and Indianapolis (Rosentraub 1994), empirical research does not find evidence of statistically or economically significant positive impacts.

In July of 2001, Beijing was awarded the 2008 Summer Olympic Games. Most people assume that such an event will bring enormous economic benefits to the host city not just during the event, but for years afterward. "The scale of the organisation, facilities and infrastructure required for such a huge undertaking are such that the Games cannot but have substantial economic effects" (Sydney 2000 Games, p. 2). But what exactly are these economic effects, and how do they affect the quality of life of local residents?

The relevance of studies such as these to the Beijing games depends in part on the similarity

of the economic conditions in China to previous hosts. It seems logical that a less developed country will have more to gain from long term growth opportunities. Matheson and Baade (2003) argue, however, that the prospects of mega-sporting events are even worse for developing countries. The opportunity costs of providing state of the art facilities are much higher and lack of modern infrastructure requires significant additional investment.

In what follows, misconceptions that lead to the overly optimistic forecasts of economic impact studies will be explained, with a closer look at impact studies from recent Olympic Games. Finally, the plan for the Beijing Olympics will be examined to see how China's experience may compare to other Games.

THE FALLACY OF ECONOMIC IMPACT STUDIES

Economic impact studies have become standard operating procedure for supporters of public funding for sports teams or events. Their prevalence has led to acceptance of their findings by the public, media, and even academic circles with little or no critical evaluation. Because of the high profile of such events, large (and positive) economic effects are taken as given; the studies confirm what is already believed. Short et al (2000) provides an

example of a typical statement: “The promise of worldwide exposure and economic gain has made hosting these major and regularly scheduled sporting affairs a lucrative goal for aspiring cities around the world” (Short 2000, p. 320).

Sports economists, on the other hand, have found economic impact studies lacking both in theory and practice. Ex-post studies have consistently failed to find evidence of any economic benefits related to sports teams and facilities. In examining recent retrospective studies, Coates and Humphreys (2003, p. 6) concluded “building new sports facilities and attracting new professional sports teams did not raise income per capita or total employment in any US city.” A closer look at the methodology of such studies reveals an appealing but fundamentally flawed line of economic reasoning that virtually guarantees a forecast of large economic benefits.

The simple elegance of economic impact studies, injections of money circulating over and over in an economy to create a multiplier effect, has an alluring “something-for-nothing” quality that is hard to refute. The mistakes made in economic impact studies are so numerous that making a lucid counter-argument can be difficult. Critics have focused primarily on the following areas of misapplication: treating costs as

benefits, ignoring opportunity costs, using gross spending instead of net changes, and using multipliers that are too large.

In many cases the cost of constructing stadiums, which to a large degree is spent on hiring construction workers and purchasing materials from local suppliers, is counted as a benefit to the local economy. This is arguably the most egregious error in economic impact studies. It is backward-looking in that it looks at the production aspect of the project and ignores the effect of the actual consumption of the product. The following quote exemplifies the bizarre logic of this type of accounting:

The initial construction of a \$10 million sports facility provides an initial impact of \$10 million on the local economy. This is the direct impact. Clearly, the construction of the facility will require concrete, steel, construction workers, and so forth. The money spent on these materials and services comprises the indirect expenditures, or the indirect impacts (Hefner 1990, pp. 4-5).

Clearly, the initial cost of the project has now been counted as a benefit not once, but twice; directly and indirectly. If the economy is at full employment, the workers needed for the stadium would have been doing something else: public investment

crowds out private investment. During a period of high unemployment it could be argued that the project gives jobs to people who would otherwise be idle, in which case the expense of the stadium is at best a transfer from one group to another; still not a benefit. And because this method ignores the function of the project, the same employment effects could be accomplished if the government would “simply give the money to the workers as unemployment insurance, or employ half the workers to dig a hole and the other half to fill it up” (Noll and Zimbalist 1997a, pp. 61-62).

Counting construction costs as a benefit is also an example of a more general error of economic impact studies: failure to recognize opportunity costs. Alternative uses of local dollars such as a hospital, education funding, or even letting taxpayers keep their money and spend it on what they want are not considered. Instead, dollars for the initial investment are assumed to have come out of thin air. Will the economic impact of the expenditure on the project be fundamentally different from the impact that would have occurred if local residents had spent an equal amount in the economy? The answer is yes, but not necessarily in the way the economic impact model suggests. The effect will be redistributive, putting money into the construction sector, and taking

it away from other sectors, with the fairly safe assumption that expenditures by the general population would be more broad-based and thus less obvious.

Obtaining a value for the initial impact of a team or event is the first step in any economic impact study. The initial impact is then magnified through the use of a multiplier, based on the idea that money brought into a local economy will be respent over and over, becoming income for others in the economy.

In this way a multiplier also magnifies the errors made in calculating initial impact, especially by once again failing to recognize opportunity costs. The multiplier is applied to any new spending in the economy regardless of the source. If the multiplier does not depend on the spending source, then it is useless in the comparison of alternative projects—the multiplier cancels out.

Critics of economic impact studies have used proper application of basic economic principles to show that the methodology of impact studies greatly overestimates the impact of sports teams, stadiums, and events, but they have accepted the mercantilist premise of economic impact studies that the path toward wealth is through increasing exports. Mercantilist thought denies the existence of mutually beneficial exchanges.

Trade becomes a zero-sum game where the winner is the seller and the loser is the buyer. All that matters is the money trail. Since local spending does not bring money into the economy, spending by local consumers is meaningless: "Their expenditure associated with the sports events is merely likely to be switched spending, which offers no net economic stimulus to the community, and it should not be counted as economic impact" (Crompton 1995, p. 26). By elevating the importance of exports over the local consumption critics have embraced the notion that only projects that generate exports are valuable.

If increasing net exports is the way sporting events benefit a local economy, then the Olympic Games should be an event that makes a noticeable contribution to an economy. Perhaps no other sporting event draws more visitors so geographically dispersed or showcases the host city as visibly as the Olympics. Economic impact studies prepared for recent Olympic Games contain many of the mistakes listed above. Not surprisingly the projected impacts have not come to fruition.

Why does the use of economic impact studies persist even in the presence of harsh criticism from the economics field? Delaney and Eckstein (2003) propose powerful groups who will benefit from the project, which they refer to as "local growth coalitions," use these

studies as one tool in promoting events. While the economic impact studies "do not destroy the legitimacy of academic research, they rationalize continuing to pursue questionable social policies" (p. 37). The air of authority with which the findings of the study are presented create enough confusion in the public to deflect the criticisms of economists.

In addition to the standard projections of economic impact, Olympic studies also include longer term benefits sometimes referred to as the "Olympic Legacy." These legacy effects, derived from positive publicity from the Games, include increased tourism after the Games, attraction of business, and infrastructure investments that improve the urban environment. Legacy impacts are generally not incorporated into the economic impact numbers, but rather offered as an additional, unquantifiable benefit. The lack of any ex-post study that finds improvements in economic growth or living standards due to mega-events should cast some suspicion on the legacy effects of Olympics, or at least the ability of such effects to be transformed into real economic benefits to the local economy. Baade and Matheson (2002) found "the evidence suggests that the economic impact of the Olympics is transitory, one-time changes rather than a 'steady-state' change" (p. 28).

It has also been argued that the Olympic Games can advance a city in the hierarchy of "world cities." According to Short et al (2000), "some of the most important global spectacles are sports mega-events such as the Olympics which reach a worldwide television audience and offer perhaps the best stage upon which a city can make the claim to global status" (p. 320). The world cities concept is closely related to the Olympic legacy, especially regarding tourism, which is seen as a modern arena of economic competition among cities. "During this latest phase of globalization, when tourist attractions are highly prized, many cities are repackaging the old with new accommodations or accessibilities to re-present themselves as living history and to take advantage of the global tourism economy" (Short 2000, p. 319). It is easy to see how a city such as Beijing would find the Olympics appealing in this context.

A BRIEF EXAMINATION OF ECONOMIC IMPACT STUDIES FROM RECENT OLYMPICS

Atlanta (Summer 1996)

For the 1996 Summer Games in Atlanta an economic impact study was prepared for the state of Georgia. As one might expect, the study predicted significant economic benefits to the host city

and state. The Games in Atlanta did have a definite impact on net exports in Georgia, but there is precious little evidence of extraordinary economic performance in Atlanta due to the Games, bringing into question who actually benefits from increased exports and how this affects the local economy.

In an ex-post study, Baade and Matheson (2002) found a modest boost in employment that was short-lived. Even according to their most positive estimates, "the City of Atlanta and the State of Georgia spent \$1.58 billion to create 24,742 full- or part-time jobs which averages out to \$63,860 per job created (pp. 28-29). A recent study by the Upjohn Institute estimates that a new job adds about fifty cents in economic benefit to a local economy for every dollar of wages, so job creation alone certainly cannot justify the public expense for the Atlanta Games (Persky 2004, p. 1).

Table 1 summarizes the economic impact projections of the Atlanta study. The impact of the Atlanta Games was projected to be \$5.1 billion. The source of the impact was nearly equally divided between direct spending by the Atlanta Committee for the Olympic Games (ACOG) for staging the games and spending by out-of-state visitors.

Table 1: Projected Output Impact of 1996 Olympics on Georgia's Economy (\$1994)

Expenditure Category	Total Spending	Direct and Indirect Expenditures	Induced Output Impact	Total Output Impact
Direct Spending by ACOG	1,529,758,000	1,141,903,000	1,444,322,740	2,586,225,740
Other Spending	20,000,000	20,000,000	23,944,000	43,944,000
Spending by Out-of-State Visitors	1,265,363,037	1,145,994,764	1,364,364,452	2,511,359,220
Grand Total	2,815,121,037	2,307,897,764	2,832,631,192	5,141,528,960

Source: Atlanta Committee for the Olympic Games and The Selig Center for Economic Growth, (1995).

Direct impact was primarily through spending by ACOG, whose budget was comprised of private funds. While expenditures were adjusted downward to account for money that flowed directly out of Georgia, the study made no attempt to determine what percentage of the funding came from sources in Georgia. From a net inflow standpoint, this led to overestimation of economic impact. Ticket sales comprised 25% of ACOG revenues and are the largest single source of measurement error (see Table 2). Tickets purchased by Georgia residents should not be included in impact calculations based on net exports.

Fiscal impacts were not reported. This may be because state and local tax revenue projections of \$200 million by ACOG did not cover the \$353.9 million in government spending for the games (\$92.2 million was federal expenditure).

Spending by out-of-state visitors before, during, and after the Olympics was estimated at \$1.265 billion and only slightly adjusted downward for leakages to \$1.146

billion. The estimates make no attempt to assess the impact the Olympics will have on other tourism; for the rest of the economy it is business as usual.

In reality, data and anecdotal evidence strongly suggest the Olympics had a significant crowding out effect on the rest of the tourism industry. Table 3 shows convention attendance in Atlanta, which had been increasing steadily over the previous ten years, fell ten percent from 1995 to 1996. Hotel occupancy rates fell from 72.9% in 1995 to 68% in 1996 despite the Olympics. Macroeconomic indicators in Georgia and Fulton County show no discernible break in the pattern of per capita income growth or unemployment rates (State of Utah 2000). Due to the disruption caused by the Olympics, hotels and restaurants that would be expected to benefit from increased tourist traffic were actually hurt. "In other parts of town, many hotels and restaurants reported significantly lower than normal sales volume during the Games. Even shops and resorts in areas up to 150 miles away reported slower

Table 2: Sources of Budget for Atlanta Olympics

Source	Percent of Budget
Broadcast Rights Fees	33.0
Cash Paid by Sponsors	29.5
Ticket Sales	24.7
Licensed Merchandise	1.9
Other Revenues	11.0

Source: Atlanta Committee for the Olympic Games (1996)

Table 3: Atlanta Tourism Indicators

Year	Number of Conventions	Convention Attendance	Number of Visitors	Hotel Occupancy
1988	1,623	1,737,800	N/A	N/A
1989	1,662	1,800,792	N/A	61.80%
1990	1,721	1,883,546	N/A	62.20%
1991	1,854	2,152,386	N/A	60.40%
1992	2,105	2,503,522	N/A	63.10%
1993	2,321	2,753,412	6,058,000	67.40%
1994	2,410	2,985,641	7,009,900	71.90%
1995	2,560	3,102,455	7,342,000	72.90%
1996	2,280	2,780,000	6,695,000	68.00%

Source: State of Utah, Governor's Office of Planning and Budget

than normal business during the summer of 1996” (French and Disher 1997, p. 390).

Along with crowding out on the demand side, local businesses and workers must also deal with temporary entry on the supply side. Although the Atlanta economic impact report makes no mention of entry by either workers or firms, the Atlanta experience serves as an example of how entry can bring into question if area residents actually benefit from growth in the tourism sector. The Centennial Olympic Park in downtown Atlanta served as the focal point for entry of corporations who sponsored the Games. To some extent the Olympics in Atlanta were self-contained. Entry

of corporations and workers from outside the Atlanta area made the Olympics an economy unto themselves. Much of the income would go to firms and workers who are not permanent residents of the local economy.

Many local businesses that did not have prime access to Olympic venues were caught in a vice between a reduction in regular business on the one hand and increased competition from entry of firms on the other. The lofty projections of the impact of the Games on the Atlanta economy gave local businesses unrealistic expectations about how they would be affected. The reality was so much below expectations that some vendors who leased vending space

for the Olympics from the city sued Atlanta, claiming they were misled about business prospects. Entry drove out above normal profits and those who paid in anticipation of them were greatly disappointed (*Lubbock Avalanche Journal* 1997).

Atlanta's Olympic experience is consistent with Porter's argument concerning hotel capacity constraints discussed earlier. Hotel revenues during the Games nearly doubled while occupancy rates stayed about the same (State of Utah 2000, p. 17). In this way, sectors that have fixed costs high enough to discourage entry for a temporary event are able to capture short-term monopoly rents through higher prices. Just like real estate, hotels become a scarce resource that captures rents. Industries with lower entry costs, such as restaurants or merchandise sales, have monopoly profits competed away. Even when there is a net increase in visitors, impacts are focused on the lodging industry while other sectors have any impact from visitors countered by reductions in regular business.

Legacy effects listed in the Atlanta study emphasized three categories: facilities, media exposure for Atlanta and the state of Georgia, and community benefits. "The long-term beneficial effects on decisions regarding investment, trade, corporate relocation, government spending, convention sites, the location of major sporting events, and vacation plans will likely be

among the most enduring, yet statistically untraceable, legacies of the Games" (Humphreys and Plummer 1995, p. 6).

The study also claims, "world-class facilities will be among the most enduring legacies of hosting the 1996 Olympics" (Humphreys and Plummer 1995, p. 4). The facilities noted by the study include the Horse Park, Shooting Range Complex, and Rowing Center; none of which are likely to be heavily used after the Games. The primary facility, Olympic Stadium, became the new home stadium for Atlanta Braves baseball. Instead of providing a venue of high quality and instant historical significance for future track athletes, the stadium now serves as yet another chapter in the story of public subsidies for professional sports teams. Overall, Baade and Matheson (2002) found "only 31 percent of the ACOG expenditures were in areas that could reasonable be expected to provide a measurable economic legacy" (p. 30).

Atlanta's media exposure from the Olympics was not all positive. Traffic problems were oft-cited during the first week, but then overshadowed by the Centennial Park bombing. "As a result of the traffic congestion, administrative problems, security breaches and over-commercialization, Atlanta did not receive the kind of media attention it would ideally have

liked” (Essex and Chalkey 1998, p. 194).

Salt Lake City (Winter 2002)

The State of Utah included expected migration in its economics impact study of the 2002 Winter Games in Salt Lake City. The relationship between jobs and population growth was not lost on those who prepared Utah’s economic impact report. In fact the job growth projections were used to estimate the population growth “based on the historical relationship between job growth and population growth” (p. 15). What was lost is that job creation is not necessarily a net benefit to the current residents of Utah if population growth absorbs the jobs.

Table 4 shows population and employment impacts from 1996 to March of 2002. There are roughly three new jobs available for every four migrants into Utah during this period, and about eleven jobs for every ten migrants between the ages of 18 and 65. Migrants of working age are projected to be slightly less than the number of new jobs created. If the majority of migrants between the ages of 18 and 65 plan to work, then most of the job creation due to the Olympics is countered by an increase in the labor force. The employment prospects of current residents of Utah improve only slightly.

The Utah study cites many of the same Olympic legacy effects as in the Atlanta study with one interesting difference. The Utah study surprisingly predicts population growth from the Olympics will be temporary, despite the transformational effect they will have on the economy. Instead, Olympics related migration into Utah “declines to zero within a year of the Games” (p. 2). Urban growth was already putting a strain on infrastructure and resources before the Games. Evidently the Olympic legacy that showcases your city to the world only attracts people when you want them to be there.

Sydney (Summer 2000)

The *Economic Impact Study of the Sydney Olympic Games* by the University of Tasmania along with Arthur Andersen (1999) purports to have been prepared “using the most up-to-date modeling techniques . . . and detailed financial information available” (p. 1). Unfortunately, it was also prepared using the most fundamental flaws in economic impact analysis, just like all of the studies that came before.

The report identifies three sources of direct expenditure: infrastructure construction, operation of the Games, and visits by spectators and participants; along with an induced impact: visits due to

Table 4: Expected Job Creation and Migration due to the Utah Olympics

Change In:	1996	1997	1998	1999	2000	2001	2002	2003	Jan-02	Feb-02	Mar-02
Total Pop.	103	1,572	3,231	7,038	9,781	16,661	3,802	337	24,034	31,695	12,017
18-65	71	1,042	2,127	4,464	6,404	10,925	2,424	233	15,322	22,983	7,661
Jobs	78	1,148	2,383	5,243	7,317	12,590	6,409	256	15,415	25,070	9,655
Jobs/Pop	0.76	0.73	0.74	0.74	0.75	0.76	1.69	0.76	0.64	0.79	0.80
Jobs/18-65	1.10	1.10	1.12	1.17	1.14	1.15	2.64	1.10	1.01	1.09	1.26

Source: State of Utah, Governor's Office of Planning and Budget

publicity and awareness of the Games. All four of these expenditure sources then contributed to the indirect impact (p. 4). (The Sydney and Atlanta studies reverse the use of the terms "indirect" and "induced.") Revenues from ticket sales and visitor spending, and expenses from construction and Games operation are treated exactly the same. There is no recognition of the opportunity costs of devoting capital and labor resources to the Games.

The study projected an increase in the Gross State Product of New South Wales of \$5.1 billion, which coincidentally is the same as the total output impact projected for Georgia from the Atlanta Games. Two fifths of the impact is projected to go towards household income (about \$2 billion). Corresponding estimates for Australia as a whole are about 25% higher.

Some legacy effects from the Sydney Games are incorporated into the economic impact calculations. Specifically, international tourism after the

Games is considered the third phase of Olympic impact. Other legacy effects are barely mentioned in the study.

The facilities legacy appears to be one of expense. Sydney had plans for the long-term use of many of its venues, but four years later the arena that housed gymnastics and basketball is in receivership and "the State Government has been propping up other uneconomic venues since the Olympics to the amount of about \$46 million a year" (*Sydney Morning Herald*).

Beijing

The Beijing Organizing Committee of the Olympic Games (BOCOG) is charged with the planning and administration of the 2008 Games. Detailed information on Olympic financing and predicted economic impact are not available for two reasons—the games are still four years away, and it is not necessary for Chinese officials and Olympic organizers to use the overstated findings of an economic impact study as a public relations tool.

Still, there are some indications of

the objectives and the scope of the Beijing Olympics. Essex and Chalkey examined each of the modern Olympic Games (begun in 1896) in terms of their impact on urban change. They divided the Games into three categories: low impact (minimal infrastructure investment, such as Mexico in 1968 and Los Angeles in 1984), Games focusing mainly on additional sports facilities (such as Atlanta in 1996), and Games stimulating transformations of the built environment (such as Tokyo in 1964 and Montreal in 1976). As the Games have grown in stature, so have the ambitions of host cities, so more recent games are more likely to be in the third category. This certainly appears to be the case for Beijing.

Beijing's hopes of the transformational power of the Olympics point to China's ambitions on the world stage. In a classification of world cities, Derudder et al (2003) classify Beijing in their second tier as a "major regional world city" along with cities such as Washington, Hamburg, and Cairo. China may see the Games as an opportunity for Beijing to join or even surpass the three Asian first tier cities: Tokyo, Singapore, and Hong Kong.

According to December 2001 budget forecasts (see Table 5), capital investments on venues and non-sports infrastructure will be US\$14.257 billion. Of this only about 13% (US\$1.872 billion) will

be spent on sports venues and the Olympic Village, which is three times larger than spending on venues for Atlanta. Table 6 shows the planned investment on Olympic venues. Of the 37 facilities listed, 16 are new and almost all but three require some type of upgrade. The biggest projects are Wukesong Indoor Stadium (US\$282.65 billion) for basketball and National Stadium (US\$246.71 billion) for athletics and ceremonies.

Surprisingly, 60% of the Non BOCOG budget is for environmental protection. It appears that Beijing intends to use the Olympics as a catalyst for environmental improvements in the areas of air quality, water conservation, waste disposal, clean energy development, and "greening up" of the landscape. Transportation improvements are part of the environmental improvements. Plans include expansion of public transportation systems and conversion of city buses to clean energy. The transportation plan addresses a wide range of topics, everything from highway construction and pollution control to teaching English to cab drivers and improving the driving habits of the general population.

Every host of the Olympic games sees it as an opportunity to showcase their country to the world with the hope of encouraging long run tourism or investment

increases. For Beijing, emphasis in this area appears to be on the environment and technology, especially communications. The Beijing Olympic Action Plan is more reminiscent of a Worlds' Fair than a sporting event. "We shall energetically develop science and technology and be determined to make the Beijing Olympic Games be a window and stage of showing Chinese new/high-technology and innovative strength simultaneously" (p. 2).

The BOCOG budget (Table 5) actually projects a small surplus, but this does not mean the Olympics will pay for themselves. Included with revenue are subsidies from the national and municipal government (US\$50 million from each) and a lottery expected to generate US\$180 million. In addition BOCOG receives an indirect subsidy by being granted tax-exempt status. The exemption includes revenues from foreign sources such as broadcast rights and sponsorships. The IOC has also been granted tax-exempt status, which among other things will exempt athletes who win prize money from income tax. This is unusual in that governments often include fiscal impacts, net increases in tax revenue, in their evaluation of economic benefits. For Beijing, fiscal impacts will only exist for

indirect spending. This could be considered a more direct form of tax-increment financing.

Of course the capital investments outlined in the Non BOCOG budget dwarf the revenues and expenditures of BOCOG. The question is: how much of the capital investment should be considered a cost of the Olympic Games? Ideally, many of these investments will have long term value, but assessing that value, and more importantly how that value compares to the opportunity cost of foregoing alternative capital investment opportunities, is no easy task.

Often events such as the Olympics are given credit for governments making investments in infrastructure that would have been done much later or not at all. However, the economic conditions that led to these projects not being pursued prior to the Olympics are not likely to have changed greatly.

It may well be the case that Olympics cause investments to be made too soon, instead of preventing them from being made too late. For example, according to BOCOG there are currently 458 hotels with 84,812 rooms in Beijing, which is, "so many hotel rooms that tourists visiting the city will have no trouble finding a place

Table 5: BOCOG BUDGET

Revenues	US\$ m	%	Expenditure	US\$ m	%
Television Rights	709	43.63%	Capital Investment	190	11.69%
TOP Sponsorship	130	8.00%	Sports Facilities	102	6.28%
Local Sponsorship	130	8.00%	Olympic Village	40	2.46%
Licensing	50	3.08%	MPC and IBC	45	2.77%
Official Suppliers	20	1.23%	MV	3	0.18%
Olympic Coins Program	8	0.49%	Operations	1419	87.32%
Philately	12	0.74%	Sports Events	275	16.92%
Lotteries	180	11.08%	Olympic Village	65	4.00%
Ticket Sales	140	8.62%	MPC and IBC	360	22.15%
Donations	20	1.23%	MV	10	0.62%
Disposal of Assets	80	4.92%	Ceremonies and Programs	100	6.15%
Subsidies	100	6.15%	Medical Services	30	1.85%
Others	46	2.83%	Catering	51	3.14%
			Transport	70	4.31%
			Security	50	3.08%
			Paralympic Games	82	5.05%
			Advertising and Promotion	60	3.69%
			Administration	125	7.69%
			Pre-Olympic Events and Coordination	40	2.46%
			Other	101	6.22%
			Surplus	16	0.98%
Total	1625			1625	

Source: BOCOG, www.beijing-2008.org

BOCOG NON BUDGET (City, Regional, or State Authorities and Private Sector)

Capital Investments	Construction Cost (US\$ m)								
	2001	2002	2003	2004	2005	2006	2007	2008	Total
Planned Non Olympic Expenditure									
Environment Protection	1000	1000	1500	1500	1500	1300	827	0	8627
Roads & railways	547	592	636	636	636	313	313	0	3673
Airport	12	30	31	12	0	0	0	0	85
Olympic Related Expenditure									
Sports Venues			213	425	496	283	12	0	1429
Olympic Village					111	159	135	38	442
Total	1559	1622	2380	2573	2743	2055	1287	38	14257

that suits their specific needs” (www.Beijing-2008.org). BOCOG also projects that by 2008 there will be 800 hotels with 130,000 rooms. Will there be too many hotels or will tourism growth make up the difference?

Capital infrastructure expenditures are nearly nine times larger than the revenue and operating expenses of the Games; they will not pay for themselves during those two weeks. After the Games the sports venues (see Table 6) will for the most part be turned over to organizations that can utilize the facility for their sports. Was Beijing so lacking in sports and recreational facilities that nearly \$2 billion can be productively invested, or could those resources be put to a more effective use? For these organizations having state-of-the-art facilities is surely a wonderful thing, but probably not a wise investment from a social welfare standpoint, as shown by the Sydney experience.

In short the degree to which capital infrastructure investments are worthwhile depends on how useful they can be after the Games. Many projects, such as transportation, communication, and environmental improvements certainly provide social benefits. But if the benefits of such projects outweigh the costs, why would an Olympic Games be necessary to spur the project forward, especially in China, where public affirmation in a political marketplace is not necessary?

Instead of being a catalyst for beneficial long-term investment projects, the Olympic Games are more likely to divert attention and resources away from such projects. The extent to which infrastructure investments can be utilized after the Games will be the primary determinant of their economic success.

CONCLUSION

To date there has not been a study of an Olympics or other large-scale sporting event that has found empirical evidence of significant economic impacts such as increases in household income. For the reasons stated above, it is unlikely that anyone ever will. Is there anything unique about the Beijing Olympics that may make their effect different from previous Olympics, either positively or negatively?

One possible difference is due to the opportunity cost of labor in China. If surplus or misallocated labor resources exist in China, job creation from the construction and operation of the Games could be considered a transfer with zero net social cost instead of an opportunity cost. Of course this would be true of any project, so the question of whether alternative infrastructure investments would be more valuable remains.

China may have more to gain in the areas of tourism and investment if they are able to

project a positive image to the rest of the world. Certainly more potential exists for tourism growth in China than in more established destinations in Europe or North

America. This could explain the ambitious plans for infrastructure investment in the areas of environment and technology.

Table 6: Total Investment in Facilities (US \$ m)

Sports Facilities	BOCOG Budget			Non BOCOG Budget			Total
	New	Upgrade	Subtotal	New	Upgrade	Subtotal	
National Stadium				246.71		246.71	246.71
National Indoor Stadium				45.67		45.67	45.67
National Swimming Center				107.51		107.51	107.51
CIEC Hall A		6.00	6.00				6.00
CIEC Hall B		4.00	4.00				4.00
CIEC Hall C		3.00	3.00				3.00
CIEC Hall D		7.00	7.00				7.00
Olympic Green Archery Ground							0.00
National Tennis Center				43.92		43.92	43.92
National Hockey Stadium				68.02		68.02	68.02
Olympic Sports Centre Stadium		12.00	12.00	12.99		12.99	24.99
Olympic Sports Centre Gymnasium		7.00	7.00		27.69	27.69	34.69
Olympic Sports Centre Softball Field		8.00	8.00		20.16	20.16	28.16
Ying Tung Natatorium		8.00	8.00				8.00
Beijing Shooting Range		3.50	3.50				3.50
Beijing Shooting Hall				37.51		37.51	37.51
Laoshan Velodrome				42.68	3.31	45.99	45.99
Laoshan Mountain Bike Course		4.00	4.00				4.00
Road Cycling Course							0.00
Wukesong Indoor Stadium				282.65		282.65	282.65
Wukesong Baseball Field				31.77		31.77	31.77
Fengtai Baseball Field				28.48		28.48	28.48
Forbidden City Triathlon Venue		3.50	3.50				3.50
Shunyi Olympic Aquatic Park				74.85		74.85	74.85
Beijing Country Equestrian Park		15.00	15.00	101.01		101.01	116.01
Shoutiyuan Sports Hall				34.22		34.22	34.22
Beihang Gymnasium		1.75	1.75				1.75
Beitida Sports Hall				13.03		13.03	13.03
Capital Indoor Stadium		7.00	7.00				7.00
Workers' Stadium		3.50	3.50				3.50
Workers' Indoor Arena		3.50	3.50				3.50
Tiananmen Beach Volleyball Ground							0.00
Qingdao International Marina				87.59		87.59	87.59
Tianjin Stadium				83.21		83.21	83.21
Qinhuangdao Stadium				36.14		36.14	36.14
Shenyang Wulihe Stadium		1.75	1.75				1.75
Shenyang Stadium		3.50	3.50				3.50

Olympic Village	40.00		40.00	442.48		442.48	482.48
MPC		30.00	30.00				30.00
IBC		15.00	15.00				15.00
Media Village		3.00	3.00				3.00
Total	40.00	150.00	190.00	1820.44	51.16	1871.60	2061.60

Source: BOCOG, www.beijing-2008.org

A potential negative that may be particularly acute for Beijing is displacement of local residents. The Olympic Village is slated to be converted to housing, but the number of new venues and the environmental program to “green up” the city are certain to decrease the livable space in a city of 13 million. Will Beijing’s Olympics lead to temporary inconvenience or even permanent displacement for its poorest residents?

Long term effects such as these involve a great deal of speculation and may be difficult to evaluate even after the fact. What experience does teach us, however, is that China should not expect the types of effects predicted by economic impact studies. Theory and reality show they simply do not exist.

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