

Do Mega Sporting Events Promote International Trade?

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“When the Olympic flame is lit, China will be hoping for a 17-day festival of sport and international friendship. It sees the games as marking not just its re-emergence as a global economic force but also as a country that the rest of the world treats with admiration and respect.”

Economist, August 2, 2008

1. Introduction

Recent news that Qatar had beaten out far larger and more developed nations to host the 2022 World Cup renewed the hand-wringing associated with the merits of hosting large “mega sporting events,” such as the World Cup or the Olympics. In practice, these events usually end up imposing large costs on their hosts that are not nearly compensated by either the revenues earned during the event or the legacy of large stadia or obscure facilities (such as velodromes, aquatic centers, and so forth) that are left behind. Indeed, in the case of Qatar, the nation reportedly has pledged to spend more than \$50 billion on infrastructure projects and new air-conditioned outdoor stadia. Moreover, it plans to disassemble some of the stadia after the event and donate their segments to developing nations.

Similarly, Rio de Janeiro recently won the right to host the 2016 Olympic Games with a \$15 billion bid, a sum equal to over \$2,000 per citizen—more than two months of GDP per capita, even before the expected cost overruns. A substantial part of this money is planned to go toward upgrading the city’s transportation system. However, if transport investments make sense for a large city with the Olympics looming, don’t such investments just plain make sense, without the spur of hosting the Games? Should long-term investment decisions really be tied to a peak demand that lasts just two-and-a-half weeks?

The implausibility of recovering such a sizable investment explains why economists are usually skeptical that hosting these types of mega sporting events can be profitable. However, there is little question that countries commit substantial resources to become candidates to host mega-events, and much more should they be “fortunate” enough to actually host the event. While there is usually a vocal minority of opponents, the desire to host mega sporting events such as the World Cup or the Olympic Games is widely held by both the masses and political elites.

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In a recent paper [Rose and Spiegel (2010)], we examine the possibility that both sides of the argument may be right. We show that there is a large economic benefit associated with mega sporting events (justifying the public's enthusiasm), despite the fact that much of the requisite new infrastructure is a net cost (explaining the skepticism of economists). Succinctly, we argue that hosting these events may allow countries to signal that they intend to intensify their participation on the world stage, and that there may be tangible benefits of doing so. We narrowly focus on the trade benefits of sending such a signal, but we believe that the point may be more general.

Our explanation seems to accord well with the facts, at least superficially. In July 2001, Beijing was awarded the right to host the Games of the XXIX Olympiad. Just two months later, China successfully concluded negotiations with the World Trade Organization, thus formalizing its commitment to trade liberalization. Nor is this a one-off coincidence. Rome was awarded the 1960 Games in 1955, the same year Italy started to move towards currency convertibility, joined the UN, and, most importantly, began the Messina negotiations that led two years later to the Treaty of Rome and the creation of the European Economic Community. The Tokyo Games of 1964 coincided with Japanese entry into the IMF and the OECD. Barcelona was awarded the 1992 Games in 1986, the same year Spain joined the EEC; the decision to award Korea the 1988 Games coincided with Korea's political liberalization. The correlation extends beyond the Olympics; the 1986 World Cup was held in Mexico coincident with its trade liberalization and entry into the General Agreement on Tariffs and Trade, the predecessor to the World Trade Organization.

2. Mega sporting events as trade promotion

A number of commissioned studies that support subsidization of sporting events actually predict that the events will be profitable. For example Humphreys and Plummer (1995) estimated that the short-term economic benefits to Atlanta from hosting the 1996 Games would be as high as \$5.1 billion. However, more rigorous studies are quite skeptical [e.g., Owen (2005)]. The costs of holding such events seem considerable. Further, any enduring benefits derive mostly from infrastructure investments that the host city could choose to make independently of the Games. Much of the spending on the events by local citizens is a substitute from a different leisure activity or consumption good, rather than true additional spending. Moreover, the projects associated with the Games typically seem to be white elephants, such as poorly-used sporting facilities associated with idiosyncratic Olympic sports, or hotels and transportation infrastructure built to accommodate a one-time peak demand of just three weeks.

However, instead of arguing that hosting mega sporting events such as the Olympics will actually provide direct profits, most proponents argue that doing so will promote a nation's exports. For instance, Preuss (2004) discusses how the Seoul Games in 1988 were intended to improve international relations between South Korea and the Soviet Bloc countries "as well as raise international awareness of Korean manufactured products" so as to promote Korean exports. Indeed, the International Olympic Committee itself has claimed that potential visitors will be drawn to Olympic venues after being exposed to them through the Games:

“Apart from the sporting events, the main reason for applying for candidacy lies in the possibilities for economic development and tourism inherent in such an event. ... Two main reasons seem to motivate most applicant cities, namely international recognition and increased opportunities for invigorated urban and regional development. Indeed, the host city hopes to take advantage of the event to maximize its facilities due to the considerable income generated by the Games, and to give itself an enhanced image to attract future visitors, consumers and potential investors ... Organising the Olympic Games is a fantastic advertising opportunity for the host city... Moreover, organizing the Olympic Games is an opportunity for the host city and country to show the world their ability to undertake and organise successfully such an important event. This promotional aspect is often motivated by the politicians of the host country, thereby explaining the heavy involvement of national governments in the organisation and financing of Olympic Games.”

3. Evidence from the Olympics

We were dubious of the practical relevance of this argument; any export boost from the Olympics would seem to be both small and transient. We therefore examined the effect of hosting the Olympics empirically. We used a standard “gravity” model of trade that predicts that trade volumes between two countries will be a function of their distance and a number of other explanatory variables. This model has been widely shown in the literature to explain a large portion of cross-country variation in trade levels. We add a dummy variable which takes value one for all years after a country emerges as a bidder to host the Olympics, and zero otherwise, to allow for persistent Olympic effects.²

² Our gravity specification satisfies: $\ln(X_{ijt}) = \beta_0 + \beta_1 \ln(D_{ij}) + \beta_2 \ln(\text{Pop}_{it}) + \beta_3 \ln(\text{Pop}_{jt}) + \beta_4 \ln(\text{GDPpc}_{it}) + \beta_5 \ln(\text{GDPpc}_{jt}) + \beta_6 \text{CU}_{ijt} + \beta_7 \text{Lang}_{ij} + \beta_8 \text{RTA}_{ijt} + \beta_9 \text{Border}_{ij} + \beta_{10} \text{Islands}_{ij} + \beta_{11} \text{Area}_{ij} + \beta_{12} \text{ComCol}_{ij} + \beta_{13} \text{Colony}_{ijt} + \beta_{14} \text{EverCol}_{ij} + \beta_{15} \text{SameCtry}_{ijt} + \gamma \text{Summer}_{it} + \varepsilon_{ijt}$, where i denotes the exporting country, j denotes the importer, t denotes time, $\ln(\cdot)$ denotes the natural logarithm operator, and the variables are defined as: X_{ijt} denotes real FOB exports from i to j , measured in millions of dollars, D is the distance between i and j , Pop is population, GDPpc is annual real GDP per capita, Cont is a binary variable which is unity if i and j share a land border, CU is a binary “dummy” variable which is unity if i and j use the same currency at time t and zero otherwise, Lang is a binary variable which is unity if i and j have a common language, RTA is a binary variable which is unity if i and j have a regional trade agreement at t , Border is a binary variable which is unity if i and j share a land border, Island is the number of island countries in the pair (0/1/2), Area is the log of the product of the areas of the countries, ComCol is a binary variable which is unity if i and j were both colonized by the same country, Colony is a binary variable which is unity if i colonizes j at time t (or vice versa), EverCol is a binary variable which is unity if i ever colonized j (or vice versa), SameCtry is a binary variable which is unity if i is part of the same country at time t (or vice versa).

Our results indicated strong evidence of a large positive effect (some 30 percent higher) of the Olympics on both exports and overall trade (see Table 1). Our skepticism therefore seemed unwarranted; the permanent “Olympic trade effect” on exports is large and positive.

INSERT TABLE 1 AROUND HERE

We examined a number of alternative specifications to ensure the robustness of our results. We added a comprehensive set of dyadic-specific fixed effects to absorb any time-invariant characteristics that are common to a pair of countries. We also add comprehensive sets of exporter and importer fixed effects to take account of any time-invariant country-specific factors. We also entertained other estimation strategies (see the original text for details). The Olympic trade effect remained positive and significant throughout. We then added similar dummies for other mega events, such as the World Cup and the World’s Fairs, and find that these also have large positive effects on trade, but the Olympic trade effect is robust to their inclusion. We therefore concluded that the trade benefits of hosting major sporting events predicted by their advocates appeared to be supported by the data. Moreover, other mega sporting events, such as the World Cup, also appeared to have large positive effects on trade.

Still, it may be argued that our observed effect is attributable to unobservable differences between those countries that host sporting events and those that don't, rather than an effect directly attributable to the event itself. Alternatively, there is the possibility of endogeneity issues. Perhaps only countries that are open to trade are chosen to host the Games?

We are skeptical that endogeneity issues are driving our results for a number of reasons: First, the endogeneity critique is primarily cross-sectional, while the empirical finding of relevance to us is found in the time-series behavior of trade.

Second, our analysis shows that countries become more open after the Olympics. However, *cities* (not countries) bid to host the Games. Indeed, four American cities vied for the 1948 Olympics (which went to London); five American cities applied in 1952 (again without success), and six in 1956 (also unsuccessfully).

Third, the IOC provides details both on how it awards the Games and why a city should be interested. There is a long list of technical criteria which are evaluated by an IOC committee; few of these criteria are closely associated with trade. Informally, there is also geographic balancing, and the IOC seems to award perseverance (a number of cities have applied repeatedly). We also note in passing that there is considerable randomness inherent in the process.

versa), β is a vector of nuisance coefficients, Summer is a binary variable which is unity if i hosted a post-war Summer games at or before time t , and zero otherwise, and ε_{ij} represents the omitted other influences on bilateral exports, assumed to be well behaved.

Fourth, we examined the data to consider the issue of reverse causality directly. We investigated whether more open countries are more likely to bid for, or obtain hosting rights to the Olympics. We found that openness entered insignificantly throughout, suggesting that reverse causality is not an issue. We also used a “treatment methodology,” matching Olympic hosts with “control” counterpart non-hosts who other than not hosting exhibit similar characteristics to our host countries. We obtained a smaller, but still substantial 20% estimate for the positive trade effect of hosting the Olympics using this methodology.

Finally, we explicitly acknowledge the possibility that countries are not chosen randomly to host the Olympics by comparing the trade patterns of host countries with those that bid unsuccessfully for the Games. In using these unsuccessful bidders as controls, the operational assumption is that successful and unsuccessful candidates are similar in terms of proclivity towards trade and liberalization, differing only by the experience of actually hosting the Olympic Games.

Using this strategy, we found that countries that were unsuccessful candidates for the Games also experience a positive export effect, one similar in size to that experienced by actual Olympic hosts (see Table 2). This casts doubt on the idea that the trade benefits are associated with changes in a country's economic fundamentals induced by holding the Games (such as construction activity or the resulting infrastructure). Instead, it appears that *all* countries that bid for the Games experience an increase in outward orientation, not just hosts. This too seems to accord with anecdotal information; there are a number of examples of unsuccessful Olympic candidates who liberalized. For instance, South Africa began a dramatic trade liberalization in the mid 1990s while it mounted (and lost) its bid to host the 2004 Olympics (the choice of Athens was announced in September 1997).

INSERT TABLE 2 AROUND HERE

Overall then, despite the battery of robustness tests with which we confront the data, the results consistently demonstrate a substantial positive trade effect associated with hosting the Olympic Games. Moreover, we obtain similar positive and statistically significant estimates for the impact of having hosted the World Cup or the World's Fair.

However, our empirical results leave us with a puzzle: Why should bidding for the Olympics be associated with increased openness? The infrastructure and tourism arguments associated with changes in a country's characteristics from hosting clearly do not apply, as we observe the same effect from successful and unsuccessful bidders.

4. Sporting events as a signal

Our answer to this puzzle is that mega sporting events such as the Olympics may serve as costly strategies through which countries can credibly signal their intent to pursue more open trade policies. The transmission of this signal may bring sufficiently valuable benefits, such as increased investment in the nation that more than offset the costs of hosting the sporting event. More importantly, sending

such a costly signal may create a political atmosphere in which backsliding on either the mega sporting event or trade liberalization becomes prohibitively costly. Big trade liberalizations, just like mega sporting events, are rare and expensive occurrences that are highly visible and have long lead times. But the long-term benefits from trade liberalization can more than compensate for the short-term costs of hosting a mega event, so linking the two in the public's mind may prove a wise strategy.

Our analysis also suggests an answer to the question "Why a mega-event?" as the choice of a signal of liberalization intentions. We find that countries will be more likely to use the Olympic signal the greater is the incidence of the expected cost of sending the signal on the group that expects to benefit from future liberalization. Major sporting events like the Olympics are traditionally financed by the relevant city (usually the capital) in conjunction with the central government of the host country. Policy makers from these groups are likely to disproportionately benefit from liberalization. As such, bidding for the Olympics may serve well as a signal because it aligns the costs and benefits of the signal. Moreover, Olympic bids are highly visible, infrequent, and have long lead times.

5. Conclusion

The motivation for hosting a mega sporting event like the Olympics or the World Cup seems elusive to economists. Plausibly measured net economic benefits are rarely large and typically negative. Claims of non-economic benefits, such as the good feelings experienced by citizens of the host country, are difficult to verify. Yet in practice countries compete fiercely for the right to host such events. Why? This paper identifies one potential explanation; countries that host major sporting events enjoy a substantive permanent increase in trade, a phenomenon we characterize as the "Olympic Effect." Similar increases in openness are observed for countries that host other mega sporting events, such as the World Cup, and even non-sporting mega events, such as World's Fairs. For a country pursuing a trade-oriented development strategy, such an outcome would clearly be attractive.

Our empirical results show that the Olympic Effect is robust; hosting the Games tends to increase a country's openness substantively and permanently. However, we do not believe that hosting the Olympics has an actual causal effect on trade. Our data indicate that while hosting the Games is sufficient to boost trade, it is not necessary. We find that countries that bid for the Olympics unsuccessfully also experience a boost in trade, at levels comparable to those received by actual Olympic hosts (see Table 2). This finding implies that the Olympic Effect on trade does not stem from a change in economic fundamentals, caused by the activity or infrastructure associated with hosting the Olympics. Instead, our empirical findings suggest that bidding for the Olympics is a costly policy signal that is followed by future liberalization.

We close with a number of cautions. First, our model makes no clear statement on the merit of public support for hosting mega sporting events. While we identify a positive trade effect, the magnitude of the costs of hosting modern major international sporting events is astoundingly high. Still, there are those who have argued that openness, particularly to trade flows, is conducive to increases in economic growth. This raises the possibility of substantial gains as well.

Second, there are other motivations for hosting mega-events which we have not addressed. For instance, our theory provides no clear-cut reason why already-open countries should bid at all to host a mega sporting event, yet they clearly do. It is possible that doing so reinforces a country's reputation of desiring to remain open, but that conjecture is outside of our analysis. In addition, our theoretical argument does not explain why countries appear to be vigorously competing to win their bids. We find that the observed benefits to unsuccessful candidates match those of the successful ones, at substantially lower cost. As such, there is definitely an aspect of "winners' remorse" to our analysis; while we provide an explanation why countries may choose to bid to host a major sporting event, our answer implies that those that fail in their bid will do even better than those that end up being the actual hosts.

Table 1

The Permanent Effect of Summer Olympics on Exports in the Gravity Model

Base specification:

FE:	None	Dyadic	Exporter, Importer
Hosting Effect	.30** (.04)	.25** (.03)	.31** (.04)

World Cup Hosting Effect Added

FE:	None	Dyadic	Exporter, Importer
Olympic Hosting Effect	.25** (.04)	.20** (.03)	.23** (.04)
World +Cup Hosting Effect	.34** (.03)	.18** (.03)	.27** (.03)

World's Fair/Expo Hosting Effect Added

FE:	None	Dyadic	Exporter, Importer
Olympic Hosting Effect	.24** (.04)	.08** (.03)	.28** (.04)
World's Fair/Expo Hosting Effect	.19** (.04)	.22** (.03)	.09** (.03)

Coefficients, with robust standard errors (clustered by country-pairs) in parentheses.

Coefficients significantly different from 0 at .05 (.01) marked with one (two) asterisk(s).

Data set includes 449,220 bilateral annual observations covering 196 countries, 1950-2006.

Regressand: natural logarithm of real exports. Regressors included but not recorded: log bilateral distance; log exporter population; log importer population; log exporter real GDP p/c; log importer real GDP p/c; currency union dummy; common language dummy; RTA dummy; common border dummy; number islands (0/1/2); log product exporter and importer area; common colonizer dummy; currently colony dummy; ever colony dummy; common country dummy. Year effects included but not recorded.

Table 2
The Effect of Hosting vs. Bidding to Host Summer Olympics on Exports in the Gravity Model

FE:	None	Dyadic	Exporter, Importer
Olympic Hosting Effect	.15** (.04)	.20** (.03)	.26** (.04)
Olympic Bidding Effect	.16** (.03)	.27** (.03)	.36** (.03)

Coefficients, with robust standard errors (clustered by country-pairs) in parentheses.

Coefficients significantly different from 0 at .05 (.01) marked with one (two) asterisk(s).

Data set includes 449,220 bilateral annual observations covering 196 countries, 1950-2006.

Regressand: natural logarithm of real exports. Regressors included but not recorded: log bilateral distance; log exporter population; log importer population; log exporter real GDP p/c; log importer real GDP p/c; currency union dummy; common language dummy; RTA dummy; common border dummy; number islands (0/1/2); log product exporter and importer area; common colonizer dummy; currently colony dummy; ever colony dummy; common country dummy. Year effects included but not recorded.

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