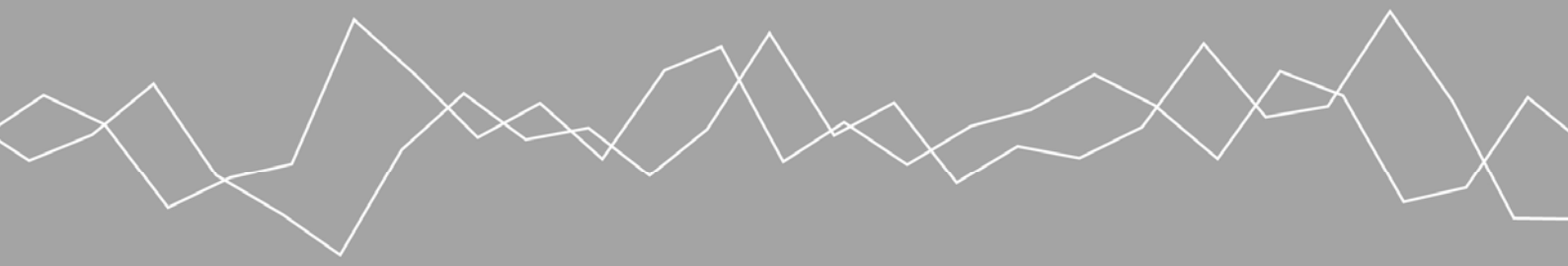
Bread or games? Social cost-benefit analysis of the World Cup in the Netherlands



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Abstract: *Ex post analyses of major sporting events show that the benefits for the organizing countries are often greatly over-estimated in advance. A major portion of the proceeds (e.g., tickets, broadcasting rights, marketing) goes to the organizing sports federation, while most of the costs are borne by the organizing country. Nonetheless, there is fierce competition between candidate countries for the right to organize tournaments like the Olympic Games and the World Cup. We demonstrate this paradox through a social cost-benefit analysis of holding the 2018 World Cup in the Netherlands and Belgium. The results show that national pride and pleasure come at a price. The research also shows that a complete ex ante study is needed to reveal the balance between the organization of a sporting event and the costs that are associated with it.*

[1] This article is based on research commissioned by the Dutch ministry of Economic Affairs prior to the Dutch government's decision to bid jointly with Belgium. As usual, the authors are fully responsible. Corresponding author: SEO Economic Research, Roetersstraat 29, 1018 WB Amsterdam, the Netherlands. Phone: +31 20 525 1662; fax: +31 20 525 1686; e-mail: m.denooij@seo.nl.

Introduction

Several countries, including the United States, England, Spain and Portugal, Russia, and Japan compete to organize the World Cup in 2018 or 2022. One of the arguments a candidate hosting organization may use to get approval from its national government is that hosting a major tournament is economically attractive. Whether hosting the World Cup actually improves welfare is the research question of this paper. We study this for the Netherlands, which want to host the World Cup jointly with Belgium in 2018 or 2022. According to the proponents, this event is will have a positive impact on the image of the Netherlands and contribute to tourism and economic growth. In addition, it is often assumed that the organization of the World Cup contributes to a sense of national pride and that people take pleasure in having the World Cup in their own country. However, organizing this event is not a free lunch; as such an event requires heavy investments in facilities and services (e.g., stadiums and security).

In this study, we investigate the possibility of making an accurate social cost-benefit analysis of major sporting events; we also consider the requirements that such analyses should meet and the conclusions that can be drawn for future events. We do this through a social cost-benefit analysis of holding the World Cup in the Netherlands and Belgium. The results show that the costs exceed the financial benefits. The event does offer a number of non-financial benefits, particularly national pride.

This study deviates from the literature in several respects. To the best of our knowledge, this is the first attempt to use social cost-benefit analysis to chart all of the effects of a major sporting event in advance. This is also the first study to be conducted with the explicit inclusion of governmental costs associated with preparation and security, and it is the first analysis to involve ex ante the effects of crowding-out effects on tourism.

This article begins with a discussion of the academic literature regarding the impact of major sporting events, particularly the 2006 World Cup in Germany (Section 1). This is followed by a social cost-benefit analysis of the World Cup in the Netherlands (Section 2). Section 3 presents a discussion of the investment costs associated with stadiums, and Section 4 considers the costs to the government (security and preparation). Additional

costs are addressed in Section 5, while Section 6 considers the benefits of increased tourism. Section 7 discusses the expenditures of the International Association of Federation Football (FIFA), the media and national teams. Additional benefits are addressed in Section 8. The final section (Section 9) discusses the overall result and conclusion.

1. The economic impact of sporting events

Estimates of the impact of major sporting events differ widely across studies, even for the same event, and the effects found in ex post studies are much smaller than those found in ex ante studies (Matheson, 2006). Matheson (2006) even concludes that ex ante estimates of the benefits of major sporting events are "routinely" exaggerated by factors of up to ten. On the other hand, the costs of infrastructure, facilities, and security are often underestimated, if they are included at all. The same is true with regard to the costs of preparation.

Many ex ante studies predict major employment benefits that are extremely difficult to find afterwards (Kavetsos & Szymanski, 2008). If there are any employment benefits at all, they are likely to be small and temporary, and for unskilled labor in particular (Männig, 2007). For example, Hagn and Männig (2007) find no significant differences in employment between host cities and non-host cities for the 2006 World Cup in Germany.

Matheson (2002, 2006) concludes that six effects are often overestimated or even completely forgotten in ex ante studies: (i) the substitution effect: expenditures related to the tournament are considered extra expenditures, while expenditures that are not related to the event decline; (ii) time-switching: people who attend an event would have come anyway, but at another time; (iii) crowding-out effects with regard to tourists: a portion of regular tourists will avoid cities in which there are already (or are expected to be) many event-related visitors; (iv) leakage effect: many expenditures on or during events do not remain in the local economy but are transferred to the international sports federation or similar entities; (v) the benefits of investments after the event; (vi) not all effects are considered (e.g., traffic congestion, construction-related inconvenience, vandalism, environmental pollution, disruptions of the residents' life). Matheson also states explicitly

that many ex ante studies are conducted or commissioned by parties with an interest in positive outcomes, thus casting doubts on the objectivity and quality of the results.

Another problem is that ex ante and ex post studies often use different methods. For example, ex post studies can draw upon hard data regarding arriving and departing tourists. In contrast, ex ante studies are forced to rely on experiences gained in the organization of previous events. Many ex ante studies adopt an input/output approach, in which the initial surge in spending increases due to a multiplier effect. This can nearly double the estimated impulse. Such multipliers do not consider any tendency towards a general equilibrium, but assume that existing economic relationships will remain constant. This leads to an over-estimation of the welfare effects.

In practice, a surge in spending initially leads to increased production and additional demand for labor, which raises wages. These wage increases cause the price of goods and services to rise, thus decreasing demand. Rising wages also lead to decreases in production and employment in other sectors. Therefore the initial impulse declines until production is at its original level (see Eijgenraam et al., 2000, p. 40). The level of production is (eventually) determined by the available production factors and not by the level of demand or prices. The long-term production changes only if the availability of production factors changes, which is not the case with a surge in spending. A temporary positive effect on economic development does occur, as the production factors are temporarily put to better use. There could be a minor cyclical effect with a temporary increase in employment. Because of the general equilibrium effect, the ultimate effect will be smaller than the initial surge and much smaller than the effects after applying multipliers.

The World Cup in 2006 held in Germany received the most extensive examination in the literature. This event provides a relevant benchmark for a proposed World Cup in the Netherlands and Belgium. Moreover, a survey of existing literature shows that the lessons learned from the 2006 World Cup can be illustrative for other major sporting events (see e.g., Madden & Crowe, 1998; Baade & Matheson, 1999, 2004; Preuss, 2004; Sterken, 2006; Giesecke & Madden, 2007).

In its final report (*Abschlussbericht*, 2006), the federal government of Germany concludes that the World Cup was successful and that the financial results exceeded expectations. This report, however, provides an inaccurate image of the effects of the World Cup on welfare in Germany. For example, the report does not consider the individual states, which bore a considerable proportion of the costs of stadium expansion and security. The analysis of the economic impact on the German commercial sector is incomplete, and non-financial effects are completely ignored.

Kurscheidt et al. (2008) estimate the consumer spending of World Cup tourists at €3.2 billion. These results are based on the survey responses of nearly 10,000 German and international visitors to World Cup matches and fan events. Brenke and Wagner (2007b) criticize this study on a number of points: crowding-out effects are absent, the average stay is improbably long and expenditures are improbably high (on average, a spectator was estimated to spend €3,500, and a fan-event attendee as much as €3,700), and ticket sales were counted as proceeds for Germany, even though they were transferred to FIFA.

Brenke and Wagner (2007a) estimate the expenditures of foreign tourists during the World Cup at €500 million. They estimate the increase in nights lodging in the period of June and July, corrected for the multi-year growth trend, which they multiply with an average daily expenditure per person of €200 (which is relatively high as the authors note).

According to Männig (2007) the positive effects of the World Cup should be sought primarily in non-financial matters, including improvements to Germany's image, positive feelings about the World Cup by the German population, and the fact that Germany now has modern soccer stadiums. Preuss (2007) also lists a number of positive non-financial effects of the 2006 World Cup: improvements to the infrastructure, knowledge accumulation in the hospitality industry and other sectors, the image of Germany as a tourist destination, strengthening the national identity, the emergence of new networks

through cooperation in the organization of the World Cup, and the opportunity for Germany to show its culture to the world.

Ohmann et al. (2007) analyze the social effects on the local population according to interviews with residents in Munich. Local residents were generally positive in their evaluations of the World Cup. The urban development, increased security, the positive behavior of football supporters, and the atmosphere were particularly appreciated. Possible negative effects of sporting events (e.g., crime and disruption to community life) were experienced less intensely.

None of the studies above analyzes all of the costs and benefits. Only partial effects are investigated, and the non-monetary costs and benefits are addressed to a much lesser extent. The estimates of the surge in spending vary widely in quality and robustness. It is therefore difficult to solidify the conclusion that the 2006 World Cup was good for German welfare.

The amounts for FIFA are much clearer. The 2006 World Cup yielded €2.05 billion for FIFA during the period 2003-2006.[2] The broadcasting rights yielded a total of €1.12 billion. The marketing rights yielded €511 million, and other sources yielded an additional €346 million for FIFA. The expenses were considerably lower with €630 million. The greatest expenses were the prize money (€238 million), the contribution to the local organizing committee (LOC; €179 million) and the compensation for the teams (€74 million). Profits for FIFA thus amounted to €1.4 billion.

2. Design of the social cost-benefit analysis of World Cup in the Netherlands

A social cost-benefit analysis aims to chart all of the effects that would influence the welfare of the Netherlands. Effects are defined as the difference between the situation in the counterfactual and that in one of the project alternatives. The counterfactual is that the 2018 and 2022 World Cups will not be organized in the Netherlands (and Belgium),

[2] FIFA Annual Report (2007, p. 18). Exchange rate applied: EUR 1 = CHF 1.573, with cumulative inflation of 12.6% over the period 2006-2010.

but in another European country.[3] In the project alternative, the Netherlands will organize the World Cup with Belgium in either 2018 or 2022.[4] Three sets of estimates were made. The central variant attempts to obtain the most likely estimates. The two other variants delineate the band-width. At one extreme is a favorable scenario, in which the estimated costs are low and the estimated benefits are high. At the other extreme is an unfavorable scenario, in which the estimated costs are high and the estimated benefits are low.

The effects are estimated for each year from 2010 through 2019. These estimates are subsequently discounted to values for 2010 using the reference rate of 5.5%, which is customary for government projects in the Netherlands.[5]

Direct effects are defined as effects on the market in which the Netherlands/Belgium plan makes a primary change. The World Cup involves the market for attending top-level soccer tournaments.[6] The location in which the tournament is offered is changed from other countries to the Netherlands and Belgium. Wider economic effects emerge as the additional production of top-level soccer generates more demand on various other markets, including hospitality, transportation, construction, and employment (see Figure 1). Examples of external effects include the environmental impact of transportation, the impact of the event on the image of the Netherlands, and a sense of national joy and pride.

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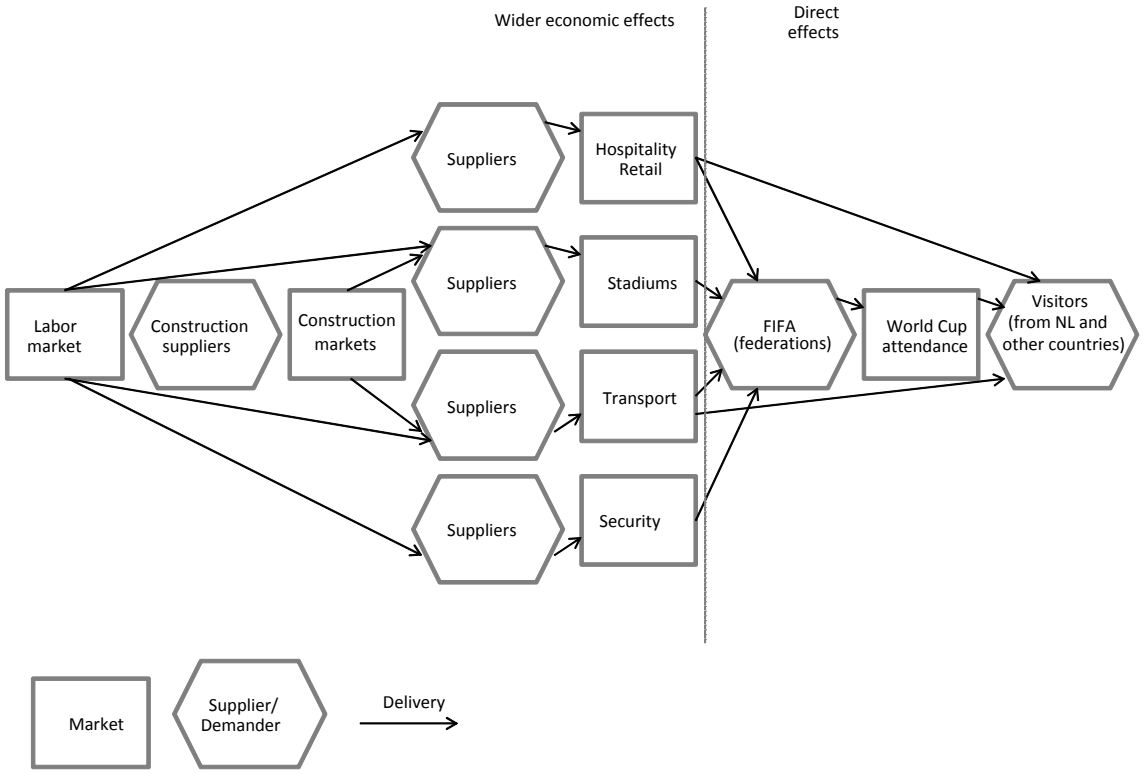
[3] Spain/Portugal, Russia, England, Australia, Indonesia, Japan, and the United States would like to organize the World Cup in 2018 or 2022 as well. Qatar and South Korea have expressed interest in hosting the 2022 World Cup. One of these tournaments is likely to be held in Europe and the other elsewhere.

[4] The bid books for the 2018 and 2022 World Cups are nearly identical. The expected costs and benefits are therefore discounted only over a longer period; this has no consequences for the sign of the outcome, only for the size of the amounts.

[5] Sensitivity analyses show that varying the reference rate has a negligible impact on the outcomes, which is intuitively straightforward, since the discounting period is relatively short.

[6] There is also a market for television broadcasting rights, although this market is affected only slightly by the location of the World Cup.

Figure 1: Direct effects and wider economic effects



This social cost-benefit analysis was conducted in order to answer the following question: Would a World Cup be beneficial to society in the Netherlands? Because the analysis was intended to assess a policy decision in the Netherlands, domestic expenditures were treated differently from impulses from abroad. Domestic expenditures (e.g., expenditures for stadiums, security, and infrastructure) will be compensated by less spending elsewhere in the Dutch economy, either simultaneously or later. Therefore we do not include effects of domestic expenditures on GDP. A surge in spending from abroad (e.g., additional spending by foreign tourists and the expenditures of FIFA), on the other hand, does generate increases in GDP.

Additional expenditures cause additional production through multiplier effects. Using input-output tables, we indicatively compute a multiplier of about 2. However, additional production also implies additional costs of inputs such as labor and materials. If these costs are included in the computation of the multiplier, the result is a value of

about 1. Therefore, we assume that, on balance, the effect on welfare is equal to the surge in spending from abroad.

3. Investments in stadiums and infrastructure

A World Cup usually involves heavy investment in stadiums. For example, Germany invested approximately €1.4 billion in the twelve stadiums used for the 2006 World Cup (Männig, 2007). For the 2008 European Soccer Championships, Austria invested €136 million in the four match venues (Helmenstein & Kleisner, 2008).

The 2018 World Cup will be played in a minimum of ten (and probably twelve) stadiums (FIFA, 2009). The necessary investments for stadiums in the Netherlands are presented in Table 1.

Table 1: Necessary investments in tournament stadiums (x € million)

City	Stadium	Necessary capacity (gross) specified by FIFA	Current capacity	Autonomous development in the counterfactual	Additional seats for the World Cup	Necessary Investments excluding the autonomous development
Amsterdam	Olympic Stadium	45,000	22,000	0	23,000	€22.5
Amsterdam	Amsterdam ArenA	65,000	51,500	3,500	10,000	€80
Rotterdam	The Kuip	45,000	51,500	0	0	€0
Rotterdam	The new Kuip	85,000	0	0	85,000	€600
Eindhoven	Philips Stadium	45,000	35,000	0	10,000	€80
Heerenveen	Abe Lenstra Stadium	45,000	26,000	6,000	13,000	€40
Enschede	De Grolsch Veste	45,000	23,500	9,000	12,500	€40

Source: Estimates by municipalities, in consultation with the stadiums; Netherlands Ministry of Health, Welfare, and Sport (VWS)

The new Kuip in Rotterdam would require the largest investment. This stadium will possibly be realized even without the World Cup, although probably at a different scale and with a different timing. The municipality of Rotterdam expects that its club Feyenoord will need “several hundred million euro” in public financing. Feyenoord expects

that the club will need a subordinated loan from the municipality (Meijer, 2010). The central variant assumes that investments done specifically for the World Cup will only generate benefits half the size of the costs after the tournament.

Table 2 presents the total costs and benefits of stadium investments.

Table 2: Costs and benefits of stadium adaptations (x € million)

Variants	Number of tournament stadiums	Total investments	Profitable share of investment	Unprofitable share of investment	Additional investment without later benefits, incl. margin of uncertainty	Proceeds from re-use of temporary expansions	NPV of the net costs of stadium adaptations
Favorable	5	€720	€340	€380	€285	€6	-€188.6
Probable	5	€800	€380	€420	€420	€6	-€279.8
Unfavorable	7	€862.5	€0	€862.5	€1,293.8	€0	-€873.2

The investment costs are still preliminary estimates. We therefore include a wide margin for additional investments without later benefits (the sixth column in Table 2). In the favorable scenario, the costs are assumed to be 25% lower than in the central (probable) variant; in the unfavorable scenario, they are 50% higher.

Preuss (2004) used data from three Olympic Games to calculate the average distribution of investments over time for major sporting events. This distribution is used here to discount the costs to the base year of 2010 (see the last column in Table 2).

In most cases, major sporting events are accompanied by hundreds of millions of infrastructural investments. For example, in addition to investing €1.4 billion in stadiums, Germany invested €2 billion in infrastructure for the 2006 World Cup (Männig, 2007). It is often not clear whether these investments would have been realized even without the World Cup. In many cases, officials use major sporting events to accelerate projects. Projects that would not otherwise be realized are likely to have more costs than benefits. In the probable and favorable scenarios zero net cost of infrastructure investments were included. In the unfavorable scenario, additional investments are included as a negative non-monetized item.

4. Costs for the government: Security and preparation

Security is one of the most important cost items involved in a World Cup, yet it is often underestimated or not estimated at all. Security within the stadiums is the responsibility of the organizing committee, which must also bear the costs. Security in the public domain, however, is a task for the government, and particularly for the police.

Police services for a World Cup come at the expense of regular police services (opportunity costs). The costs to welfare are equal to the lost benefits of regular police work. To assign a monetary value to these costs, we assume that the level of police services in the Netherlands is such that, on the margin, the costs to society for these services are equal to their benefits. The reduction in regular police services can thus be valued in terms of the hourly costs of police services. Security for a World Cup in the Netherlands is likely to be provided through an approach resembling that taken during the World Cup in Germany, adjusted to new developments and insights. The total security costs for the 2006 World Cup are not known, as security was arranged at state level. During the World Cup, police officers in Berlin worked a total of 230,000 hours of overtime (Brenke & Wagner, 2007a). We assume that the number of hours of regular police services displaced is equal to the number of hours of overtime worked. One hour of police services costs about €100, bringing the cost of police services in Berlin to €46 million. Extrapolated to the entire World Cup, the costs were €491 million. The police in Hessen (Nedela, 2007) reported that the costs of providing services during the World Cup were €16 million for overtime and support. Once again equating the displacement of one hour of regular police services with one hour of overtime and extrapolating to the entire event, the costs for Germany as a whole were €427 million.[7]

The average of these two estimates seems a probable estimate for the security costs in the probable scenario. Corrected for inflation, this amounts to €496 million. This corresponds to the estimate of an expert in the Netherlands Ministry of the Interior and a

[7] The two reports cited here were the most detailed. Calculations based on alternative newspaper reports were surrounded by more uncertainty and thus showed major variations.

Belgian colleague: €400 to €600 million. Discounted to 2010, we arrive at a figure of €153.3 million for the Netherlands. This estimate contains considerable uncertainty. We therefore assume 50% lower costs in the favorable scenario and 100% higher costs in the unfavorable scenario.

The largest investment of time is likely to be required of the cities in which the event venues are located, although a number of ministries and the police are likely to spend considerable time in the preparations as well. This effect is neither described nor estimated in the literature. Municipal officials in the Netherlands estimate that, at the start of the preparations, one FTE in each city with a tournament stadium will be devoted to preparations, increasing to nearly seven FTEs in 2018. Police services during the preparations range from one FTE in 2010 to nearly five in 2018. Officials from the Netherlands Ministry of the Interior estimate the services of government officials to range from five FTEs in 2010 to more than fifteen in 2018. The concluding tasks following a World Cup require time as well. We assumed one FTE to cost approximately €100,000 (including overhead costs).

It is also necessary to consider the operational side, including such matters as the organization of fan events, and additional cleaning, sanitation, and beautification of the city. In 2006, Stuttgart incurred €5 million in costs for fan events (Stadionwelt, 2006). The costs of fan events for matches played in the Netherlands would thus be €30 million. Because other costs are involved as well (e.g. city dressing), we have increased this estimate by 50% to €45 million. As with the costs involved in stadium construction, we apply a margin of uncertainty based on 25% lower costs in the favorable scenario and 50% higher costs in the unfavorable scenario.

Table 3: Total costs of government services (x € million)

	NCW	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Favorable	€35.8	€1.0	€1.1	€1.3	€1.5	€1.8	€2.1	€2.8	€3.6	€38.5	€1.0
Probable	€42.7	€1.0	€1.1	€1.3	€1.5	€1.8	€2.1	€2.8	€3.6	€49.8	€1.0
Unfavorable	€65.0	€1.7	€1.8	€2.1	€2.5	€3.0	€3.5	€4.6	€6.0	€73.0	€1.7

5. Other costs

Tax exemption for FIFA: FIFA requests organizing countries to extend a tax exemption for all of its activities. The only tax income that is important for the social cost-benefit analysis is that which the government must forego because the World Cup is held in the Netherlands and which it would have received if that had not been the case. The taxes that the Dutch government would forego on the temporary FIFA offices, the broadcasting rights, and ticket sales are thus negligible. The tax exemptions for hotel rooms rented through FIFA, however, are not because these rooms would have yielded tax benefits in the counterfactual without a World Cup in the Netherlands. FIFA claims 60,000 rooms for itself, the media, and sponsors. Of these rooms, 55% would be in the Netherlands. Assuming a tax percentage of 20% (VAT and tourist tax) and an average room price of €100 per night, the costs of the tax exemption amount to €23.1 million. While no foregone tax income is considered in the favorable scenario, foregone taxes are estimated twice as high in the unfavorable scenario.

Investments in hotel capacity: Investments in hotel capacity are private decisions, which occur only if the benefits are at least equal to the costs. The net costs can therefore be set at zero.

Hooliganism and vandalism: Soccer tournaments are accompanied by a risk of riots, vandalism, and hooliganism. For example, there were riots surrounding the match between Germany and England during the Euro 2000 in Charleroi.[8] The chance of riots is small and depends in part on the actual playing schedule. No serious disturbances have occurred in connection with recent soccer tournaments. For this reason, no costs associated with hooliganism or vandalism have been calculated into the favorable and probable scenario. In the unfavorable scenario, we assume that one match in the Netherlands will result in problems with material damages in the amount of €10 million (discounted to 2010: €6.3 million; based on Dutch expierence).

Disruptions in public life and traffic congestion: In the periods surrounding matches, it will be necessary to transport tens of thousands of supporters through the city to and

[8] The European Soccer Championships in the year 2000 are generally referred to as EURO 2000.

from the stadium. A large proportion of these supporters will attend fan events. Host cities are therefore likely to experience traffic obstruction and disruptions to normal public life (see also Matheson, 2006). We include this as a negative non-monetized item.

6. Benefits of increased tourism

One of the most important effects of a World Cup is that soccer tourists travel to the organizing country. These tourists spend money on such items as lodging, transport, food and beverages, and merchandise.

Table 4 shows each step in the calculation of the surge in spending by foreign spectators. For the 32 matches in the Netherlands, 1.6 million tickets will be available. World Cup matches are usually (nearly) sold out. In the probable and the favorable scenarios, we assume full occupancy. In the unfavorable scenario, we assume disappointing ticket sales and 85% occupancy. During the 2006 World Cup, the average spectator had 2.2 tickets (Kurscheidt et al., 2008). We apply this assumption in the most probable scenario. In the unfavorable scenario, we assume an average of 3 tickets per person and in the favorable scenario, 1.5 tickets per person.

During Euro 2000, 32% of the tickets were purchased by Dutch and Belgian supporters (Oldenboom et al., 2002). In the Netherlands, the percentage was somewhat higher. During the World Cup, there would be many matches between countries that are far away from the Netherlands, and considerably fewer fans are likely to travel from these countries than during a European Championship. We therefore assume a slightly higher percentage (40%) of Dutch supporters. In the favorable scenario, we assume 35%, as during Euro 2000. In the unfavorable scenario, Dutch spectators purchase half of the tickets.

Tourists that would have come to the Netherlands even without the World Cup ("casuals") contribute no additional spending and should thus not be considered, and the same applies for tourists who plan their stay during the World Cup but who would have otherwise visited the Netherlands at another time ("time-switchers"). The correction for this situation is based on Preuss et al. (2007). Another group of tourists will extend their

stay in the Netherlands because of the World Cup, in order to attend a match or a fan event. This group can be considered only in terms of the extension of their stay (assuming that the extension equals 50% of the total stay).

On average, one of every eight World Cup spectators brings along a companion who does not attend any World Cup events, but who would not have come without the World Cup (Helmenstein & Kleissner, 2008). This is known as crowding-in. This taken into account, the number of additional visitors to the Netherlands is estimated at 121 thousand, 233 thousand, and 371 thousand in the respective analytical scenarios.

A foreign visitor is likely to spend the night before and the night after a match in the Netherlands. Studies by Helmenstein et al. (2007) and by Oldenboom et al. (2002) report stays of one or two nights per ticket. In the unfavorable and probable scenarios, therefore, we assume two nights per ticket, and we assume three nights per ticket in the favorable scenario. Oldenboom et al. (2002) assume average spending of €125 per person per day. In the probable scenario, therefore, we take €150 as a starting point, including correction for inflation. In the unfavorable scenario, we assume €100 per day (e.g., if many people stay in campgrounds or with relatives and friends, this would decrease average spending). The arrival of many World Cup business travelers would increase the average daily spending to an assumed €200 per day, as reflected in the favorable scenario.
The bottom line of Table 4 shows the additional spending of foreign spectators for each of the project scenarios. The amounts range from €72.7 million (unfavorable) through €153.9 million (probable) to €333.5 million (favorable).

Table 4: Expenditures of additional foreign World Cup spectators in the Netherlands

	Unfavorable	Probable	Favorable
Total number of tickets sold	1,360,000	1,600,000	1,600,000
Number of tickets per person	3.0	2.2	1.5
Number of spectators	453,333	727,273	1,066,667
% Dutch spectators	50%	40%	35%
Number of foreign spectators	226,667	436,364	693,333
% Casuals	20%	20%	20%
% Time-switchers	25%	25%	25%
% Extenders	15%	15%	15%
% Average extension by spectators extending their stay	50%	50%	50%
Number of additional foreign spectators	107,667	207,273	329,333
Crowding-in	12.5%	12.5%	12.5%
Number of additional foreign spectators	121,125	233,182	370,500
Stay (in days) per ticket	2.0	2.0	3.0
Average duration of stay	6.0	4.4	4.5
Expenditures per day (excl. ticket and travel)	€100	€150	€200
Additional expenses	€72.7	€153.9	€333.5

Foreign spectators and fan events

The reasoning for fan-event attendees is comparable to that used for spectators at World Cup matches. These calculations are presented in Table 5. The estimated number of fan-event attendees is roughly four times the number of spectators attending matches (Preuss et al., 2007). We apply this assumption in the three scenarios, bringing the number of fan-event attendees to 1.8 million (unfavorable), 2.9 million (probable), and 4.3 million (favorable). Roughly 80% of the fan-event attendees during the 2006 World Cup were German (Preuss et al., 2007). We include this percentage in the probable scenario.[9] In the unfavorable (favorable) scenario, we assume that 90% (70%) of all fan-event attendees will be from the Netherlands.

[9] Germany is larger, and the travel distance for foreign visitors to fan events was thus greater than it would be in the Netherlands. This argues for a lower percentage for the Netherlands. On the other hand, the fact that people in the Netherlands are internationally known for their extremely fanatic attendance at fan events would argue for a higher percentage in the Netherlands.

The estimated number of additional visitors for the organizing country is based on Preuss et al. (2007), and it does not vary between the scenarios. As with the spectators, we assume that tourists who extend their stay because of the World Cup will increase the total number of nights by 50%. There is no specific information available regarding length of stay and daily spending in relation to fan events. We therefore assume them to be equal to those of spectators. Crowding-in is unlikely among fan-event attendees. As shown in Table 5, additional spending by foreign fan-event attendees is €46.2 million (unfavorable), €163.2 million (probable), and €489.6 million (favorable).

Table 5 Expenditures of additional foreign fan-event attendees in the Netherlands (x million)

	Unfavorable	Probable	Favorable
Number of fan-event attendees without stadium tickets	1,813,333	2,909,091	4,266,667
% Dutch attendees	90%	80%	70%
Number of foreign attendees	181,333	581,818	1,280,000
% Casuals	30%	30%	30%
% Time-switchers	20%	20%	20%
% Extenders	15%	15%	15%
% Average extension by attendees extending their stay	50%	50%	50%
Number of additional foreign fan-event attendees	77,067	247,273	544,000
Average duration of stay	6.0	4.4	4.5
Expenditures per day (excl. travel)	€100	€150	€200
Additional expenditures	€46.2	€163.2	€489.6

Dutch spectators

If Belgium and the Netherlands organize the World Cup, many Dutch people are likely to attend at least one of the matches. A portion of these people would have done so even if the World Cup took place elsewhere. This generates two positive welfare effects. The first is that spending by these supporters stays in the Netherlands rather than taking place abroad, thus amounting to a surge in spending in the Netherlands. Second, these supporters save money on travel costs. Dutch spectators who would attend the World Cup only if it took place in their own country yield no additional benefits for the Netherlands. This is because the money that they spend replaces other expenditures. The

money that they spend on World Cup tickets is a welfare cost, as the proceeds from ticket sales go to FIFA in Switzerland. Without the World Cup, these expenditures would have remained in the Netherlands.

Table 6 shows the calculations for additional spending and avoided travel costs. In the probable scenario, 291,000 Dutch people attend World Cup matches (calculated according to Table 6). In the favorable (unfavorable) scenario, this number is 373,000 (227,000). During the 2006 World Cup, 10% of the German spectators said that they would have attended the match even if had been held abroad (Preuss et al., 2007). Based on this result, additional spending in the Netherlands is estimated at €13.6 million in the unfavorable scenario, €19.2 million in the probable scenario, and €33.6 million in the favorable scenario. The savings in travel costs are estimated at €200 per person, based on the assumption that the World Cup in the counterfactual is held in Europe. The total travel costs avoided are thus estimated at €4.5 million (unfavorable), €5.8 million (probable), and €7.5 million (favorable).

Table 6 Costs and benefits for Dutch spectators

	Unfavorable	Probable	Favorable
Dutch spectators	226,667	290,909	373,333
% Remaining at home	10%	10%	10%
Dutch people who would otherwise have gone abroad	22,667	29,091	37,333
Average stay	6.0	4.4	4.5
Spending per day	€100	€150	€200
Spending that would otherwise taken place abroad	€13.6	€19.2	€33.6
Avoided travel costs per person	€200	€200	€200
Travel costs avoided by Dutch spectators	€4.5	€5.8	€7.5
Average ticket price	€130	€130	€130
Leakage of tickets for Dutch people who would not attend a World Cup elsewhere	-€79.5	-€74.8	-€65.5

For the remaining 90% of the Dutch supporters who would not attend a match if the World Cup were held in another country, proceeds from ticket sales leak out to FIFA. The average ticket price during the 2006 World Cup exceeded €120. Corrected for infla-

tion to 2010, we assume €130. The costs of this leakage are thus estimated at €79.5 million (unfavorable), €74.8 million (probable), and €65.5 million (favorable).

Dutch fan-event attendees

Fan-event attendees remaining in the Netherlands are estimated in the same way (Table 7). In the probable scenario, extra spending in the Netherlands is estimated at €153.6 million, with €46.5 million in avoided travel costs.

Table 7: Additional spending and avoided travel costs for Dutch fan-event attendees

	Unfavorable	Probable	Favorable
Dutch fan-event attendees	1,632,000	2,327,273	2,986,667
% Remaining at home	10%	10%	10%
Dutch people who would have otherwise gone abroad	163,200	232,727	298,667
Average stay	6.0	4.4	4.5
Spending per day	€100	€150	€200
Spending that would otherwise have taken place abroad	€97.9	€153.6	€268.8
Avoided travel costs per person	€200	€200	€200
Travel costs avoided by Dutch fan-event attendees	€32.6	€46.5	€59.7

Crowding-out: In the past, regular tourists have stayed away in the period leading up to, during, and after major sporting events, as they expect busy and chaotic conditions, fully booked accommodations, high prices, and construction. The literature emphasizes the importance of crowding-out in determining the economic impact of a major sporting event, although the evidence consists only of case analyses.

Crowding-out was observed during the Olympic Games in Athens (Brenke & Wagner, 2007a), the World Cups in 2002 (Matheson, 2006) and 2006 (Männig, 2007), and the European Championship in 2004 (Brenke en Wagner, 2007a). New York ultimately had fewer tourists than usual during the month in which it hosted the World Cup (Baade & Matheson, 2004). It is not clear whether the tourists who stayed away eventually came at another time (this is known as time-switching). The European Tour Operators Association (2006a, 2006b, 2008, 2009) reports that there was substantial crowding-out due

to mega-sporting events during the Olympic Games in Sydney, Athens, Beijing, and Barcelona. Männig (2007) finds no evidence that the 2006 World Cup generated additional overnight stays in Germany, which implies a crowding-out effect of 100%. Preuss et al. (2007) show that crowding-out increases with the normal popularity of a destination to even more than 100% for Munich and Berlin. Because Amsterdam is usually a more important tourist destination than Berlin, crowding-out is likely to be considerable. The occupancy rate in Amsterdam is usually high under normal conditions, making crowding-out highly likely. A World Cup match held in the Amsterdam ArenA would attract 60,000 spectators (plus additional fan-event visitors), 36,000 of whom would be from other countries. To accommodate these guests, 18,000 two-person rooms are needed. In 2006, Amsterdam had 18,000 hotel rooms (Gemeente Amsterdam, 2008), with an average occupancy rate of 77%. This means that there is usually an average of 4,000 hotel rooms available.

For this reason, we assume a displacement percentage of 75% in the probable scenario. In the unfavorable scenario, we assume complete displacement, and in the favorable scenario, we assume displacement of 50%. We further assume that the spending patterns of regular tourists are comparable to those of World Cup tourists. The displaced expenditures are thus estimated at €118.9 million in the unfavorable scenario, €237.8 million in the probable scenario, and €411.5 million in the favorable scenario (see Table 8). The displaced expenditures are highest in the favorable scenario, as it assumes many more World Cup tourists, who could scare away regular tourists.

Table 8 Displaced spending due to crowding-out (x million)

	Unfavorable	Probable	Favorable
Additional nights of lodging by foreign visitors (stadiums and fan events)	1,189,150	2,114,000	4,115,250
Foreign tourists displaced (%)	100%	75%	50%
Not-realized nights of lodging	1,189,150	1,585,500	2,057,625
Spending per day	€100	€150	€200
Not-realized spending due to crowding-out	-€118.9	-€237.8	-€411.5

A World Cup, European Soccer Championship, or the Olympic Games can enhance a country's international image and name-recognition. The actual level of image-change

depends on many factors. What was the country's image before the event? How did the event proceed? What actions were taken to improve the image? The Netherlands is known as an open, tolerant, and hospitable country that enjoys celebrating during a soccer tournament. In this regard, there is little for the Netherlands to gain by hosting a World Cup. A World Cup could reinforce this image, however, subject to a number of conditions. Due to crowding-out, there would be less word-of-mouth advertising, as soccer fans are less likely to be interested in the country than "regular" tourists are. Moreover, the European Tour Operators Association reports in the previously mentioned literature that tourism grows less quickly in cities in which mega-sporting events have taken place than it does in comparable cities that have not hosted such events. In light of this strongly negative information, we include the long-term effects on tourism as a negative non-monetized item.

Total

All of the costs and benefits of tourism are brought together in Table 9. The most probable scenario has a positive balance of €141.8 million, in addition to a negative non-monetized item. The greatest benefits are derived from fan-event attendees, together amounting to approximately €195 million. The displacement of regular tourists who are scared away by the World Cup would generate not-realized spending of €146.9 million.

Table 9 Net benefits of tourism

	Unfavorable	Probable	Favorable
Additional spending by foreign spectators	€44.9	€95.1	€205.9
Additional spending by foreign fan-event attendees	€28.6	€100.8	€302.4
Crowding-out of "regular" foreign tourists	-€73.4	-€146.9	-€254.2
Additional spending by Dutch spectators remaining at home	€8.4	€11.9	€20.8
Additional spending by Dutch fan-event attendees remaining at home	€60.5	€94.9	€166.0
Travel costs avoided by spectators remaining at home	€2.8	€3.6	€4.6
Travel costs avoided by fan-event attendees remaining at home	€20.2	€28.7	€36.9
Leakage of tickets for Dutch people who would not attend a World Cup elsewhere	-€49.1	-€46.2	-€40.4
Crowding-out of Dutch World-Cup refugees	€0	€0	€0
Long-term development of tourism in the Netherlands due to World-Cup related image improvements	- (n.m.)	- (n.m.)	- (n.m.)
Net proceeds from tourism	€42.7 - (n.m.)	€141.8 - (n.m.)	€442.0 - (n.m.)

n.m.= not monetized

7. Spending by FIFA, media and national teams

Expenditures by the organizing committee and FIFA: Presumably, FIFA makes $400 million available to the local organizing committee (LOC) to cover such expenses as stadium rental, operations, and personnel. Stadium rental and operational costs are likely to be divided equally between the Netherlands and Belgium. The organizing committee will probably be situated in the Netherlands. For this reason, and based on experiences with Euro 2000, 60% of the committee's expenditures are likely to be made in the Netherlands (€170 million in 2018, discounted to 2010, €105.1 million). With each World Cup, FIFA spends more (FIFA 2007, 2008). Because the majority of this spending is already included in the LOC budget, no additional expenditures have been calculated into the probable scenario. Because of the uncertainty regarding additional expenses, the favorable scenario includes an uncertainty margin of +50%, and the unfavorable scenario includes an uncertainty margin of -25%.

Lodging for national teams: Thirty-two countries participate in the World Cup. Participants from these countries would stay in the Netherlands and Belgium for some time during the preparations and the actual tournament. During the 2006 World Cup in Germany, a national team spent more than €149,000 per day (in 2010 currency) on lodging. For the 2008 European Championship, lodging costs for this team were €170,000 per day. We use the average of these two amounts to estimate the daily costs for a national team: €159,000.

Participating teams are required to be present at least five days before the tournament begins. After they have been eliminated, teams will usually stay one more night before returning home. As shown in Table 10, according to the playing schedule of the 2006 World Cup, all of the national teams together would spend 726 days in the Netherlands and Belgium, representing total lodging costs of €115.8 million. Half of this amount (€57.9 million) would be spent in the Netherlands. In the unfavorable scenario, we estimate the proceeds to be 25% lower, and in the favorable scenario, we estimate them to be 50% higher.

Table 10: Lodging costs for national teams (x € million)

Number of teams	Extending to	Number of days	Total days	Total lodging costs
16	Group stage	19	304	€48.5
8	Round of 16	23	184	€29.3
4	Quarter-finals	27	108	€17.2
2	Semi-finals	31	62	€9.9
2	Final	34	68	€10.8
		Total	726	€115.8
			in the Netherlands	€57.9

Media lodging: During the 2008 European Soccer Championship, an estimated 12,000 media representatives were present in Austria and Switzerland (Helmenstein et al., 2007). This translates to 750 reporters for each participating team. During a World Cup with 32 participating teams, there would be an estimated 24,000 media reporters, half of whom (12,000) would stay in the Netherlands. Oldenboom et al. (2002) report that the large majority of the media remain until their own national team has been eliminated. According to the information in Table 10, reporters would stay a total of 544,500 days

in the Netherlands and Belgium during the World Cup. For the various project scenarios, we estimate the average daily spending at €150, €200, and €250 in the respective scenarios (these estimates are slightly higher than the average daily spending per fan). Discounted to 2010, this amounts to additional proceeds in the Netherlands of €25.2 million (unfavorable), €33.6 million (probable), and €42.0 million (unfavorable).

Lodging and expenditures of sponsors and partners: The lodging of sponsors and partners during the World Cup has already been figured into the regular streams of tourists and the budgets of the organizing committee and the soccer associations of the participating national teams.

In addition, sponsors will engage in a number of activities during a World Cup. According to their own estimates, the twelve partners/sponsors of FIFA would spend between €60 and €120 million on advertising, promotion, PR, and hospitality during the World Cup. For the Netherlands, half of the middle estimate is included (discounted to €27.8 million) in the probable scenario. Twice this amount was included in the favorable scenario, and half is included in the unfavorable scenario.

8. Other benefits

Retail spending: Television sales reach a peak with each tournament. Sales of beer, snacks, and convenience foods also increase during a tournament. This surge in spending doesn't generate a positive welfare effect if the Netherlands were to organize the World Cup. This surge in spending would also occur if the World Cup takes place elsewhere. Moreover, these expenditures represent a shift in spending over time or between categories.

Economic growth: According to some reports, a major sporting event can improve name-recognition and reputation, thus increasing trade and thereby economic growth. The literature, however, finds no positive association (see e.g., Sterken, 2006; Baade & Matheson, 2006; Siegfried & Zimbalist, 2000; and Rose & Spiegel, 2009).

Employment effects: No benefits related to employment are included in the analysis. Additional turnover is produced by extra employees. However, the employment effects are small and temporary (Männig, 2007), and the additional value-added has already been counted. Counting the additional employment would thus generate a double count.

Appreciation for the World Cup in the area: The joint bid for the 2018 World Cup by the Netherlands and Belgium increases the chance that the tournament will be organized in the Central-European time zone. This makes it easier to follow the World Cup on television. We include this as a positive non-monetized item. The scope of this benefit, however, is presumably minimal, as the World Cup would most probably be organized in another European country (in the same time zone) if the bid by the Netherlands and Belgium was not successful.

National pride, solidarity, happiness, joy, and harmony: A successful World Cup and the associated brief but global attention can generate feelings of joy, pride, and happiness among the population, as well as a reinforced sense of national identity (see e.g., Oldenboom, 2006; Heyne, Männig & Süssmuth, 2007; Ohmann, Jones & Wilkes, 2007; Kavetsos & Szymanski, 2008; and Atkinson et al., 2008). Although extensive literature has been written on this subject, however, often without quantification. Quantification is difficult and the few estimates available vary widely (which might depend on the methods used, or the countries surveyed). This effect has been included as a positive non-monetized item.

Effect on sports achievements: The organization of a World Cup guarantees participation and provides a home-court advantage. Four of the 15 World Cups that have been held since 1950 were won by the host country. Because of the difficulties associated with quantifying and attaching a value to these effects, they have been included as a positive non-monetized item.

Effect on participation in sports: It is often argued that a World Cup inspires people to participate in sports, thus making them healthier. Such profit in terms of health would represent an increase in welfare and would generate savings in health care. For this rea-

son, special projects that are *related* to the World Cup are needed. The number of people who start participating in sports and the level of health improvement that these projects generate is extremely unclear. Whether the World Cup is necessary for such projects and what their costs and benefits are is not known. No concrete plans were known at the time the bid was submitted. In the unfavorable scenario, we include a negative non-monetized item (the costs exceed the benefits). In the favorable scenario, we include a positive non-monetized item. In the probable scenario, the sign is not known.

Effect on the Olympic Games: A well-organized World Cup might increase the chance that the Netherlands will be selected to organize the Olympic Games in 2028. Whether this relationship actually exists is unclear, as is the question of whether it would be favorable to organize the Olympic Games. In the unfavorable (favorable) scenario, therefore, a negative (positive) non-monetized item has been included, while a non-monetized item with an unknown sign has been included in the probable scenario.

Environmental effects: In the unfavorable and probable scenarios, we have included the environmental effects as a negative non-monetized item, given that there would be a greater environmental burden if the World Cup were to be organized in the Netherlands and Belgium than there would be if it took place elsewhere. A positive non-monetized item has been included in the favorable scenario, as the World Cup could well serve as a catalyst for green and sustainable innovation because the organization strives to achieve a green World Cup.

9. Conclusion

All of the costs and benefits have been brought together in Table 11. In the probable scenario, the expected costs of the effects that can be expressed in monetary terms exceed the benefits of these effects. The balance of costs and benefits (excluding non-monetized items) amounts to €154.8 million negative. In the unfavorable scenario, which assumes that the costs are higher than planned and the benefits are lower, this balance is obviously even more negative: €-1.1 billion. The favorable scenario produces a positive balance of €403.7 million for effects that can be expressed in monetary terms.

The favorable scenario assumes costs that are lower than expected and benefits that prove greater than expected.

Table 11: Balance of costs and benefits of holding the 2018 World Cup in the Netherlands (NPV, x € million)

	Unfavorable	Probable	Favorable
Costs			
Net costs of stadium adaptations	-€873.2	-€279.8	-€188.6
Net costs of infrastructural adaptations	- (n.m.)	€0	€0
Net costs of investments in hotel capacity	€0	€0	€0
Costs of preparation for the government	-€65.0	-€42.7	-€35.8
Costs of security for the government	-€306.7	-€153.3	-€76.7
Costs related to hooligans and vandalism	-€6.2	€0	€0
Disruptions to public life and traffic congestion	- (n.m.)	- (n.m.)	- (n.m.)
Total costs	*-€1,251.0 - (n.m.)*	*-€475.8 - (n.m.)*	*-€301.1- (n.m.)*
Benefits			
Organizing-committee costs and FIFA expenditures	€78.8	€105.1	€157.7
Proceeds from team lodging	€26.8	€35.7	€53.6
Proceeds from media lodging	€25.2	€33.6	€42.0
Proceeds from lodging and additional expenditures of sponsors	€13.9	€27.8	€55.6
Tax exemption for FIFA	€0	-€23.1	-€46.2
Net proceeds from tourism	€42.7 - (n.m.)	€141.8 - (n.m.)	€442.0 - (n.m.)
Benefits for "television supporters"	+ (n.m.)	+ (n.m.)	+ (n.m.)
National pride, solidarity, happiness, and identity	+ (n.m.)	+ (n.m.)	+ (n.m.)
Effect on World Cup participation	+ (n.m.)	+ (n.m.)	+ (n.m.)
Retail spending	≈0	≈0	≈0
Effect on employment opportunities	≈0	≈0	≈0
Effect on participation in sports	- (n.m.)	?	+ (n.m.)
Effect on selection as host of the Olympic Games	- (n.m.)	?	+ (n.m.)
Effect on trade	≈0	≈0	≈0
Environmental effects	- (n.m.)	- (n.m.)	+ (n.m.)
Total benefits	*€187.5*	*€321.0*	*€704.8*
Balance of costs and benefits *	***-€1,063.4 –***	***-€154.8 –***	***€403.7 –***

n.m.= not monetized

* Assuming a favorable level of costs and an unfavorable level of benefits in the unfavorable scenario and vice versa in the favorable scenario

Against this negative balance of the effects that can be expressed in monetary terms in the probable scenario stands a number of effects that are difficult to express in monetary terms. The positive benefits apply primarily to the greater perceived utility of television supporters if the World Cup is played in their own time zone, a sense of national pride, harmony, and national identity, guaranteed participation of the Netherlands in the World Cup and the greater chance of success as a result of the home advantage. In addition, benefits to which no value has yet been assigned could arise within the favorable scenario through effects on participation in sports, the chance of hosting the Olympic Games, and spin-off innovations in the area of sustainability. At the same time, a number of negative effects to which no value has yet been assigned could occur, including the disruption of public life, traffic congestion, environmental effects, and a possible negative long-term effect on tourism.

The most important conclusion is that the financial-economic benefits of a World Cup in the Netherlands do not stand up against the costs. On the other hand, organizing the World Cup could generate a greater sense of happiness, pride, harmony, and national identity. If the average Dutch person would be willing to pay at least €9 in the probable scenario to pay for these non-valued benefits and if the costs are limited, the World Cup would be socially profitable. Because this amount is not extremely high, the possibility that the World Cup could contribute to welfare cannot be ruled out.

A second important conclusion is that a sober organization and good cost management are crucial for achieving a positive result. Many uncertainties remain with regard to costs. For example, at the time this study was performed, the exact investments in stadiums and infrastructure were not known, and the costs of security surrounding the World Cup had not yet been sufficiently inventoried.

The third and final conclusion is that many ex ante estimates of the benefits later prove much too high. One explanation for this outcome is that many effects are often not considered. In this analysis, all effects are considered. This ex ante study is the first to consider the costs of security, the costs to the government, and the crowding-out effect. This is quite disadvantageous for the predicted results. A complete social cost-benefit

analysis can also inform policymakers about the attractiveness of organizing a major sports event, and it can help them to make responsible choices.

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