Assessing the infrastructure impact of mega-events in emerging economies

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Assessing the infrastructure impact of mega-events in emerging economies

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Abstract:

Developing countries that host mega-events such as the Olympic Games and World Cup invest enormous sums in stadiums and collateral infrastructure projects. The rapid investment in long-lasting physical stocks raises questions of equity and efficiency for national taxpayers and event attendees. This paper reviews several cases of historical and recent mega-events to assess the infrastructure costs, returns on infrastructure investments, and impacts of the events on urban development patterns. It will highlight cases where mega-event investments contributed to long-term economic growth.

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Introduction and Background

Sporting mega-events such as the Summer and Winter Olympic Games or soccer's World Cup focus the world's attention on the region hosting the event and are highly sought-after prizes. Indeed, the competition among cities and countries to host these events is often as fierce as the competition on the playing field. Increasingly, developing countries have thrown their names into the bidding process in an attempt to chase after the riches and the glory that, presumably, accrue to the city where the games will take place. However, with great events come great responsibilities, and the cost of operating, organizing, and building infrastructure for an Olympic Games or World Cup can be daunting. From an economic stand point, the question is whether mega-events represent a good investment for developing countries, and it is this question that will be addressed in this chapter.

The modern Summer Olympic Games began in 1896 and take place every four years at new locations selected through an elaborate bidding process many years in advance of the event. The Winter Olympics, held since 1924, follow an identical procedure. In recent times, the host city for both the Summer and Winter Games has been selected six or seven years before the event is to take place. Historically, hosting the Olympic Games has been almost exclusively the domain of rich, industrialized nations. Between 1896 and 1952, every Summer and Winter Games was held in either Western Europe or the U.S. with cities in Japan, Canada, and Australia joining the mix over the next two decades (as shown in Table 1). Mexico City in 1968 was the first location outside the industrialized world in which the Games were held. Eastern European countries were awarded the Summer Games in 1980 (Moscow) and Winter Games in

1984 (Sarajevo, Yugoslavia). Seoul, Korea was awarded the 1988 Summer Games, a time during which South Korea might be classified as "rapidly industrializing" rather than industrialized, but it is probably fair to note that shortly after the Olympics, the country was admitted to the Organization for Economic Cooperation and Development (OECD), a sort of de facto dividing line between industrialized and developing nations.

More recently, however, the International Olympic Committee (IOC) has encouraged bids from poorer countries and has awarded the Games on several occasions to non-traditional countries outside of the OECD. The 2008 Summer Games were hosted by China, and the 2016 Summer Olympics will be played in Rio de Janeiro, the first time the event has taken place in the South America, while the 2014 Winter Olympics will take place in Sochi, Russia, leaving Western Europe, North America, and Japan, for only the second time. As seen in Table 2, the list of countries submitting formal bids has also dramatically changed in recent decades. Twenty percent of the bids submitted for the Summer Games prior to 2000 came from outside of Western Europe, Japan, Australia, Canada, and the US. Since 2000, however, over half of all bids have come from this group including applications by Istanbul, Bangkok, Havana, Buenos Aires, and Cape Town, among others, plus, of course, the successful bids by Beijing and Rio. On the Winter Olympics side, the past decade has witnessed bids from Kazakhstan, Georgia, China, Slovakia, and Poland for the first time.

The world's other major international mega-sporting event is the Fédération Internationale de Football Association (FIFA) World Cup. Like the Olympics, this event takes place every four years and features soccer teams composed of players grouped by

nationality (i.e. "national teams"). The World Cup[2] began in 1930 in response to soccer's growing prominence in the Olympics. Due to the number of large stadiums required to accommodate the tournament, FIFA selects a host country for the event as opposed to the IOC's tradition of choosing a single host city. As again shown in Table 1, for the first 60 years of the competition, the World Cup essentially alternated between the two centers of soccer interest, Europe and Latin America, so unlike the Olympics, numerous countries in Central and South America have hosted the World Cup including Uruguay, Brazil, Chile, Argentina, and Mexico.

This rotation scheme lasted until 1994 when FIFA, in an attempt to expand world interest in the game, awarded the World Cup to the US, a huge untapped market for the sport. Japan and South Korea followed in 2002, the first tournament co-hosted by two countries and the first World Cup played in Asia. More "firsts" followed in the wake of the US, Japan, and South Korea. South Africa became the first African host in 2010, Russia becomes the first Eastern European host in 2018, and Qatar, a nation with no domestic soccer league and little soccer history or tradition, will become the first Middle Eastern host in 2022. In 2014, the World Cup returns to a Latin American country for the first time in nearly 30 years when Brazil will host the event.

It is interesting to note that economically, the world's attention has increasingly shifted from the so-called G-7 nations, which include the world's largest industrialized economies such as the US, Japan, UK, and Germany, to the BRICS nations, an acronym for the five rapidly developing nations of Brazil, Russia, India, China, and South Africa.

[2] Other international sporting organizations, notably in Cricket and Rugby, also host similar international tournaments that are dubbed "the World Cup." These events are typically smaller than the FIFA World Cup, and for the purposes of this paper, the term "World Cup" is meant to describe the soccer tournament unless specifically noted otherwise.

When one includes the 2010 Commonwealth Games hosted by India, on the world's sports stage, each of these countries will have held at least one of the world's top sporting events between 2008 and 2018.

The shift to a more egalitarian system of awarding mega-events to non-traditional hosts has it proponents. Supporters of South Africa's failed bid to host the 2006 World Cup were bitterly disappointed with the controversial decision that instead designated Germany as the host nation. With the growing interest in soccer throughout Africa, it was thought that the continent deserved its own chance to host the tournament. However, an in-depth analysis of both the short-run and long-run economic impact of hosting mega-events demonstrates that in a direct economic sense, the World Cup is more of a poisoned chalice. Similarly, the Olympics often prove to be an expensive burden providing a short-run economic boost well below what the event's proponents typically predict and few long-run economic benefits.

Short-run costs and benefits

It is undeniable that mega-events result in significant tourism expenditures, but in the vast majority of cases the observed increases in economic activity fall well short of the economic impact predicted by event organizers. Focusing just on the Olympics and World Cup, Table 3 shows commissioned *ex ante* economic impact studies for various Olympics and World Cups. Table 4 shows *ex post* estimates of economic impact performed by economists not associated with the events for various Olympics and World Cups examining actual economic data before, during, and after the events. In the majority

of cases, independent economists find little or no direct economic impact of mega-events on host economies.

The disconnect between *ex ante* predictions and *ex post* reality comes as a result of numerous factors. As numerous authors including Matheson (2008), economic impact studies may be based on inflated, unrealistic, or best-case predictions, but even when appropriate data are used, many economic impact estimates regularly suffer from several features that serve to exaggerate the numbers. First, to the extent a sporting event attracts spectators from the local community, any money spent by these fans is money not being spent by these residents elsewhere in the local economy. Spending by local citizens does not represent new money in the economy but is rather simply money that is reallocated within the city or country. While crowds of local fans filling up the stadiums cheering for the home team makes for a festive atmosphere, it does little to encourage new spending in the economy or promote economic growth.

Second, money spent in a local economy during a mega-event may not stick in the local economy. Mega-events are frequently characterized by capacity constraints and high prices for items such as accommodations. Hotel rooms can frequently sell at three or four time their normal rates during mega-events, but the desk clerks and room cleaners who service these establishments will not generally see their wages triple or quadruple. Thus, the tourist industry should see an increase in returns to capital, and to the extent hotels or other service industries are owned by individuals outside the local economy, spending at the event leaks out of the host economy.

Third, sports fans can crowd out regular visitors displacing economic activity that would have occurred in the absence of the sporting event. While a city's hotels and

restaurants may be full of sports fans during a tournament, if those same hotel rooms and restaurants would have been full of business travelers or other vacationers in the absence of the mega-event, then the tournament has not resulted in a net increase in economic activity. Yogi Berra's famous quote, "no one goes there anymore, it's too crowded," while nonsensical on the surface, has a strong element of truth to it when applied to tourism and mega-events.

An examination of tourist arrivals in South Africa around the time of the 2010 World Cup is illustrative of these issues. The 64 games of the tournament attracted an average of 49,670 spectators per match for a total of nearly 3.2 million fans. As noted previously, only foreign visitors should be included in any economic impact estimates and many fans are likely to attend more than one game, so the number of persons that should be included in any impact figures is likely to be significantly below 3.2 million. The consulting firm Grant Thornton South Africa initially predicted 483,000 international visitors for the 2010 FIFA World Cup in South Africa, later revising their figures downward to 373,000 international visitors. Even this number turned out to be too optimistic, as FIFA reported that just "309,554 foreign tourists arrived in South Africa for the primary purpose of attending the 2010 FIFA World Cup" and that they spent 3.64 billion rand during their stay (FIFA, 2010). Thus, the substitution effect combined with overly rosy attendance figures reduced 3.2 million fans in the stadiums to just 310 thousand actual overseas visitors.

The bad news for South Africa does not stop there. Total tourist arrivals in June and July 2010 were only 273 thousand above the same months the year before suggesting a degree of crowding out. Furthermore, 2009 was a particular poor year for tourism to

South Africa due to the worldwide economic crisis. Econometric analysis of tourist arrivals suggests an increase of only 123 to 202 thousand above what would have been expected with the World Cup. (Matheson, Peeters, and Syzmanski, 2012). These visitor numbers are unlikely to be sufficient to cover the high costs of putting on a mega-event of this magnitude. South Africa's experience is far from unique. Beijing reported total visitor numbers in August 2008 during the Summer Olympics similar to those in the same month during the previous year, and shops, restaurants and tourist attractions outside of the areas immediately adjacent to the Olympic venues in London reported a tourist drought during the 2012 Summer Games (CBC, 2012).

Short-run costs

Hosting mega-events can be an enormously expensive affair and governing bodies such as the IOC and FIFA typically require that the majority of the costs be borne by the host country. The Olympics require a large amount of very specific sports infrastructure in order to accommodate the range of events. For the World Cup, FIFA requires host countries to have at least 12 modern stadiums capable of seating at least 40,000 spectators with one of the stadiums being able to seat at least 80,000 for the opener and the final. Operating costs can often entail heavy expenditures in large part due to the extensive security requirements that mega-events require. The security budget alone for the Athens Olympics of 2004 ran to over $1.5 billion, nearly 6 times the budget for the Sydney Games just 4 years earlier. The 2010 FIFA World Cup entailed $3.9 billion in expenses borne by South Africa, including at least $1.3 billion in stadium construction costs (Voigt, 2010; Baade and Matheson, 2012). Costs for Brazil's 2014 World Cup are

currently unknown but somewhere well in excess of $10 billion. As is common in sporting events, costs have escalated drastically in just a few short years.

> "Back in 2009, the Brazilian Football Confederation estimated the 12 stadiums being refitted or built for the World Cup would cost about 2.2 billion reais – a figure that two years later seems quaint. The government now sees them costing more than triple that, at 6.9 billion reais." (Grudgings, 2011)

Table 4 shows the sports infrastructure, non-sports infrastructure, and operational spending for various recent mega-events. Full information is not available for all events. Sports infrastructure includes spending on stadiums and sports venues while non-sport infrastructure includes construction costs for transportation, tourist and athlete accommodations, and public spaces. It is important to note that the dividing line between sports infrastructure and non-sports infrastructure is not entirely clear. For example, 20% of the total budgeted cost for London's new Wembley Stadium was $150 million in general infrastructure improvements including a new roads and a renovated Underground station designed to better accommodate stadium traffic. While the roads and subway station are clearly not a part of the stadium, without the stadium, the roads and station would not be required. (Matheson, 2008) It is also worth noting that the entire Wembley project, which will play a significant role in the 2012 London Summer Games, ended up costing 798 million pounds (2007) over twice its original budget, yet another example of optimistic accounting in sporting events.

Given the huge costs associated with mega-events and the relatively small number of visitors, it is virtually impossible for the direct revenues associated with these events to

cover their expenses. This is less true if little in the way of new infrastructure needs to be built. For example, total infrastructure costs for the 1994 World Cup held in the US were only $30 million as the existing stadiums in the country were more than adequate for the event. Similarly, the 1984 Summer Games in Los Angeles made a large profit for the organizers, again because existing facilities were used for most events. Given the huge increases in security that have arisen in the post 9/11 world, however, it is uncertain that even with no capital outlays that a mega-event would have short-run net benefits for the host. Thus, economic rationality rests on the legacy effects of the events in terms of branding or economic growth based on infrastructure legacies.

Long-run benefits

While the short-run tourism boost that mega-events provide are clearly limited especially in relation to the large expenses involved, typically event organizers claim that mega-events result in a lasting legacy that will provide significant economic benefits for many years to come. Just as the short-run benefits of mega-events are overblown, so too are the claims of long-run benefits from sports infrastructure.

It is often claimed that stadiums and sports facilities can serve as an anchor to promote local economic development. Supporters envision stadiums serving as an integrated component of a thriving and diverse local economy. One example of this economic model is the Wrigleyville neighborhood on the north side of Chicago, home to Major League Baseball's Chicago Cubs. Wrigley Field, the second oldest major league sports stadium in the US behind only Boston's venerable Fenway Park, was built in 1914 and rests comfortably within the existing street grid. The Cubs generate significant

spillover effects for the surrounding community by attracting sports fans to area. The 81-game season brings into the local neighborhood roughly 3 million baseball fans who frequent bars, restaurants, and souvenir shops both before and after home games. Figure 1 clearly shows how the Wrigley Field serves to promote local businesses. A thriving entertainment district has grown up around the stadium, and dozens of eating and drinking establishments can be seen within just a few blocks of the Cubs' home.

Unfortunately for proponents of sports-based economic development, Wrigley Field is the exception rather than the rule. Just 10 miles south of Wrigley is US Cellular Park, home of the Chicago White Sox, Chicago's other Major League Baseball team. Built in 1992 to replace the aging Comisky Park, US Cellular is more in line with most modern stadiums that are designed to maximize in-stadium revenue. As exemplified by US Cellular Park (shown in Figure 2), in many cases the modern stadium is best seen as a walled fortress with a moat of parking lots driving fans inside the castle and away from the barbarian hoards of shops and businesses in the local neighborhood. Indeed, the overwhelming evidence from economists studying the economic benefits of new stadiums on local economies have found little or no positive impact on metropolitan area economies (Coates and Humphreys, 1999; 2008; Baade, 1996), although neighborhood effects are evident in some cases (Tu 2005; Feng and Humphreys, 2008).

Most studies of stadium economics have examined facilities in the US and to a lesser extent in Europe, but if the economics are poor for facilities in the industrialized world, their prospects are even worse in developing countries. Rich countries usually have well-developed professional sports leagues meaning that in many cases existing sports infrastructure can be utilized, and many new facilities can find productive uses

after the event. For example, currently all 12 of the stadiums used in Germany in the 2006 World Cup are regularly filled to capacity by the Bundesliga soccer teams that have become full-time tenants. In contrast, the South African Premier Soccer League averages only 7,500 fans per match, hardly the crowds for which the World Cup stadiums were designed. Other events at South African stadiums have rarely filled the venues. Atlanta's newly constructed Centennial Olympic Stadium was renovated after the 1996 Games and is currently home to Major League Baseball's Atlanta Braves while the Beijing National Stadium (better known as the "Bird's Nest") sits largely unused.

Without regular, well-attended events at the newly constructed sports facilities, the stadiums are unlikely to give rise to urban development in their local neighborhoods. Indeed, an overhead image (Figure 3) of the area in Beijing around the Bird's Nest and the National Aquatic Center (or "Water Cube") shows a beautifully landscaped area but little in the way of automobile or pedestrian traffic and few new businesses. Similarly, a view of Soccer City (Figure 4) on the outskirts of Johannesburg, South Africa, the site of the 2010 World Cup Final, shows a string of administrative buildings next to the stadium but little else. For the most part, new stadiums in developing countries mirror the experience of Chicago's US Cellular Park not the more development friendly Wrigley Field.

Sports facilities are generally quite difficult to convert to other uses. Housing for athletes or officials can be easily converted to residential facilities for students or other residents as was done in Atlanta following the 1996 Summer Olympics and in Los Angeles in 1984. Such conversions are rare, however, for athletic venues. The famous "Water Cube" in Beijing, home of most of the aquatic events in the 2008 Summer

Games, was opened for public swimming in the year after the Olympics making it the world's most expensive lap pool. It subsequently underwent significant renovations and reopened as a large water park. While that is fine long-term use for an otherwise underutilized venue, it is also an extraordinarily expensive way to build a water park.

If the creation of new or improved sports infrastructure cannot be seen as a savior for mega-events, then one is left to appeal to the creation of non-sports infrastructure as an economic justification for hosting mega-events. As can be seen in Table 4, non-sports related infrastructure expenditures often exceed the spending on sports venues by a wide margin, and unlike sports venues, expenditures on transportation networks and other types of general infrastructure have the potential to encourage future growth. Mega-events can serve as an impetus to engage in needed infrastructure investments that don't get done due to a lack of political will. Brazil, for example, is engaging in massive investment spending in its run up to the 2014 World Cup and 2016 Summer Olympics. The words of Brazilian Football Confederation President Ricardo Teixeira echo those of many proponents of mega-events.

> "We are a civilized nation, a nation that is going through an excellent phase, and we have got everything prepared to receive adequately the honor to organize an excellent World Cup. Over the next few years we will have a consistent influx of investments. The 2014 World Cup will enable Brazil to have a modern infrastructure. In social terms it will be very beneficial.… Our objective is to make Brazil become more visible in global arenas. The World Cup goes far beyond a mere sporting event. It's

> going to be an interesting tool to promote social transformation." (CNN, 2007)

There is an element of truth to Teixeira's words; however, two caveats are in order. First, spending millions or billions of dollars in unproductive sports infrastructure simply in order to have the political will to make needed infrastructure investments is a distinctly second-best economic strategy. Public capital would be more efficiently allocated if governments would simply make reasonable public investment choices without a mega-event hanging over their heads. In addition, mega-events can place surprising tight deadlines on major public works projects. These deadlines can serve to raise costs due to rushed schedules, relaxed bidding rules, and potential corruption. Finally, it should be noted that preparations for a mega-event can result in too high a level of investment in non-athletic infrastructure. An airport, transportation network, or number of hotel rooms that is the right size for three weeks of tourist insanity may be extensively overbuilt for the post-event period. For example, two major luxury hotels built for the 1994 Winter Olympics in Lillehammer, Norway, filed for bankruptcy shortly after the close of the Games.

The final potential benefit of mega-events is that they can serve to "put the host on the map" leading to higher levels of future tourism, trade, and investment. As noted by Matheson (2008),

> The other major intangible benefit of mega-events claimed by sports boosters is that of national and international exposure. Sports fans

> may enjoy their visit to the city and return later raising future tourist revenues for the area. Corporate visitors, it is claimed, may relocate manufacturing facilities and company headquarters to the city. Television viewers might decide to take a trip to the host city at some time in the future based on what they see during the broadcast of the mega-event. Finally, hosting a major event might raise perceptions of the city so that it becomes a "world class" city and travel destination. All of these claims are potential true although little empirical research has conclusively demonstrated any long-run connections between hosting mega-events and future tourism demand. There are not even any anecdotal examples of companies moving corporate operations to a city based on the hosting of a sporting event.

There are individual cases where mega-events do seem to have major influence on future demand, but it appears that a "perfect storm" is needed. Cities that are already on everyone's map, London for example, gain little in exposure from a major event since they are already at nearly maximum exposure. Other cities such as Atlanta or many Winter Olympics hosts also gain little from exposure because the cities have little to offer potential tourists. Advertising without a subject to advertise is largely ineffective. In a perfect situation, a "hidden gem" can raise its international profile with the right situation. This appears to have been the case with Barcelona, a city with great artistic, cultural, and architectural treasures, but also a city long overshadowed by European

capitals such as Madrid, Rome, London, and Paris, as well as 40 years of fascist rule. By 2012, twenty years after their moment on the world stage, Barcelona was the fourth most visited city in Europe. Barcelona's tourism experience, however, has not been replicated in the majority of Olympic hosts.

Rose and Spiegel (2010) find that international trade increases significantly when a country hosts a major event. Typically, this would lend strong evidence to the idea that the Olympics or World Cup has a large advertising effect, but the authors also find that simply the act of bidding for the Olympics serves to increase capital inflows. They chalk this up to a signaling effect that bidding for the Olympics lets other countries know that the nation is "open for business." If Rose and Spiegel's finding are truly more than spurious correlation, the findings of other economists suggest that an optimal strategy would be bid for the Olympics but not win them. Subsequent analysis of foreign trade flow, however, indeed suggests that Rose and Spiegel's findings are likely the result of selection bias. Countries that are in the position to bid for the Olympics are typically the sort of rich, growing countries that generally experience trade growth. When Olympic hosts and bidders are compared to otherwise similar countries that did not bid for the Games, the so-called "Olympic Effect" disappears (Maennig and Richter, 2012).

It should also be noted that the presence of a mega-event may bring with it intangible costs as well as benefits. For example, the publicity associated with a sporting event may not always place a city in a positive light. The bribery scandal that surrounded the 2002 Winter Olympics in Salt Lake City certainly didn't

enhance the city's reputation. Similarly, the international reputations of Munich and Atlanta were tarnished by the terrorist events that occurred during the Olympic Games held in their respective cities.

Of course, the use of sporting events to provide entertainment for the masses has been around for centuries. The term "bread and circuses" dates from the first century Roman empire where extravagant games were held in conjunction with giveaways of subsidized food in order to pacify the citizenry and reduce urban unrest. Sports boosters also often cite civic pride or national exposure as a primary benefit of mega-events and of sports in general. In many cases, it is undoubtedly true that mega-events bring intangible psychological value to the communities that host them. The 1995 Rugby World Cup in South Africa represented an opportunity for the country to announce its re-emergence as a full member of not only the world's sporting community but also its political community. The picture of South African President Nelson Mandela wearing the jersey of the white South African captain Francois Pienaar while presenting him with the championship trophy was a powerful image to the world indicating that South Africa had emerged from its years of racial oppression and served to unify the country (Baade and Matheson, 2004a). Similarly, Ray Nagin, the mayor of New Orleans, pointed to the return of the NFL to the city in September 2006 as an important symbol to the rest of the country that the city was fully on the road to recovery from Hurricane Katrina which had devastated the city the year previously. Allmers and Maennig (2009) also found that the largest identifiable effect from the 2006 World Cup in Germany was a clear increase in self-reported happiness among German residents, a "feel-good" effect.

Conclusion

Empirical research into the true economic impact of mega-events on host economies tends to show that major sporting events bring high costs with low rewards. The return to mega-events in developing nations may be even lower. Probably the best that can be said for mega-events is that they allow governments to overcome political constraints to allow beneficial infrastructure investments to be made. However, overcoming these political constraints comes at a very high cost in terms of money spent on unproductive investments in sport infrastructure and tournament operations, and there is also no guarantee that any all general infrastructure investments will provide a net positive return for the cities involved.

While the recent trend has been to "reward" developing countries with the opportunity to host mega-events such as the World Cup and the Olympics, the empirical evidence suggests that if rich countries want to promote economic development in poor countries, it would make more sense for high-income nations to explicitly keep these events out of the developing world and instead continue to award the games to rich countries that are better able to absorb more of the associated costs than low-income countries. Alternatively, the industrialized world could subsidize these events when they are held in poor countries through sponsorship or by direct foreign assistance although seems unlikely that rich countries would be willing to subsidize poor countries' hosting efforts when the two are often in direct competition with one another for the rights to host in the first place.

It remains a widespread belief among countries that there are substantial national gains to be made from hosting these global events, but the evidence indicates that this is

rarely the case. Samuel Johnson once wrote that second marriages reflect “the triumph of hope over experience.” Such thinking also pervades the vigorous competition among countries to host these exciting but economically questionable events.

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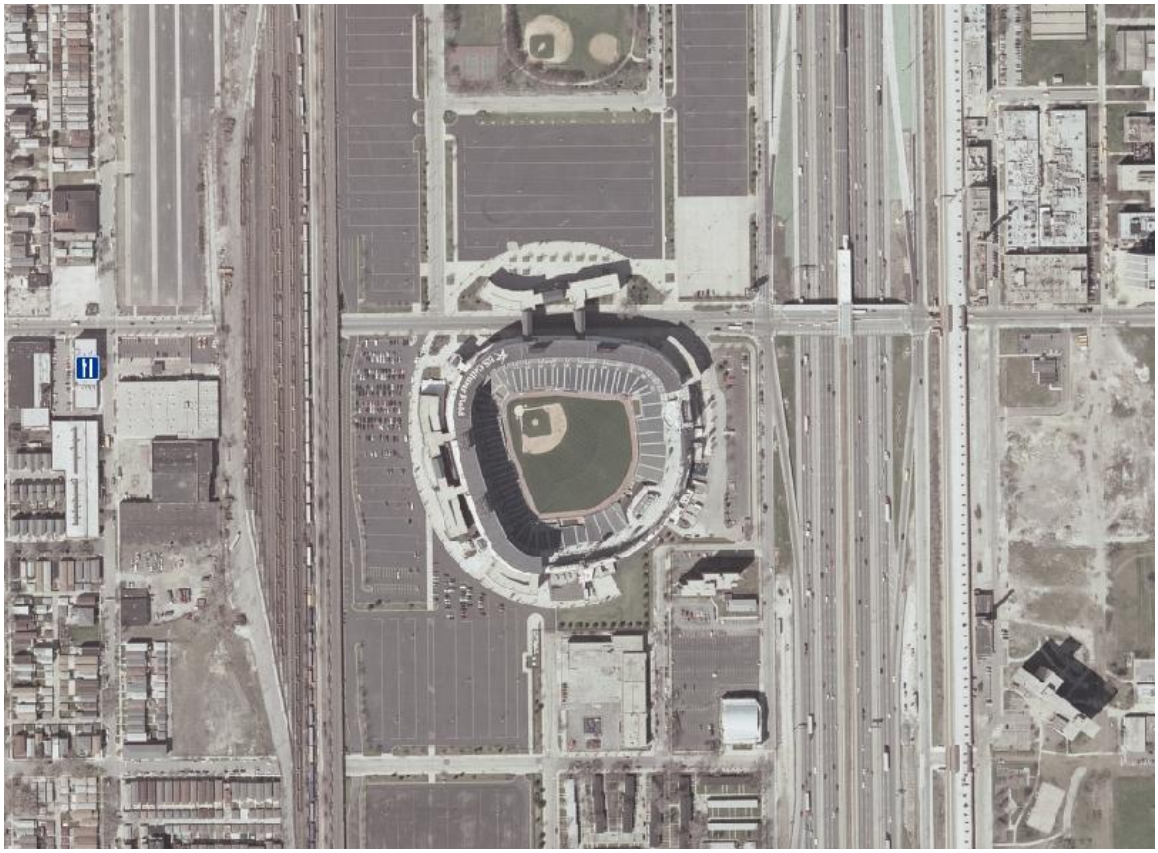
Figure 1: Wrigley Field

Source: Baade, Matheson, and Nikolova (2007). Reprinted courtesy of Geographische Rundschau International Edition.

Figure 2: US Cellular Park



Source: Baade, Matheson, and Nikolova (2007). Reprinted courtesy of Geographische Rundschau International Edition.

Figure 3: "Bird's Nest," "Water Cube," and Olympics Sports Center in Beijing

Image source: Astrium GEO-Information Services

Figure 4: "Soccer City" near Johannesburg

Image source: Astrium GEO-Information Services

Table 1: Hosts of the Summer and Winter Olympic Games and FIFA World Cup

Year	Summer Olympics	Winter Olympics	World Cup
1896	Athens	Not held	
1900	Paris	Not held	
1904	St. Louis, USA	Not held	
1908	London	Not held	
1912	Stockholm	Not held	
1916	Not held	Not held	
1920	Antwerp	Not held	
1924	Paris	Chamonix, France	
1928	Amsterdam	St. Moritz, Switzerland	
1930			Uruguay
1932	Los Angeles	Lake Placid, USA	
1934			Italy
1936	Berlin, Germany	Garmisch, Germany	
1938			France
1940	Not held	Not held	
1942			Not held
1944	Not held	Not held	
1946			Not held
1948	London	St. Moritz, Switzerland	
1950			Brazil
1952	Helsinki	Olso, Norway	
1954			Switzerland
1956	Melbourne	Cortina, Italy	
1958			Sweden
1960	Rome	Squaw Valley, USA	
1962			Chile
1964	Tokyo	Innsbruck, Austria	
1966			England
1968	Mexico City	Grenoble, France	
1970			Mexico
1972	Munich	Sapporo, Japan	
1974			Germany
1976	Montreal	Innsbruck, Austria	
1978			Argentina
1980	Moscow	Lake Placid, USA	
1982			Spain
1984	Los Angeles	Sarajevo, Yugoslavia	

1986			Mexico
1988	Seoul	Calgary, Canada	
1990			Italy
1992	Barcelona	Albertville, France	
1994		Lillehammer, Norway	USA
1996	Atlanta		
1998		Nagano, Japan	France
2000	Sydney		
2002		Salt Lake City, USA	South Korea/Japan
2004	Athens		
2006		Turin, Italy	Germany
2008	Beijing		
2010		Vancouver, Canada	South Africa
2012	London		
2014		Sochi, Russia	Brazil
2016	Rio de Janiero		
2018			Russia
2022			Qatar

Table 2: Summer and Winter Olympic Games bids

Event	Bids from industrialized countries	Bids from developing countries	Bids from Eastern Bloc or former Soviet states
Summer Olympics: 1896-1996	71 (82%)	9 (10%)	7 (8%)
Summer Olympics: 2000-2016	21 (49%)	19 (44%)	3 (7%)
Winter Olympics: 1924-1998	51 (93%)	1 (2%)	3 (5%)
Winter Olympics: 2002-2014	18 (56%)	3 (9%)	11 (34%)

Table 3: Examples of Mega-Event *ex ante* Economic Impact Studies

Event	**Year**	**Impact**	**Source**
World Cup (Japan)	2002	$24.8 billion	Dentsu Institute for Human Studies, Finer (2002)
World Cup (South Korea)	2002	$8.9 billion	Dentsu Institute for Human Studies, Finer (2002)
World Cup (South Africa)	2010	$7.5 billion 198,400 jobs	Grant Thornton SA, Rihlamvu (2011)
World Cup (South Africa)	2010	$12 billion 483,000 visitors	Grant Thornton SA, Voigt (2010)
Summer Olympics (Atlanta)	1996	$5.1 billion 77,000 jobs	Humphreys and Plummer (2005)
Winter Olympics (Vancouver, BC)	2010	$10.7C billion 244,000 jobs	InterVISTAS Consulting (2002)

Table 4 Examples of Mega-Event *ex post* Economic Impact Studies

Event	**Years**	**Variable**	**Impact**	**Source**
Summer Olympics (Atlanta)	1996	Employment	3,500 - 42,000 jobs	Baade and Matheson (2002)
Summer Olympics (Atlanta)	1996	Employment	Approx. 75,000	Feddersen and Maennig (2012)
Winter Olympics	2002	Employment		Baumann, Engelhardt, and Matheson (2012a)
Winter Olympics	2002	Retail Sales	Positive, hotels Negative, retailers	Baade, Baumann and Matheson (2010)
World Cup	1994	Employment		Baumann, Engelhardt, and Matheson (2012b)
World Cup	2006	Employment	Not statistically significant	Allmers and Maennig (2009)
World Cup	1994	Personal Income	down $4 billion	Baade and Matheson (2004)
World Cup	2006	Personal Income	Not statistically significant	Allmers and Maennig (2009)
World Cup	2006	Employment	Not statistically significant	Allmers and Maennig (2009)

Table 5: Costs of Hosting Mega-Events

Event	Years	Type	Spending (millions, $'11)	Source
Summer Olympics (Seoul)	1988	Sports Infrastructure General Infrastructure	$2,856 $4,870	Preuss (2008)
Summer Olympics (Barcelona)	1992	Sports Infrastructure General Infrastructure	$1,731 $14,517	Preuss (2008)
Summer Olympics (Atlanta)	1996	Sports Infrastructure General Infrastructure	$798 $999	Preuss (2008)
Summer Olympics (Sydney)	2000	Sports Infrastructure General Infrastructure	$1,672 $1,725	Preuss (2008)
Summer Olympics (Athens)	2004	Sports Infrastructure General Infrastructure Operations	$13,813	Preuss (2008)
Summer Olympics (Beijing)	2008	Sports Infrastructure Total Spending (est.)	$1,758 $45,000	Preuss (2008) Baade and Matheson (2012)
Summer Olympics (London)	2012	Total Cost	$15,000 - $20,000	Burns (2012)
Winter Olympics (Nagano)	1998	Total Cost	Over $14,000	Longman (1998)
Winter Olympics (Turin)	2006	Total Cost	$4,100	Payne (2008)
Winter Olympics (Vancouver)	2010	Total Cost	C$5,900	Economist (2011)
Winter Olympics (Sochi, Russia)	2014	Sports Infrastructure General Infrastructure Operations	$10,000 (estimated)	Estimates, very preliminary
World Cup (Japan /South Korea)	2002	Sports Infrastructure	$2,000 (S. Korea) $4,000-$5,600 (Japan)	Sloan (2002)
World Cup (Germany)	2006	Sports Infrastructure	$1,870	Downie (2012)
World Cup (South Africa)	2010	Sports Infrastructure Total	$1,300 $3,900	(Voigt, 2010; Baade and Matheson, 2011).
World Cup (Brazil)	2014	Sports Infrastructure General Infrastructure	$3,680 $13,000 (est.)	Downie (2012)
World Cup (Russia)	2018	Total	$10,000 (est.)	Estimates, very preliminary
World Cup (Japan /South Korea)	2002	Sports Infrastructure	$2,000 (S. Korea) $4-$5,600 (Japan)	(Sloan, 2002)