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# The bidding paradox: how economists and politicians might agree on the attractiveness of mega sports events

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## Abstract

The ambition to host mega sports events is (or can be) perfectly justifiable with various arguments. The most persistently used argument is the supposed financial or direct economic gain for the host economy, of which the compelling body of evidence is discouraging. This implies that the justification for hosting should come from a different, broader economic angle. This paper provides a critical discussion of the myriad of economic and frequently intangible effects that could be put forward in the public debate preceding the submission of a bid. Paradoxically, most of these effects are not, or infrequently employed in public debates.

**Keywords:** Bidding; mega sport events; Olympic games; economics; fun and pride

**JEL classification:** D61, D72, H54, L83

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## **1. Introduction**

For every mega sports event, like the Olympic Games or football World Cups, many countries and cities line up to be granted the position of host. The competition is generally fierce. For example, nine countries submitted a bid for hosting the 2012 Olympic Games, which were ultimately held in London. Proponents generally stress the supposedly large economic gains that can be reaped from hosting a mega-event (see e.g. Crompton, 1995; Rose and Spiegel, 2011) and present biased economic impact studies showing considerably economic benefits. However, their economic arguments in favor of hosting a mega-event contrast sharply with the academic literature, which consistently shows that mega sports events are in general economically unprofitable in terms of spending, GDP or employment. However, there are other, broader economic benefits which could justify the ambition to host. These effects are however frequently ignored or only used as an ancillary argument.

The aim of this paper is threefold. First, we evaluate the merits and pitfalls of the set of research methodologies available for assessing the impact of hosting a mega-event. Second, we provide a discussion of the myriad of effects, both in terms of social costs and benefits, of hosting a mega-event along several dimensions; economic and non-economic, tangible and intangible, frequently put forward in the public debate and generally only considered by scholars. Third, in addition to discussing the relevant effects of hosting a mega-event, we also aim to discuss potential pitfalls associated with the measurement of these effects. A key element is however that we go beyond the obvious arguments that are generally used by proponents to ‘sell’ the event to the public. We will also evaluate effects of hosting a mega sport event that are rarely referenced in the public debate, but that should be part of a properly performed social cost-benefit analysis of a mega-event. We show that these could provide a useful perspective in the process of taking position in the public debate.

This paper is organized as follows. Section 2 discusses the merits and pitfalls of social cost-benefit analysis and economic impact analysis as instruments for assessing the impact of hosting a mega sports event. We turn to an extensive discussion of relevant costs tied to hosting a mega-event and their measurement in section 3. Section 4 deals with the benefits and their measurement. Section 5 provides some discussion and concludes.

## **2. Quantifying the economic impact of a mega-event**

There are two methods available to quantify all economic effects of mega-events, the economic impact analysis (EIA) and the social cost-benefit analysis (CBA). The differences between both methods are difficult to grasp for non-economists. As a result, proponents choose to adopt the method that gives the most optimistic result, which is generally the EIA. Besides these two methods which potentially capture all effects, there is a third type of impact study available, the partial analysis, which considers only one or a few effects in isolation. Examples of these are studies focusing on assessing additional spending by tourists. Such partial studies clearly cannot answer the question whether hosting is beneficial to welfare and are therefore not further discussed here.

The general idea of the EIA is that all economic activity following from the mega-event is identified and aggregated (Heisey, 2009; Kesenne, 2005; Coates, 2008). Because economic activity consists of both costs and benefits, the resulting figure does not represent the actual economic gain from the mega-event, but rather some crude measure of the economic activity induced by the event. Furthermore, since costs and benefits are summed it is impossible to say whether the benefits exceed the costs, financially or socially. The EIA generally comprises of the estimation of the additional expenditures generated by the event, such as tourism and investments in stadiums, hotels and infrastructure, and inflate these with a multiplier (we will discuss the choice of the size of the multiplier below). The outcome of

this process is either presented as an indication of the additional value added generated by the event or it is presented in terms of an additional number of jobs generated or both. However, the outcome of an EIA in these terms is not very informative in the sense that it does not say anything about the balance between costs and benefits, let alone give an indication of the impact of the event on social welfare.

Nonetheless, the EIA is often the preferred instrument by bidding committees for investigating the economic impact of a mega-event, since the outcome cannot be negative by definition.<sup>2</sup> Heisey (2009) argues that the main purpose of performing an EIA is generally to provide justification for a project. EIAs are therefore frequently commissioned by proponents of an event, usually bidding committees, and performed by consultancy agencies. For example, during the bidding process the economic impact of 2018 World Cup in the UK was investigated by means of an EIA by PWC (2009). However, in some cases the EIA is also preferred by objective research parties. For example, Baudewyns and van der Linden (2010) assessed the economic impact of the 2018 World Cup for Belgium by means of an EIA.

To gain a proper perspective of the actual welfare implications of hosting a mega-event, a cost benefit analysis is the most appropriate instrument (Coates, 2008; Heisey, 2009; Kesenne 2005). Andreff (2012, p. 41) cites several economists who distrust EIA and prefer CBA above EIA although often with skepticism regarding ex ante application. In a CBA the costs are subtracted from the benefits and thus a CBA gives a proper welfare account. In a properly performed CBA the costs also include opportunity costs, such as distortionary taxes imposed in order to enable the government to finance the event. In a CBA different alternatives to the event scenario and their welfare implications are considered (Coates, 2008; Crompton, 1995;

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<sup>2</sup> A natural disaster, like a hurricane, would also return positive results in an EIA because it generates additional economic activity. However, in terms of welfare it is obvious that a hurricane is not beneficial.

Matheson, 2006), and every relevant effect resulting from the event should be quantified and valued, including effects which are difficult to quantify, such as the environmental burden, or the feelings of pride and joy among the people derived from hosting the event in the area (Heisey, 2009).

The EIA as an impact assessment instrument has many pitfalls. Moreover, even when properly performed, the EIA will not provide useful information regarding the welfare implications of an event. Kesenne (2005) argues therefore that the social cost-benefit analyses is the appropriate tool, while Coates (2008) goes one step further arguing that only ex post studies provide a valuable tool for assessing the impact of mega-events. However, we argue that, given the need for ex ante information in the decision making process prior to submitting a bid, the CBA is a powerful tool to get a grasp of the impact of hosting a mega-event. However, ex post studies also serve an important goal, as an evaluation tool after the event took place, providing an insight in the actual costs and benefits of the event, but also as a source of input for ex ante CBAs.<sup>3</sup>

### **3. Assessing the costs of a mega sport event**

In this section we will discuss several reasons why both ex ante and ex post cost estimates of mega sport events are frequently not accurate. In many cases specific costs are ignored or overlooked and others are underestimated considerably, both obscuring a clear view on the welfare implications of the event.

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<sup>3</sup> Note that Teigland (1999) stresses that caution is required in interpreting ex post studies, since there could be an incentive to be overly positive regarding the past event.

**Costs of security.** In many cases, the costs of security surrounding the event are not included in EIAs and CBAs, or they are seriously underestimated. The main reason for underestimating the cost of security is that these costs mainly concern officials of institutions such as the police, municipalities and governmental ministries. The officials involved in organizing the security surrounding the event would just be assigned a different task in case the event would be organized elsewhere, but they would still need to be paid their wage. This makes that the wage costs of security officials involved are not additional costs. However, during the preparations and the actual event, they have to put their regular tasks on the backburner, which means that the opportunity costs of the security efforts should be taken into account (De Nooij et al, 2012). Generally, it is very difficult to get a clear picture of security costs of mega-events, and in case numbers are being published it is frequently not clear what they comprise. For example, the cost of security surrounding the 2004 Olympic Games in Athens, Greece, were estimated to be 1.08 billion euro for a security staff of 40,000 employees, Beijing employed twice as many security officers for the 2008 Olympic Games (Embassy of Greece, 2004; Zimbalist, 2010). De Nooij et al. (2012) estimate the costs of the public security of the 2006 World Cup in Germany to lie around 450 million euro. Note that additional calculations based on alternative sources such as newspaper articles contained more uncertainty, resulting in major variations in the estimates (between €117 million and €1 billion).

However, for all these cost estimates it is unclear whether the opportunity costs regarding the crowding out of regular tasks of the security staff have been properly accounted for.

In addition to the cost of security, costs related to preparations for the event by civil servants are also frequently overlooked. One can think of activities such as city-dressing, organizing side-events, implementing temporary traffic measures and coordination and planning of emergency practices. The opportunity cost argument is also relevant in this case, since it is

highly likely that regular tasks of public officials are crowded out by the event preparations. To the best of our knowledge, De Nooij et al. (2012) mark the sole attempt to account for these costs, estimating them to lie in the range from 35.8 to 65 million euro for the 2018 World Cup in the Netherlands.<sup>4</sup>

Coates (2008) argues that the distortionary effect of taxes indirectly imposed to generate public funding for the mega-event also needs to be accounted for. This seems to be a valid point, since taxes distort preferences and choices of individuals, which marks a social cost. In the academic literature concerning CBAs it is frequently argued that the cost of distortionary taxes could amount to an additional 25 percent of the costs covered by public bodies.<sup>5</sup>

**Underestimation of the costs of facilities and other investments.** Ex ante estimates of the costs of mega-events, usually made years before the event ultimately takes place, frequently turn out to be flagrant underestimations of the actual costs. A textbook example of this phenomenon are the 1976 Olympic Games in Montreal. Initial cost estimates amounting to \$124 million culminated in a total debt of \$2.8 billion, which took three decades to pay off (Zimbalist, 2010). But cost overruns are in fact more common than accurate ex ante estimates. Other examples include the initial estimates of 2010 World Cup venues in South Africa of \$105 million at the time of bidding, which increased to \$1.35 billion just before the event (Du Plessis & Maennig, 2009). The 2004 Olympic Games in Athens were initially estimated to cost € 4.5 billion, while the ex post cost amounted to € 9 billion. (Embassy of

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<sup>4</sup> The Netherlands submitted a bid to host the 2018 World Cup, which was ultimately granted to Russia. The referenced cost estimate is an element of a CBA of the World Cup taking place in the Netherlands in 2018, which was commissioned by the Ministry of Economic Affairs and performed in the decision process prior to submitting the bid.

<sup>5</sup> The interested reader is referred to Brent (2006, Ch. 9) and De Nooij and Koopmans (2004) for an introduction to this topic.

Greece, 2004). The budget for the London Olympics in 2012 was £ 4 billion around the time the bid was submitted. In March 2007 the budget was revised to £ 9.3 billion. (House of Commons Committee of Public Accounts, 2008), which still excluded several costs figures such as an acquisition of land for the Olympic Park by the London Development Agency for £ 650 million, the private sector's contribution to the costs of the Olympic Village, planned expenditures of some £ 2 billion on staging costs (by the Local Organizing Committee), the costs of staff in government organizations carrying out Olympic related work, and the costs of improving wider transport links in London (House of Commons Committee of Public Accounts, 2008, p. 7). For more examples of cost overruns see Andreff (2012).

There are several explanations available for the persistence of cost overruns. Construction costs and land value tend to increase over the years. Usually, a stretch of several years lies between submitting a bid and the ultimate event taking place. Hosting a mega-event can cause gross misuse of land and provoke wage and resource price pressures, fueling inflation, especially in developed economies where land is scarce and input markets are already under pressure (Zimbalist, 2010). In that case, costs might be difficult to estimate ex ante. Another possible explanation is offered by budgeting guidelines not being properly followed. This is said to be one of the main explanations for the cost overrun of the 2012 Olympic Games in London. Before the bid was submitted, the size, scale and complexity of what was to be delivered had not been fully appreciated (House of Commons Committee of Public Accounts, 2008). Furthermore, bids are frequently enriched with bells and whistles aimed at wooing officials of the organizing sports institution. This is also likely to increase the probability of cost overruns, since these event adjacent projects are frequently not properly worked out yet in the bidding stage (Zimbalist, 2010). A final explanation, one that is frequently offered in the academic literature, is that proponents of the event find it in their interest to

underrepresent the true costs while seeking public endorsement, particularly if they need public financing of their bid (Zimbalist, 2010; Matheson, 2006).

Despite these alarming observations, cost overruns of mega sports events have not been studied in great detail yet. However, studies concerning cost overruns of large infrastructure projects could be helpful in understanding this phenomenon. Flyvbjerg et al. (2002, 2003) argue that the cost estimates on which decisions are based regarding infrastructural projects are highly and systematically misleading. Flyvbjerg (2007) offers three explanations for cost underestimations of megaprojects: technical errors in cost estimates; planning fallacy and optimism bias; deliberately and strategically overestimating benefits and underestimating cost to increase the likelihood of approval. The author rejects the first two explanations since they would diminish over time due to learning effects. Furthermore, Flyvbjerg argues that underestimation is most likely explained by strategic misrepresentation, that is, lying. Strategic misrepresentation occurs because it pays off (Flyvbjerg, 2007). The poor performance of infrastructural projects is caused by risk-negligence and lack of accountability in the decision-making process. Proponents proceed with risky projects as long as they are not liable for ultimate underperformance of the project. Those who ultimately pay the bill, the taxpayer, are the victims of this moral hazard danger (Flyvbjerg et al., 2003). The implication is obvious: anyone who desires an accurate assessment of the true cost of a mega sport event should be very careful interpreting cost estimates and cost-benefit analyses presented by event proponents in the bidding stage.

It is customary not to assign the full cost of investments in infrastructure and venues to the sports event to which they are pegged if these investments are still of value after the event. However, in many cases reported cost overruns are due to huge investments in infrastructure and venues which are integrally tied to the upcoming sports event. Nonetheless, these investments generally are of value for the next 50 years. Preuss (2004) thus argues that it is

not appropriate to assign the full cost of these investments to the event. However, the question which fraction of these investments should be attributed to the event is non-trivial, since the requirements for a mega-event will generally not overlap fully with infrastructural everyday needs. As Kuper (2010) puts it: “Brazil is building airports, roads and ports for 2014. These are fine things, but they shouldn’t be pegged to a World Cup. If you need a new airport, build it. If you only need a new airport for four football matches, don’t build it. The demands of a football tournament are seldom those of daily life.”

However, facilities built just to host one particular event are frequently of no use afterwards, so frequently in fact, that this phenomenon has its own name: white elephants. We discuss a few from many examples available. A substantial fraction of the venues built for the 2000 Olympic Games in Sydney has already been shut down (Atkinson, et al. 2008). The 2004 Olympics in Athens also generated many facilities that went unused afterwards (Rhoads, 2010). Walton (2008) reports in this respect that the Greek pay in excess of \$100 million annually to maintain these facilities while the authorities consider how to put them to better use. Most of the venues for the 2002 World Cup in Japan are now without use (Kuper and Szymanski, 2009). Lillehammer, a town in Norway with just 24,000 inhabitants, features two ice hockey venues with 11,000 permanent seats, which were built for the 1994 Winter Olympics, while two neighboring towns simultaneously built comparable venues (Teigland, 1999). Matheson (2006) argues in addition to this that also non-sports infrastructure pegged to an event, such as ICT or transport infrastructure, could either go unused afterwards or prove to be a suboptimal investment choice after all.

**Ignoring bidding costs and winning probabilities.** Submitting a successful bid requires a considerable investment, and these costs are generally not taken into account when assessing the economic impact of a mega-event. Chicago’s unsuccessful bid for the 2016 Summer

Olympics cost about \$100 million (Zimbalist, 2010). An Australian senator demanded \$48.8 million back from FIFA to compensate the cost of submitting a losing bid for the 2022 World Cup (Reuters, 2011).<sup>6</sup> The probability of not being successful in the bidding process is considerable and should be taken into account as well (De Nooij, 2012). For example, Preuss (2004) reports nine contenders for organizing the 2012 Summer Olympics, assuming bid preparation costs of \$100 million each, this implies that the net present value of organizing should be at least \$900 million to compensate for the large probability of being unsuccessful, that is, assuming risk neutrality and an equal probability of winning among contenders (De Nooij, 2012).

#### **4. Assessing the benefits of a mega sport event**

The benefits of mega sports events are also subject to many complicating issues. This section discusses these issues, ranging from the exaggeration of economic gains to the omission of intangible benefits.

**Additional spending and the multiplier.** To estimate the economic gain from an event in terms of income two steps are crucial. The first step is to estimate the additional spending generated by the event. Only foreign spending is relevant in this respect, because domestic spending on a mega-event will crowd out regular spending, yielding a zero net balance (Coates, 2008).<sup>7</sup> The second step is to estimate the additional income resulting from the event induced spending. The initial surge in spending generates additional spending, at an ever

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<sup>6</sup> It is not likely that these estimated costs of bidding take all expenses into account, including e.g. opportunity costs of public officials investing time in preparing the bid.

<sup>7</sup> In this case, foreign is a relative term depending on the subject. If the economic gains from the Olympics to a city are being estimated foreign spending is all spending originating outside the city.

decreasing pace with each step further back in the supply chain. This multiplier effect is important in determining the size of the additional income generated by the event.<sup>8</sup> The multiplier is frequently set at two, doubling the initial surge in spending (Matheson, 2006; Porter and Chin, 2012). The multiplier can also be abused to generate artificially large income effects (Szymanski, 2002). Hudson (2001) illustrates this in a review of 13 EIAs, arguing that in multiple studies a multiplier is chosen that clearly exaggerates the true income effect.

Another issue regarding the income multiplier are the assumptions underlying it. Most important in this respect is the assumption of availability of idle resources that can be utilized at no additional cost. However, except from times of recession, this will hardly ever be a realistic assumption (Szymanski, 2002; Preuss, 2004). For example, additional spending by foreign tourists will increase the demand for labor, which in turn will drive up wages and propel inflation. The higher wage level will also render certain economic activities no longer profitable. The outcome of this process is a change in the composition, but not necessarily an increase of national income, which is also referred to as the general equilibrium effect.<sup>9</sup>

Although the general equilibrium effect is well-known, it is generally not taken into account. For example, Preuss (2004) assumes underemployment, since most economies face unemployment. This line of reasoning is not valid however, since it ignores the underlying reasons for the existence of unemployment, such as search frictions and efficiency wages, leading to permanent unemployment. Eliminating this form of unemployment is impossible

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<sup>8</sup> See e.g. Crompton (1995), Szymanski (2002) and Matheson (2009) for a critical discussion of the income multiplier.

<sup>9</sup> For a more elaborate discussion see for example Mankiw (2001, chapters 31 and 32)

without wage increases.<sup>10</sup> Baudewyns and Van der Linden (2010) do acknowledge in their EIA of the Belgian bid for the 2018 World Cup that the economic impulse of the event could come at a point where the Belgian economy is already overheated. However, in their calculations they do not account for this.

Among the important sources of economic gain of a mega-event is spending by foreign visitors. However, Matheson (2006) presents evidence indicating that many studies are wildly optimistic regarding the number of potential visitors and their spending patterns. Especially the number of tourist arrivals is frequently overestimated. As Crompton (1995) already noted, controlling for tourists who would have visited anyway ('casuals'), but reschedule their stay in order to be able to visit the event ('time-switchers') is frequently omitted. Furthermore, crowding out, tourists staying away because of a mega-event taking place, can be substantial, because visitors expect congested and chaotic conditions, fully booked accommodations, high prices, and construction nuisance (Matheson, 2006). These factors taken into account, the ultimate number of additional tourists could be very disappointing. In fact, several studies already presented evidence suggesting that mega-events have little net impact on the number of tourist arrivals (see e.g. Coates, 2010b; ETOA, 2008). Examples of disappointing additional tourist arrivals are numerous. New York ultimately welcomed fewer tourists than usual during the month in which it hosted the 1994 World Cup (Baade and Matheson, 2004). Euro 1996 was hosted by England and showed disappointing tourist arrivals. The FA expected 250.000 visitors, but ultimately just 100.000 turned up (Kuper and Szymanski,

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<sup>10</sup>Employment effects are occasionally considered separately as a benefit from hosting a mega event. However, as Preuss (2004) argues, employment effects are another way of expressing the income effect. Counting both income and employment effect is counting one effect twice.

2009). Kim et al (2006) show that the number of international arrivals during the World Cup in South Korea in 2002 actually decreased by 12% relative to the previous year. Maennig and Du Plessis (2007) finds no evidence that the 2006 World Cup generated additional overnight stays in Germany, which implies a crowding-out effect of 100 percent. Preuss et al (2007) show that crowding-out increases with the popularity of a city as a regular tourist destination, to over 100 percent for Munich and Berlin. Du Plessis and Maennig (2010) show that South Africa welcomed a mere 40 to 90.000 additional tourists during the 2010 World Cup. That is, just 3 percent of the 3 million tickets sold translated into additional tourist arrivals.

**Long term growth of tourism.** It is also frequently argued that a mega-event will promote long term growth of the tourism industry, since the host city will be the centre of attention for several weeks, leading to increased awareness and promoting the city's image (Preuss, 2004). This was also an objective of the 2000 Olympic Games in Sydney. However, ex post research does not show a positive long-term impact on tourism (Zimbalist, 2010). To the best of our knowledge there is just one quantitative study regarding this issue apart from anecdotic evidence. Fourie and Santana-Gallego (2011) show by means of a standard gravity model that hosting a mega-event does significantly increase tourist arrivals by a considerable 8 percent. However, if the event takes place during peak-season, as it frequently does, this effect could disappear completely.

**Additional exports.** Another economic effect that is often put forward by proponents of hosting a mega-event is the supposedly beneficial effect it has on exports. Rose and Spiegel (2011) find strong evidence for a large and persistent effect of hosting mega-events on exports and trade. Interestingly, Rose and Spiegel (2011) find that unsuccessful bids have a similar impact on exports. They thus conclude that the effect of hosting a mega-event on

trade is not caused by the economic activity associated with it. Instead, they suggest that submitting a bid is a costly policy signal for future trade liberalization. They also argue that other signals of trade liberalization exist and might be more effective. In addition, there are three puzzling elements to this finding. First, the fact that already liberalized countries frequently submit a bid to host a mega-event suggests that there are other reasons at play outside the policy signal argument. Second, it is rather remarkable that the public is perceptive to such a subtle policy signal, while economists have completely overlooked it thus far. Third, if policy makers would deliberately enter a bidding process in order to send a signal it seems likely that it would turn up as an argument in favor of submitting a bid in the political debate, but as far as we know, this is generally not the case.

**Nation and city branding.** Nation or city branding is frequently mentioned as an underestimated effect of hosting a mega sports event. Being the center of the world for a few weeks and showing the world that you are able to host a successful event will supposedly give the host country's or host city's image a boost. A few examples stand out; the 2006 World Cup in Germany is said to have improved the image of Germany and the Germans considerably. The same is said of the 2010 World Cup in South Africa, sending out a positive message to the world after the isolating days of apartheid. Florek et al. (2008) present evidence supporting this argument. They show, based on interviews and surveys, that the image of Germany improved considerably in the eyes of football fans from New Zealand travelling to the 2006 World Cup. Kim and Morrison (2005) present evidence suggesting a significant image boost for South Korea among foreign tourists following the 2002 World Cup. But despite the empirical evidence supporting the argument that a successful event can improve the image of the host city or country, it remains difficult to express the value of this argument in economic terms directly. Indirect measures of improved image are increased

tourism, exports and investments. There is little empirical evidence demonstrating a long-term economic gain of hosting a mega-event in terms of, for example, growth of the tourism industry (Matheson, 2006; Crompton, 2004; Coates, 2012, p. 408). So including these indirect effects with a modest value seems just.

Zimbalist (2010) concludes based on previous research that the reputation effects are smaller and shorter-lived than often anticipated, adding that under adverse conditions (e.g. bad weather or terrorist acts) the hosts reputation may even be harmed.<sup>11</sup> Coates 2012, p.408 cites a study by Ritchie and Smith (1991) showing that the raised awareness might be small and short lived. Even if hosting a mega-event sometimes does have a beneficial impact on the hosts reputation, like the World Cup 2006 for Germany, the underlying mechanism cannot be carelessly transferred from one event to another, since the reputation effects of an event are by definition highly location-specific, something which is frequently ignored by advocates of hosting an event. Furthermore, a more fundamental question that remains is whether organizing a mega-event is the most cost efficient way to boost the reputation of a city or country and whether it is a public task to engage in hosting a mega-event in order to boost the local economy at the expense of the tax payer (Szymanski, 2002). Coates (2007) argues in this respect that public investments in stadiums are often sizeable to the extent where broadcasting advertorials is most likely a more cost-efficient and effective image enhancing strategy.

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<sup>11</sup> Matheson (2006) refers in this respect to riots in Detroit during the NBA finals, the bribery scandal dominating the news during the 2002 Winter Olympics in Salt Lake City and the terrorist attacks during the Olympic Games of Atlanta and Munich. In addition, Kuper and Szymanski (2009) refer to the Games in Montreal being a financial catastrophe.

**Social Cohesion.** A positive effect of hosting a mega-event that is difficult to monetize is the improvement of social cohesion among the residents of the organizing region. Hosting an event like the World Cup or Olympic Games, and thus being the center of attention for a short time span, can give a considerable boost to the sense of pride and community among residents (Zimbalist, 2010). Crompton (2004) refers to this phenomena in the context of sports teams as the psychic income of sports. Barget and Gouguet (2007) argue that community formation and social ties generally benefit from developing a common plan such as organizing a mega-event. Furthermore, a considerable part of the work in the build-up to and during a mega-event is generally done by volunteers, which also promotes the sense of community and accomplishment (Zimbalist, 2010). These effects are not frequently put forward by proponents of hosting a mega-event, most likely since they are difficult to express in monetary terms and can thus only be stressed in qualitative terms.

**Home advantage.** It is well established in the empirical sports literature that home teams possess an advantage over the visiting opponent in terms of a greater probability of winning (e.g. Courneya and Carron, 1992 or Poulter, 2009). This implies that the home advantage poses a non-financial benefit of organizing a mega-event, both to the public and to the organizing committee who will both positively evaluate a good performance by the home team. However, this effect is difficult to monetize. The home advantage effect usually materializes in two steps. First, participation in the event is generally guaranteed for the organizing country, whereas the other participants have to secure their spot in the final event by successfully competing in a qualifying tournament.<sup>12</sup> This implies that the probability of

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<sup>12</sup> Note that a negative side effect of a participation guarantee is the lack of excitement and suspense regarding matches of the national team in the qualification tournament and the forfeit of ticket revenues for the football association and commercial revenues regarding e.g. TV-commercials surrounding the qualification matches.

winning the event is also higher for the organizing country than for other participants before the qualification tournament kicks off. Second, teams representing organizing countries tend to perform well, frequently even better than expected. These effects are illustrated by some anecdotal football history; 6 out of 19 World Cups are won by the organizing country and 3 out of 14 European Cups.<sup>13</sup> In addition, the United States reaching the round of 16 in the 1994 World Cup was considered a major success as was the unexpected appearance of South-Korea in the semi-finals of the 2002 World Cup. The home advantage might not be a free lunch, for example at Olympic Games the home advantage is often (partially) triggered by extra investments in athletes and their preparation (such as Team GB preparing for the 2012 Olympics in London).

**Stimulating sports participation.** Proponents of organizing a mega sports event frequently claim that the event and the attention that is drawn towards it will foster participation in sporting activities. The increased sports participation will supposedly have numerous beneficial effects, amongst which improved health and well-being of the public accompanied by cost reductions of health care, increased productivity due to reduced absenteeism, an additional consumer surplus of spending on sports related commodities and events and even increased life expectancy (CPB, 2009). A case in point, the Dutch Minister of Sports made this claim during a debate in the parliament defending the support for the 2018 World Cup bid (Tweede Kamer der Staten-Generaal, 2010). However, there is no empirical evidence supporting this claim; a direct link between hosting a mega sports event and a structural increase in sports participation has never been proven to exist (Gratton et al., 2006; Walton et

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<sup>13</sup> Note that particularly in earlier years, the World Cup and European Cup events tended to take place in major football nations and with less participants, which implies that the probability of winning the event by the host was relatively high in any case.

al., 2008). In addition, in order to increase the sporting participation in the long run, it is likely that considerable and costly support programs are necessary. This raises the question whether the success of such supporting schemes ultimately depends on the mega sports event catalyzing them. Furthermore, if the benefits in terms of increased well-being and improved health of the public are tied to the event it seems just to include the costs of the accompanying support programs as well. However, this is not common practice. Kavetsos and Szymanski (2010) argue in this respect that hosting a major sporting event in itself does very little to foster sports participation, which makes further justification of the considerable public spending necessary.

**Happiness.** Since the empirical evidence showing that the economic gains from hosting a mega-event are generally nonexistent, the intangible effects are key in the justification of the ambition to host an event (Kuper and Szymanski, 2009). Feelings of happiness, pride and joy derived from having a mega sports event in the region, or the psychological value to the hosting community, are among the most promising in this respect (Matheson, 2006). Crompton (2004) refers to this as the psychic income received by existing residents. This could emanate from the pleasure derived from attending events, being involved in the event as a volunteer, the option value of having the event hosted nearby and feelings of national pride derived from being the host (Kavetsos and Szymanski, 2010). Valuing such intangible, non-market effects is difficult, but necessary to get a grasp of the true balance of social costs and benefits, since confining the analysis to just tangible costs and benefits will overemphasize their importance. Valuing intangible benefits is typically done by means of the contingent valuation method (CVM), the ultimate aim of which is to infer the willingness-to-pay (WTP) of residents for hosting an event in the region. The underlying assumption to this method is that the willingness-to-pay of an individual is an adequate reflection of the

amount of pleasure he or she derives from hosting the event in the region. A different approach regarding the estimation of the feelings of pride and pleasure derived from hosting a mega sports event was chosen by Kavetsos and Szymanski (2010), who employ data regarding self-reported life satisfaction of citizens of twelve European countries. Their findings suggest that the “feelgood” factor associated with hosting football tournaments is large and significant, although this effect does not seem to be long lasting.

Examples of the application of CVM to hosting mega sports events are numerous.<sup>14</sup> A number of lessons can be learned from this literature. Walton et al. (2008) conclude from their findings that it is likely that the intangible benefits of feelings of fun and pride reach further than just the citizens of the host city. However, this should not be taken for granted. The size of the intangible benefits could be seriously biased if the WTP-analysis is confined just to host cities, while mega-events generally involve considerable sums of public funding, thus implying that the intangible benefits to every taxpayer should be taken into account.<sup>15</sup> Heyne et al. (2007) and Kim (2006) stress that uncertainty regarding the ultimate course of events during the event could cause a considerable deviation between ex ante and ex post estimations of non-market effects. If the event is a success, ex ante estimations will most likely be lower than ex post valuations and vice versa. Furthermore, WTP-estimates will crucially depend on whether it is clear upfront to the respondent that hosting the event will involve costs which are ultimately borne by the taxpayer (Elling and Van der Werff, 2011). Heisey (2009) argues that it is likely that the WTP for an event by residents is not enough to close the gap between the tangible economic benefits and costs. However, this might depend on the event and city in question. For example, in De Nooij et al. (2012) we estimate the

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<sup>14</sup> See e.g. Atkinson et al. (2008) and Walton et al (2008) regarding the 2012 Olympics in London, Heyne et al. (2007) covering the 2006 World Cup in Germany and Heisey (2009) regarding the Olympics.

<sup>15</sup> Note that the direction of the bias depends crucially on the way in which WTP-estimations are generalized.

WTP of Dutch residents for hosting the 2018 World Cup required to make the event socially profitable to average 9 euro. That is, a WTP of 9 euro per Dutchman would close the gap between tangible benefits and costs. This does not seem improbable.

Related to the benefits for the residents who, without attending, value hosting the event, there is also a benefit for the attendees from the hosting region if their willingness to pay for a ticket exceeds the price they have to pay. This consumer surplus is hardly ever mentioned in the literature and less so by proponents of stadium or event subsidies (Coates and Humphreys, 2008, p. 300).

**Other benefits: growth, consumption and tickets.** Enlisting of economic gains which are in reality non-existent, either by reasoning or by proof, occurs on a frequent basis. Examples of this are plenty. First, hosting a mega-event is sometimes claimed to promote economic growth. However, the existence of an effect of hosting an event on economic growth has never been proven empirically (Siegfried and Zimbalist, 2000; Sterken, 2006). And even if it would, double counting seems a serious threat, since the spending or income effects are generally considered separately. Second, for illustrative purposes additional consumption induced by a mega-event is frequently expressed in terms of TV-sets sold, and beer and chips being consumed during matches. However, this does not entail additional consumption which can be tied to hosting the event per se but to it being organized anywhere or to participating in it if you will. Even if consumer expenses of residents could be tied to the event taking place in the region they would not entail additional consumer spending, since they crowd out regular expenses (Matheson, 2002, 2006). Third, benefits that ultimately do not fall to the host are sometimes mistakenly considered a financial gain. For example, PWC (2009) considered ticket proceeds a financial benefit to UK in their analysis of the economic effects

of hosting the 2018 World Cup. However, ticket proceeds are generally claimed by FIFA and are thus not a financial benefit to the host.

**Launching a myriad of arguments.** Proponents of hosting an event tend to launch a myriad of arguments in favor of hosting to the extent where it seems they hope that the sheer amount of arguments presented automatically provides them with substance. However, the sheer number of arguments provided induces skepticism for two reasons. First, a stylized fact from adjacent fields of economic policy is that every policy goal should be attained by a separate policy measure, also known as the Tinbergen rule. However, when it comes to hosting mega-events, it seems customary to employ one instrument (the event) to attain multiple goals. Second, the intangible effects are rarely monetized by proponents. Although intangible effects are inherently difficult to quantify, the preceding discussion showed that monetizing them could even be in the interest of proponents of hosting. However, as the university of Chicago affiliated economist Allen Sanderson phrases it quite bluntly: “Anytime anybody uses the word ‘invaluable,’ they are usually too lazy to measure it or they don’t want to know the answer.” (cited in Matheson, 2006).

## **5. Conclusion and discussion**

This paper discusses the effects of hosting mega sports events. This discussion is triggered by what we call the hosting paradox: proponents of hosting generally employ arguments regarding direct economic gains that do not stand up to the scrutiny of academic research, whereas other, broader economic benefits which could justify hosting are frequently ignored or only used as an ancillary argument. This paper thus evaluates the merits and pitfalls of the set of research methodologies available for assessing the impact of hosting a mega-event, and provides a discussion of the myriad of effects, both in terms of social costs and benefits, of

hosting a mega-event along several dimensions; economic and non-economic, tangible and intangible, frequently put forward in the public debate and generally only considered by scholars. We also discuss potential pitfalls associated with the measurement of these effects. In doing so we go beyond the obvious arguments that are generally used by proponents to ‘sell’ the event to the public. We show that these could provide a useful perspective in the process of taking position in the public debate.

Regarding the research methodologies available for measuring the welfare impact of mega sports events, we argue that the social cost-benefit analysis is the preferred tool. As an alternative, the economic impact analysis has many pitfalls, and even when properly performed, the EIA will not provide useful information regarding the welfare implications of an event. We argue that, given the need for ex ante information in the decision making process prior to submitting a bid, the CBA is a powerful tool to get a grasp of the impact of hosting a mega-event. However, ex post studies also serve an important goal, as an evaluation tool after the event took place, providing an insight in the actual costs and benefits of the event, but also as a source of input for ex ante CBAs.

With respect to the measurement of the true costs of hosting a mega-event we argue that several costs, such as those associated with security, preparations by civil servants, distortionary taxes imposed to publicly finance the event or even the costs of participating in the bidding process, are frequently ignored in the decision process prior to submitting a bid. Furthermore, ex ante estimates of investments in venues and other infrastructural projects pegged to the event tend to be flagrant underestimations of the true costs, leading to persistent cost overruns. Although facilities built to stage a single event frequently turn out to be of little use after the event, in many cases these investments are fully pegged to the event, while they could be of value to society for decades. A critical evaluation of the fraction of investments that should be attributed to the event could thus lead to a considerable cost

reduction of the event and would yield a proper account of the true investment associated with the event.

Many economic gains associated with mega sports events do not stand up to the scrutiny of academic measurement. Spending by foreign visitors, a positive long-term effect on tourism or on sports participation, general health and well-being and a positive impact on exports and economic growth are frequently put forward in the public debate, but yield largely insignificant results when put to the test empirically. In addition, income multipliers are frequently exaggerated and the general equilibrium effect is frequently ignored in the measurement of the economic effects of mega-events. However, empirical evidence suggests that several intangible effects which are more difficult, albeit not impossible, to measure, such as nation branding, feelings of happiness and pride and the improvement of social cohesion among residents and the home advantage for the host country's home team do provide a source of social gain falling to the host.

The critical evaluation of the measurement of the various costs and benefits associated with hosting a mega sports event might evoke the impression that this paper is a plea against bidding to host such events. However, that is certainly not the case. Our main goal is to facilitate the public debate in the sense that we aim to spur a discussion about whether to submit a bid or not based on valid arguments. The ambition to host a mega sports event is perfectly justifiable with various arguments we discussed in detail in this paper. However, the empirical evidence showing that hosting a mega event generally does not yield any financial gains falling to the host economy is quite compelling, implying that the justification for the ambition to host should come from a different, non-economic angle.

## References

- Andreff, W. (2012) The winner's curse: why is the cost of mega sporting events so often underestimated. Chapter 4 in: Andrew S. Zimbalist, Wolfgang Maennig (eds) International Handbook on the Economics of Mega Sporting Events. Edward Elgar Publishing.
- Atkinson, G., Mourato, S., Szymanski, S., and Ozdemiroglu, E. (2008). Are we willing to pay enough to "back the bid?": Valuing the intangible impacts of London's bid to host the 2012 summer Olympic Games, *Urban Studies*, 45(2), 419-444.
- Baade, R.A. & Matheson, V.A. (2004). The Quest for the Cup: Assessing the Economic Impact of the World Cup. *Regional Studies*, 38 (4). 343-354.
- Barget, E. and J-J Gouguet (2007) The Total Economic Value of Sporting Events Theory and Practice. *Journal of Sports Economics*, 8: 165
- Baudewyns, D. and J. van der Linden (2010) Analyse van de macro-economische gevolgen van de organisatie van een FIFA Wereldbeker 2018 in België. Federaal Planbureau. Belgium. Working Paper 8-10
- Brent, R J. (2006) *Applied Cost-Benefit Analysis*. Second Edition. Edward Elgar
- Coates, D. (2007). Stadiums and arenas: economic development or economic redistribution? *Contemporary Economic Policy*, vol. 25(4), pp. 565–77.
- Coates, D. (2008) A Closer Look at Stadium Subsidies. Tuesday, April 29, 2008. The American, the Journal of the American Enterprise Institute. Downloaded december 9th 2010.
- Coates, D. (2010b) World Cup Economics: What Americans Need to Know about a US World Cup Bid

- Coates, D. (2012) Not-so-mega events, Chapter 23 in: A.S. Zimbalist, W. Maennig (eds) International Handbook on the Economics of Mega Sporting Events. Edward Elgar Publishing.
- Coates, D. and B.R. Humphreys (2008). Do Economists Reach a Conclusion on Subsidies for Sports Franchises, Stadiums, and Mega-Events? *Econ Journal Watch*, Volume 5, Number 3, September 2008, pp 294-315.
- Courneya, K.S. and Carron, A.V. (1992). The Home Advantage in Sport Competitions: A Literature Review. *Journal of Sport & Exercise Psychology*, vol. 14, pp. 13-27.
- CPB (2009). Beoordeling rapport Olympisch Plan (concept juni 2008). CPB Notitie 2009/1.
- Crompton, J. (1995). Economic impact analysis of sports facilities and events: eleven sources of misapplication, *Journal of Sport Management*, 9 (1): 14-35.
- Crompton, J. (2004). Beyond Economic Impact: An Alternative Rationale for the Public Subsidy of Major League Sports Facilities, *Journal of Sport Management*, 18 (1): 40-58
- Du Plessis, S. W. Maennig (2009), South Africa 2010: Initial dreams and sobering economic perspectives, in: U. Pillay, R. Tomlinson, O. Bass (Eds.), *Development and dreams. The urban legacy of the football World Cup*. Cape Town: HSRC Press, 55-75.
- Du Plessis, S.A. & Maennig, W. (2010). The 2010 World Cup High-Frequency Data Economics: Effects On International Awareness And (Self-Defeating) Tourism. *Hamburg Contemporary Economic Discussions*, No. 37.
- ETOA (2008). *Inbound Tourists Go Away and Stay Away for the Olympics*. London: ETOA.
- Elling, A., H. van der Werff (2011) *Draagvlakmeting Olympische Spelen 2028*. Uitkomsten van de eerste afname van een gestandaardiseerde draagvlakmeting voor de Olympische Spelen 2028 in Nederland. W.J.H. Mulier Instituut. 's-Hertogenbosch, maart.

- Embassy of Greece (2004). Cost of Athens 2004 Olympics. Press Office. Washington, DC.  
13 November.
- Florek, M., T. Breitbarth and F. Conejo (2008). Mega-event = Mega Impact? Travelling Fans' Experience and Perceptions of the 2006 FIFA World Cup Host Nation. *Journal of Sport & Tourism* 13(3) pp. 199-219.
- Flyvbjerg, B., M.K. Skamris Holm and S.L. Buhl (2002): Underestimating Costs in Public Works Projects - Error or Lie? In: *APA Journal*, Summer, Vol. 68, No. 3, p. 279-295.
- Flyvbjerg, B. (2007) Megaproject policy and planning: problems causes, cures. 16 February. Dissertation. Publisher: Institut for Samfundsudvikling og Planlægning, Aalborg Universitet.
- Flyvbjerg, B., N. Bruzelius, and W. Rothengatter (2003) *Megaprojects and Risk: An Anatomy of Ambition*. Cambridge University Press.
- Fourie, J. & Santana-Gallego, M. (2011). The Impact of Mega-Sport Events on Tourist Arrivals. *Tourism Management*, forthcoming
- Gratton, C., S. Shibli, and R. Coleman (2006) The economic impact of major sports events. *The Sociological Review*. Volume 54, Issue Supplement s2, pages 41–58, December.
- Heisey, K. (2009) Estimating the Intangible Benefits of Hosting the 2016 Olympic and Paralympic Games for Potential Bid Cities: Berlin, Chicago, and San Francisco. PhD thesis. Deutschen Sporthochschule Köln.
- Heyne, M., W. Maennig and B. Süßmuth (2007), *Mega-sporting events as experience goods?* Working Paper Bremen University, University of Technologie Munich and Hamburg University.
- House of Commons Committee of Public Accounts (2008) The budget for the London 2012 Olympic and Paralympic Games. Fourteenth Report of Session 2007–08. April 22.

- Hudson, I. (2001). The use and misuse of economic impact analysis: the case of professional sports, *Journal of Sport and Social Issues*, 25(1), 20-39.
- Kavetsos, G. and S. Szymanski (2010). National well-being and international sports events. *Journal of Economic Psychology*. vol. 31(2), pages 158-171
- Késenne, S.L.J. (2005) Do We Need an Economic Impact Study or a Cost-Benefit Analysis of a Sports Event? *European Sport Management Quarterly*, 5 (2), 133- 42.
- Kim, S.S. and A.M. Morrison (2005). Changes of images of South Korea among foreign tourists after the 2002 FIFA World Cup. *Tourism Management* 26 pp. 233-247.
- Kim, H-J., D. Gursoy, S-B. Lee (2006) The impact of the 2002 World Cup on South Korea: comparisons of pre- and post-games. *Tourism Management* 27. 86-96
- Kuper, S. and S. Szymanski (2009) *Soccernomics*, Nation Books, New York.
- Kuper, S. (2010) South Africa's football lesson. *Financial Times*, October 30. *FT Magazine*, Pg. 7.
- Maennig, W. and S. Du Plessis (2007). *World Cup 2010: South African Economic Perspectives and Policy Challenges Informed by the Experience of Germany 2006*. *Contemporary Economic Policy* 25(4) pp. 578-590.
- Mankiw, N.G. (2001) *Principles of Economics*, second edition, Harcourt College Publishers.
- Matheson, V.A. (2002). Upon Further Review: An Examination of Sporting Event Economic Impact Studies. *The Sport Journal*, 5 (1).
- Matheson, V.A. (2006) *Mega-Events: The effect of the world's biggest sporting events on local, regional, and national economies*. College Of The Holy Cross, Department Of Economics Faculty Research Series, Paper No. 06-10.
- Matheson, V.A. (2009). "Economic Multipliers and Mega-Event Analysis," *International Journal of Sport Finance*, vol. 4(1), pages 63-70, February.

- Nooij, M. de, and C.C. Koopmans (2004) The welfare costs of taxation: the missing costs in cost-benefit analysis? A critical note, SEO discussion paper 27, Amsterdam.
- Nooij, M. de, M.R. van den Berg, C.C. Koopmans (2012) Bread or Games? a Social Cost-Benefit Analysis of the World cup bid of the Netherlands and the Winning Russian bid. *Journal of Sports Economics*. Forthcoming
- Nooij, M. de, (2012). Mega Sports Events: A Probabilistic Social Cost-Benefit Analysis of Bidding for the Games. *Journal of Sports Economics*. Forthcoming.
- Porter, P.K. and D.M. Chin (2012) Economic impact of sports events. Chapter 15 in: A.S. Zimbalist, W. Maennig (eds) *International Handbook on the Economics of Mega Sporting Events*. Edward Elgar Publishing.
- Poulter, D.R. (2009). Home advantage and player nationality in international club football. *Journal of Sports Sciences*, vol. 27(8), pp. 797-805.
- Preuss, H. (2004). *The Economics of Staging the Olympics. A Comparison of the Games 1972-2008*. Cheltenham: Edward Elgar.
- Preuss, H., M. Kurscheidt & N. Schütte (2007) *Wirtschaftliche Wirkungen durch die Besucher der Fussball-WM. Ein Jahr danach - Grosse Studien zur FIFA Fussball-WM 2006*. 6 July.
- PriceWaterhouseCoopers (2009) *England 2018. Potential economic impact of a World Cup in England in 2018*.
- Reuters (2011). Australia senator demands FIFA “refunds” bid money, (<http://www.reuters.com/article/2011/05/30/us-soccer-fifa-australia-idUSTRE74TOLT20110530>, downloaded on Dec. 16<sup>th</sup> 2012).
- Rhoads, C. (2010) *The Newest Wonder of the World: The Ruins of Modern Greece. Facilities Built for Olympics Go Unused; A Preference for Smoking Over Sport?* June 17, 2010. *The Wall Street Journal*. Downloaded December 6th 2010.

- Rose, A. K. and Spiegel, M. M. (2011), The Olympic Effect. *The Economic Journal*, 121: 652-677.
- Siegfried, J. & Zimbalist, A. (2000). The Economics of Sports Facilities and Their Communities. *Journal of Economic Perspectives*, 14 (3). 95-114.
- Sterken, E. (2006). Growth Impact of Major Sporting Events. *European Sport Management Quarterly*, 6 (4). 375-389.
- Szymanski, S. (2002) The Economic Impact of the World Cup. *World Economics*. Vol. 3, No. 1. January–March.
- Teigland, J. (1999). Mega-Events and Impacts on Tourism: The Predictions and Realities of the Lillehammer Olympics. *Impact Assessment and Project Appraisal* 17, 305-317.
- Tweede Kamer der Staten-Generaal (2010) kst-32371-5. Vergaderjaar 2009–2010. Organisatie Wereldkampioenschap voetbal. Nr.5 verslag van een algemeen overleg gehouden op 22 april.
- Walton, H., A. Longo, P. Dawson (2008) A Contingent Valuation of the 2012 London Olympic Games. A Regional Perspective. *Journal of Sports Economics*. Volume 9 Number 3. June. Pp. 304-317
- Zimbalist, A. (2010) Is It Worth It? Hosting the Olympic Games and other mega sporting events is an honor many countries aspire to—but why? *Finance & Development* March 2010, pp 8-11.