Trading effects of the FIFA world cup

2 authors, including:

Umut Unal
Research Institute for Labour and Social Affairs
19 PUBLICATIONS   **38** CITATIONS

Trading Effects of the FIFA World Cup

Veysel Avsar and Umut Unal*

I. INTRODUCTION

At the 2004 conference of the joint Turkish and Korean business council, Park Won-jin, the chairman of the Korean-Turkish Business Council, stressed the importance of the 2002 World Cup in Korea on the swelling of bilateral trade between the two countries. It was Turkey's first World Cup appearance since 1954 and they won the bronze medal after an entertaining victory over Korea. Shortly thereafter, bilateral trade between these countries leapt to a sum of one billion dollars, which represents a 20-percent increase from the previous year. There was another 32-percent increase, with bilateral trade reaching more than 1.3 billion dollars in 2004. Is the argument raised by Park Won-jin historically relevant? Does the World Cup promote trade between the host and participant countries? To our knowledge, this is the first paper to address this question empirically.

The World Cup is the most widely followed mega-sport event in the world. Unlike the Olympic Games, national teams face a tough competition in order to qualify for the tournament, which produces a single winner in a single sport. As opposed to the one-month period of the actual tournament, the qualification stage takes two years and a total of approximately 200 nations compete in around 800 games to qualify for the 32 spots in the tournament.[1] Although much lower than the cost of hosting the World Cup, national teams still have to spend significant amounts of money to qualify for the tournament. Costs include hiring a good manager, scouting for alternative players, and improving domestic sports facilities for the preliminary games. Countries do not want to miss the world's soccer feast and wait another four years because being in the competition brings a

---

* Veysel Avsar, corresponding author: Department of Economics, Antalya International University, Antalya, Turkey. E-mail: veysel.avsar@antalya.edu.tr. Umut Unal: Department of Economics, Turgut Ozal University, Ankara, Turkey. E-mail: uunal@turgutozal.edu.tr

1. Baade and Matheson (2004).

---

number of benefits to the country. In this paper, we investigate one dimension of these benefits, an improved trading relationship between the host and participant countries.

Our empirical results suggest that the World Cup significantly increases the exports to the host countries from the participant countries relative to non-participants and that the host-participant pairs have higher trade with each other compared to other country pairs.

The first plausible argument for our findings is the increase in visibility and exposure. Mega sporting events bring important advertising, which increases the ability of both the host and the participant countries to influence each other's consumers. One consequence of this influence is that it improves the awareness of their products, allowing these countries easier access to each other's markets.[2]

Secondly, the World Cup attracts significant numbers of tourists from the participant countries to the host country. Although the main purpose of these travels is to attend the games, it can also work as an important mechanism to start, build, and improve trading networks for businessmen. In addition, potential visitors might be attracted to the venues after the tournament due to their exposure during the games.[3] As noted in Poole (2010), international travel helps buyers and sellers transfer information about local culture, customs, and markets, creating an efficient business relationship.[4] Therefore, the World Cup can help the host and participant countries to attenuate the informational and cultural barriers to trade.

Although the channels described above can be defined as the major mechanisms that explain the trading effects of the World Cup, one can also note other arguments. For instance, Rose and Spiegel (2011) point out that the hosting of large sporting events can work as a signal for trade liberalization and increase countries' openness significantly. Following the same line of argument, the World Cup can also contribute to the negotiations of trade liberalization between the host and participant countries.[5]

In addition, foreign business organizations in both countries may have easier access to policy makers to lobby for lower protection and reduced bureaucracy and procedures because of the World Cup. Therefore, larger sports events may also work as an important channel to decrease the bilateral trading costs and thus contribute to the trade between the host and the participant countries.

---

2. See Preuss (2004).
3. See Rose and Spiegel (2011).
4. There is a growing literature about the effect of international travels on trade. [Including, but not limited to, Kulendran and Wilson (2000), Aradhyula and Tronstad (2003), Poole (2010), Christea (2011)].
5. Two examples in this category are the formation of North American Free Trade Agreement (NAFTA), which coincides with the 1994 World Cup, held in the U.S., and Turkey's entry to the European Free Trade area, which coincides with the 1996 European Championship (Regional version of World Cup) in England.

This study broadly fits into the literature that examines the effect of mega sports events on economic activity.[6] Generally, the primary focus in this literature is the cost and benefits associated with hosting mega sports events. For instance, employing an extended difference in difference estimation technique and using the data for largest 75 urban districts in Germany, Hagn and Meannig (2008) have demonstrated that the 2006 World Cup has almost no effect on the unemployment in the match venues, which is in line with the results of a number of works, particularly those of Baade and Matheson (2000 and 2001) and Carlino and Coulson (2004). Among these, Baade and Matheson (2001) provide estimates for the economic impacts of Major League Baseball (MLB) by examining the data for the 23 All-Star games during the period of 1973 through 1997. Their analysis reveals that All-Star Game cities had employment growth below that which would have been expected.

Similarly, Baade and Matheson (2004) identify a model for the cities in the US that are hosting the 1994 World Cup. For this purpose, income growth rates of each city for each year between 1970 and 2000 are estimated. Thereafter, the difference between actual and predicted growth rates is compared. The results, however, indicate an overall negative impact on the average host city and the US economy overall. Moreover, the findings of this study of soccer World Cup is in agreement with the results of Coates and Humphreys (1999 and 2002).

On the other hand, Lee and Taylor (2005) show that the 2002 World Cup contributed major economic benefits to the host country: South Korea. Using an input-output framework, they calculate that the World Cup generated an economic impact of $1.35 billion of output, $307 million of income and $713 million of value added for South Korea.

The literature which indicates significant positive impacts of sport facilities and sports events is, of course, not only limited to Lee and Taylor's study. According to Plessis and Venter (2010), the immediate impact of the World Cup 2010 on the South African economy was around 0.1 percent of GDP. Moreover, it is noted that there are some sectors enjoyed an unseasonably good June and were beneficiaries of the tournament. Similarly, using a dynamic inter-industry based macroeconomic simulation model, Ahlert (2006) estimates the potential, overall and regional economic effects on the German economy because of hosting the 2006 World Cup. His results indicate a positive overall effect on GDP, private consumption and investment. Moreover, he points out that the increase in GDP due to the pre-event phase (the additional sport specific

---

6. There is also a substantial body of literature devoted to the non-market impacts of these mega sports events. For instance, Torgler (2004) reports empirical evidence of team and referee performances in the FIFA World Cup 2002. His results suggest that being a hosting nation has a significant impact on the probability of winning a game. In addition, Coupe (2007) investigates the determinants and effects of bonus schemes used during the World Cup 2006. He points out that there is not any clear indication that bonuses affected the competition outcome or the quality of the competition.

investments) and/or event phase (expenditures of the World Cup tourists) is not limited to the sport-specific sectors of economy. It is also reported that there is an expansion in non-sport specific sectors of the whole economy even from the beginning of 2003.

Our paper most closely complements the earlier work by Rose and Spiegel (2011), which examines the trading effects of hosting the Olympics. Their results suggest that trade is over 20 percent higher for the host countries, and unsuccessful bids to host the Olympics also have a similar impact on exports. For the first time in the literature, our focus is on the relationship between the host-participant pairs, rather than the effect of the large sporting events on the host country itself.

The remainder of the paper is organized as follows. In the next section, we describe the data. Section 3 includes the empirical specification and the results. Section 4 provides a brief conclusion.

II. DATA

We obtained the trade data and the other country level variables from Rose and Spiegel (2011).[7] For the trade data that is not recorded in their dataset, we utilized the *IMF Direction of Trade Statistics*.[8] For the World Trade Organization (WTO) membership, we utilized the WTO website. Finally, the data on the hosts and the participants of the World Cup were obtained from the website of FIFA (*Fédération Internationale de Football Association*).

Our sample includes bilateral observations for the periods between 1950 and 2006 for 196 countries. Table A1 shows the host countries for each World Cup and the corresponding participants.

III. EMPIRICAL SPECIFICATION

3.1. Exports to the Host Countries: Participants vs. Non-participants

Pooled OLS estimation

We started our empirical specification by analyzing the effect of the World Cup on the trade flows of the participant countries to the host countries, relative to non-participants. To do so, we pooled our bilateral trade data over World Cup host and year combinations and employed the "gravity" model of international

---

7. See http://faculty.haas.berkeley.edu/arose/RecRes.htm (We appreciate their generosity.)
8. Rose and Spiegel (2011)'s data have the export values (X_{ij}) from country i to j. For the export values from j to i, we constructed our own data.

trade, which is extensively used to estimate the bilateral trade flows between paired countries. The following equation is estimated by OLS[9]:

$$
\begin{aligned}
ln(X_{ijt}) = {} & \beta_0 + \beta_1 \, ln(X_{ijt-1}) + \beta_2 \, ln(pop_{it}) + \beta_3 \, ln(pop_{jt}) + \beta_4 \, ln(GDPpc_{it}) \\
& + \beta_5 \, ln(GDPpc_{jt}) + \beta_6 \, Common \; Language_{ij} + \beta_7 \, RTA_{ijt} \\
& + \beta_8 \, Common \; Border_{ij} + \beta_9 \, Islands_{ij} + \beta_{10} \, WTO_{ijt} + \beta_{11} \, Area_{ij} \\
& + \beta_{12} \, Colony_{ij} + \beta_{13} \, Landlocked_{ij} + \beta_{14} \, ln(D_{ij}) + \theta_1 \, Participant_{jt} + \varepsilon_{ijt}
\end{aligned}
\tag{1}
$$

where i denotes the World Cup host, j denotes the exporter country, t is the year of the tournament, X_{ijt} denotes the exports from j to the host countries, *pop* denotes population, *GDPpc* is the annual real GDP per capita. *Common Language* and *Common Border* take a value of 1 if the country pairs share the same language and the same land border, respectively. *Area* is the log of the areas of the countries. *RTA* is a binary indicator and is unity if the countries have a regional trade agreement. *Island* is the number of island countries; *WTO* is the number of WTO members; and *Landlocked* is the number of landlocked countries in the pair. *Colony* is a binary indicator and is equal to 1 if the country pairs have colonial ties. D_{ij} denotes the distance between i and j. In addition, we also added the lagged value of the dependent variable to capture the effect of past trading relationships on current trade.[10]

The variable of interest in (1) is *Participant*$_{jt}$, which takes a value of 1 if the country j is qualified to the particular World Cup held in country i. Since we pooled the data for World Cup host and year combinations, we interpret the coefficient of this variable as the increase in the exports of the participant countries to the host countries relative to the control group of non-participants.

Table 1 reports the coefficient estimates obtained from equation (1). Since the year dummies control for the invariant host country specific variables, when we pool the data over World Cup host and year combinations, specifications in Table 1 do not include the GDP and the population of the host country.[11] To save space, we do not discuss the coefficients of the standard gravity controls as they are not of particular interest. Consider the first column in Table 1; the estimate of θ_l is positive and statistically significant. In terms of the magnitude of the effect, participating in the World Cup increases exports to the host countries by 17 percent, relative to a control group of non-participant countries.[12] In columns 2 to 6, we carry out a number of experiments which were suggested by Rose and

---

9. Although hosting the World Cup may be thought as endogenous, participating to the tournament is exogenous. Therefore, OLS is not biased.
10. See Eichengreen & Irwin, 1997; Bun & Klaassen, 2002; De Grauwe & Skudelny, 2000; Vandenbussche & Zanardi, 2010.
11. In our pooled OLS estimation, year dummies are equivalent to World Cup host dummies.
12. We use the formula used by Kennedy (1981) to convert the coefficient of the dummy variable to its true marginal effect.

Table 1

OLS Estimation Results (Pooled over World Cup Hosts & Years Combinations)

Dependent variable: Log of Exports to the host countries [$ln(X_{ijt})$]
Participants vs. Non-participants

	All sample (1)	Drop Latin American Countries (2)	Drop African Countries (3)	Drop Middle Eastern Countries (4)	Drop Poor Countries (5)	EU zone Countries
$ln(X_{ijt-1})$	0.863	0.855	0.862	0.862	0.872	0.919
	(45.07)***	(39.00)***	(38.17)***	(44.31)***	(41.41)***	(22.85)***
Participant$_{jt}$	0.172	0.162	0.181	0.179	0.164	0.198
	(2.04)**	(2.09)**	(2.49)**	(2.85)**	(2.24)**	(2.34)**
WTO member	0.136	0.183	0.042	0.197	0.066	0.176
	(2.82)**	(2.07)**	(2.23)**	(2.15)**	(2.38)**	(0.65)
Log Distance$_{ij}$	-0.198	-0.193	-0.262	-0.176	-0.150	-0.74
	(0.28)	(0.23)	(0.95)	(0.02)	(0.69)	(0.48)
Islands	-0.274	-0.256	-0.366	-0.264	-0.171	-0.054
	(2.46)**	(2.13)**	(2.92)***	(2.25)**	(1.34)	(0.15)
Log Population$_{jt}$	0.449	0.434	0.457	0.446	0.469	0.413
	(1.73)*	(1.92)*	(1.49)	(1.72)*	(1.71)*	(1.04)
Log (Real GDP p/c)$_j$	0.365	0.370	0.317	0.370	0.382	0.049
	(1.66)*	(1.73)*	(1.75)*	(1.71)*	(1.97)**	(1.71)*
Landlocked	-0.197	-0.216	-0.244	-0.205	-0.165	-0.056
	(1.80)*	(1.80)*	(1.95)*	(1.84)*	(1.47)	(0.30)
Common Language$_{ij}$	0.202	0.192	0.203	0.229	0.289	0.270
	(1.66)*	(1.79)*	(1.74)*	(1.59)	(1.86)*	(1.93)*
RTA$_{ij}$	0.085	0.191	0.011	0.118	0.025	0.052
	(0.72)	(1.36)	(0.09)	(0.95)	(0.21)	(0.21)
Common Border$_{ij}$	0.480	0.310	0.399	0.498	0.550	0.376
	(2.00)**	(1.89)*	(1.85)*	(2.04)**	(2.22)**	(2.41)**
Log Product Land Areas$_{ij}$	-0.011	-0.021	-0.008	-0.018	-0.001	-0.013
	(0.45)	(0.74)	(0.28)	(0.70)	(0.02)	(0.19)
Colony$_{ij}$	0.345	0.317	0.202	0.345	0.515	0.468
	(1.81)*	(1.66)*	(0.91)	(1.72)*	(2.32)**	(2.14)**
Observations	1331	1114	997	1229	1146	770
R-squared	0.83	0.82	0.84	0.83	0.84	0.71

Notes: Robust t-statistics in parentheses. *significant at 10%; **significant at 5%; ***significant at 1%. Year dummies and constant terms included but suppressed.

Spiegel (2011). For instance, one could argue that the results obtained in speci-
fication 1 might be particularly driven by the trading effects of the World Cup in
a specific region. For this consideration, we removed the observations where
country j is a Latin American Country, an African country, and a Middle Eastern
Country in specifications 2, 3 and 4, respectively. Moreover, we also dropped the
observations for the poor exporters (those with real GDP per capita less than
$1000 per annum) in specification 5. Finally, we estimated the regression only
for the European countries in specification 6 given the fact that trade is especially
intensive within Europe and they have a higher probability of being in the World
Cup.[13] As documented, the coefficient θ_1 is always positive and significant
although slightly different in magnitude. Therefore, our estimates do not result
from some small subset of the data.[14]

Dynamic specification

We also estimate the effect of the World Cup on the trade flows of participant
countries to the host countries, relative to a control group of non-participants
using panel data.

In particular, we employ the following specification:

$$
\begin{aligned}
ln(X_{ijt}) = {} & \beta_0 + \beta_1\, ln(X_{ijt-1}) + \beta_2\, ln(pop_{it}) + \beta_3\, ln(pop_{jt}) + \beta_4\, ln(GDPpc_{it}) \\
& + \beta_5\, ln(GDPpc_{jt}) + \beta_6\, WTO_{ijt} + \beta_7\, RTA_{ijt} + \theta_2\, Participant_{jt} \\
& + \theta_3\, (Participant_{jt} \times Trend) + \varepsilon_{ijt} + \mu_{ijt}
\end{aligned}
\tag{2}
$$

where i denotes the World Cup host, j denotes the exporter country, and μ_{ijt}
denotes country-pair fixed effects. There are three differences in this speci-
fication when compared to equation (1). First, t denotes the time period between
1950 and 2006. Second, our variable of interest $Participant_{jt}$ takes on a value of
1 at or before the year of the event, and the variable $Trend$ indicates the time trend
after the World Cup takes place. It is likely that the trade effect of the World Cup
decreases as time passes after the event.[15] This dynamic effect is captured by
the coefficient θ_3. Further, since country-pair fixed effects control for all
time-invariant factors, we do not include them in (2), as opposed to (1).

A serious problem in estimating (2) is the serial correlation in the export series
which would bias the OLS estimates. We therefore apply instrumental variable
(IV) estimation where the second lag of the dependent variable is used as an

---

13. The results also hold for the non-Euro zone countries.
14. While we do not report here, the same pattern of results also hold for the exports originating from the
    host country. The results are available in the working paper revision of the article.
15. This variable is zero before the event for the particular host-participant pairs.

instrument.[16] To address the concern of weak instruments, we tested the quality of our instrument. The *F-test* obtained in the first stage confirmed the validity of our instrument.[17]

The estimation results obtained from equation (2) are reported in Table 2. As shown, both θ_2 and θ_3 are significant with the expected signs. To gauge the economic effect, consider specification (1) in Table 2. Countries that qualified to the World Cup finals exported around 16 percent higher to the host countries for the year of the World Cup and this effect is decreasing 0.5 percent every year. For instance, for the 5th year after the event, the effect of World Cup on the export flows is estimated as 13 percent approximately. Similar to the earlier section, we also check the robustness of our results in the next specifications of Table 3. As documented, our results are insensitive to all of the robustness checks described earlier.

3.2. Trading Effects of the World Cup: Host-participant pairs vs. Other Countries

Pooled OLS estimation

Having analyzed the participant countries' exports to host countries relative to a control group of non-participant countries, we turn to the trading effects of the World Cup for the host-participant pairs relative to all other country pairs.[18] Hence, we pooled the bilateral trade data over World Cup years to estimate the following model via OLS:

$$ln\left(X_{ijt}\right) = \beta_0 + \beta_1\,ln\left(X_{ijt-1}\right) + \beta_2\,ln\left(pop_{it}\right) + \beta_3\,ln\left(pop_{jt}\right) + \beta_4\,ln\left(GDPpc_{it}\right)$$
$$ + \beta_5\,ln\left(GDPpc_{jt}\right) + \beta_6\,WTO_{ijt} + \beta_7\,RTA_{ijt} + \theta_4\,Participant_{ijt} + \varepsilon_{ijt} + \mu_{ijt}$$
$$(3)$$

where i denotes the importer and j denotes the exporter, and t denotes the years in which there was a World Cup (1950, 54, 58 . . . 2006). *Participant*$_{ijt}$ is unity if country j participated in the World Cup organized in country i in year t. μ_{ijt} denotes country-pair fixed effects.[19]

We document the estimation results of equation (3) in Table 3. Similar to earlier estimates, we obtain positive and significant estimates for the variable of interest. Economically speaking, in the years of the World Cup, trade is about

---

16. Vandenbussche and Zanardi (2010).
17. The first stage estimates are reported in Table A2.
18. Notice that other country pairs include host countries and non-participants, and participants and non-hosts.
19. As opposed to the previous pooled estimation in section 3.1, we include the country-pair fixed effects in equation (3) due to the higher number of observations that make the estimation feasible with fixed effects.

Table 2
IV Panel Estimation – Country Pair Fixed Effects

Dependent variable: Log of Exports to the host countries [$ln(X_{ijt})$]
Participants vs. Non-participants

	All sample	Drop Latin American Countries	Drop African Countries	Drop Middle Eastern Countries	Drop Poor Countries	EU Zone Countries
[$ln(X_{ijt-1})$]	0.749	0.722	0.731	0.711	0.732	0.722
	(105.03)***	(83.41)***	(90.76)***	(86.32)***	(67.34)***	(76.44)***
Participant$_{jt}$	0.158	0.153	0.154	0.149	0.141	0.148
	(2.92)***	(2.11)**	(3.31)***	(3.16)***	(2.99)***	(2.81)***
Participant$_{jt}$ x Time trend	−0.005	−0.005	−0.004	−0.005	−0.005	−0.005
	(2.59)***	(1.98)**	(2.65)**	(2.13)**	(1.97)**	(2.67)***
WTO member$_{ijt}$	0.035	0.048	0.027	0.051	0.043	0.067
	(1.24)	(1.60)	(0.41)	(1.85)*	(1.59)	(1.84)*
Log Population$_{it}$	0.331	0.397	0.467	0.387	0.265	0.013
	(2.03)**	(2.01)**	(2.64)**	(3.06)***	(3.27)***	(0.14)
Log Population$_{jt}$	0.232	0.212	0.241	0.216	0.231	0.223
	(296,)***	(4.76)***	(3.54)***	(3.87)***	(3.96)***	(1.91)*
Log (Real GDP p/c)$_{it}$	0.599	0.561	0.487	0.327	0.466	0.173
	(2.02)**	(1.99)**	(2.73)**	(2.43)**	(2.47)**	(2.45)**
Log (Real GDP p/c)$_{jt}$	0.410	0.467	0.432	0.327	0.376	0.061
	(0.81)	(0.32)	(0.62)	(0.39)	(0.56)	(1.45)
RTA$_{ijt}$	0.032	0.061	0.018	0.043	0.025	0.038
	(1.03)	(1.54)	(0.58)	(1.91)*	(1.12)	(0.22)
Country pair fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.80	0.78	0.80	0.80	0.80	0.45
Observations	63589	53095	46999	58333	57001	38732

Notes: Robust t-statistics in parentheses. *significant at 10%; **significant at 5%; ***significant at 1%. Year dummies and constant terms included but suppressed.

Table 3

OLS Estimation (Pooled over the World Cup years)

	All sample	Drop Latin American Countries	Drop African Countries	Drop Middle Eastern Countries	Drop Poor Countries	EU zone Countries
	Dependent variable: $[ln(X_{ijt})]$ Host- Participant pairs vs. Others					
$[ln(X_{ij-1})]$	0.621 (190.87)***	0.616 (174.93)***	0.621 (171.07)***	0.624 (183.72)***	0.619 (181.74)***	0.640 (102.83)***
Participant$_{ijt}$	0.191 (2.05)**	0.204 (2.81)***	0.208 (2.24)**	0.200 (2.10)**	0.199 (2.14)**	0.188 (1.97)**
WTO member	0.004 (0.13)	0.004 (0.13)	0.028 (0.81)	0.003 (0.09)	0.015 (0.47)	0.012 (0.87)
Log Population$_{it}$	0.381 (1.78)*	0.344 (1.79)*	0.312 (1.60)	0.370 (1.76)*	0.306 (1.74)*	0.002 (1.77)*
Log Population$_{jt}$	0.172 (1.29)	0.195 (1.58)	0.137 (1.74)*	0.161 (0.98)	0.153 (0.90)	0.003 (0.82)
Log (Real GDP p/c)$_{it}$	0.720 (1.73)*	0.843 (1.84)*	0.839 (2.06)**	0.839 (1.18)	0.711 (1.20)	0.067 (1.79)*
Log (Real GDP p/c)$_{jt}$	0.637 (2.15)**	0.509 (2.29)**	0.618 (2.00)**	0.632 (2.87)**	0.646 (2.02)**	0.123 (1.51)
RTA$_{ijt}$	0.016 (0.59)	0.011 (0.36)	0.035 (1.18)	0.005 (0.17)	0.019 (0.66)	0.035 (0.57)
Country pair fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.39	0.39	0.39	0.39	0.39	0.42
Observations	73875	64344	58259	67532	68038	35921

Notes: Robust t-statistics in parentheses. *significant at 10%; **significant at 5%; ***significant at 1%. Year dummies and constant terms included but suppressed.

18–20 percent higher for host-participant combinations when compared to other country pairs. Once again, removing some subsets of our sample does not alter our findings.

Dynamic specification

Our last specification is the panel estimation of the permanent effect of the World Cup on trade flows of host-participant pairs, compared to other country pairs. The following gravity equation quantifies the model:

$$ln(X_{ijt}) = \beta_0 + \beta_1 \, ln(X_{ijt-1}) + \beta_2 \, ln(pop_{it}) + \beta_3 \, ln(pop_{jt}) + \beta_4 \, ln(GDPpc_{it})$$
$$+ \, \beta_5 \, ln(GDPpc_{jt}) + \beta_6 \, WTO_{ijt} + \beta_7 \, RTA_{ijt} + \theta_5 \, Participant_{ijt} \qquad (4)$$
$$+ \, \theta_6 \, (Participant_{ijt} \times Trend) \varepsilon_{ijt} + \mu_{ijt}$$

where i denotes the importer, j denotes the exporter, and t denotes the years from 1950 to 2006. As opposed to the previous three specifications, this one includes all country pairs and years in the sample. In line with the previous panel estimation, $Participant_{ijt}$ takes on a value of 1 if the country j participated in the World Cup in country i during or prior to year t and the $Trend$ denotes the number of years after the World Cup. We correct the bias associated with the serial correlation of export values by applying IV regression. The first stage results suggest that the second lag of the dependent variable is a strong instrument for the first lag.[20]

Table 4 illustrates the estimation results for equation 4. Similar to the findings in Table 2, the estimates on the coefficient θ_5 and θ_6 suggests that host-participant pairs had higher trade between each other as compared to other country pairs and the trade effect of the World Cup is decreasing over time. This effect is robust to the number of robustness checks such as dropping some of the regions and poor countries from the sample and running the regression only for European countries.

IV. CONCLUSION

The FIFA World Cup attracts media and sponsorship, draws thousands of international tourists, and provides important global showcase opportunities for countries to improve their visibility and exposure. It also works as a channel for the host and the participant countries to reduce the cultural and informational barriers between them. Therefore, the World Cup brings many mechanisms to promote trade between the host and the participant countries. In this paper, we build on this argument and obtain strong evidence of a reasonable trading effect of the World Cup using bilateral trade data for 196 countries between 1950 and 2006.

20.   See Table A2.

Table 4

IV Panel Estimation

	All sample	Drop Latin American Countries	Drop African Countries	Drop Middle Eastern Countries	Drop Poor Countries	EU Zone Countries
		Dependent variable: [ln(X_{ijt})] Host-Participant pairs vs. Others				
[$ln(X_{ijt-1})$]	0.698	0.608	0.682	0.624	0.654	0.589
	(104.03)***	(106.13)***	(153.09)***	(156.48)***	(195.31)***	(117.54)***
Participant$_{ijt}$	0.112	0.118	0.111	0.118	0.117	0.124
	(2.91)**	(2.01)**	(2.13)**	(2.17)**	(2.02)**	(3.16)**
Participant$_{ijt}$ x Time trend	−0.004	−0.005	−0.005	−0.005	−0.005	−0.004
	(2.13)**	(3.15)***	(3.41)***	(2.06)**	(1.99)**	(5.46)***
WTO member	0.016	0.018	0.022	0.016	0.019	0.026
	(2.28)**	(2.21)**	(2.09)**	(1.22)	(1.69)*	(2.08)**
Log Population$_{it}$	0.035	0.026	0.027	0.024	0.027	0.027
	(1.17)	(0.96)	(1.14)	(0.37)	(1.66)*	(2.01)**
Log Population$_{jt}$	0.181	0.214	0.318	0.317	0.272	0.258
	(2.73)**	(2.88)**	(2.18)**	(2.09)**	(2.94)**	(2.52)**
Log (Real GDP p/c)$_{it}$	0.312	0.387	0.274	0.323	0.3216	0.187
	(0.45)	(0.37)	(0.55)	(0.58)	(0.65)	(0.18)
Log (Real GDP p/c)$_{jt}$	0.602	0.476	0.420	0.478	0.553	0.422
	(3.76)***	(3.77)***	(2.26)**	(2.87)**	(2.63)**	(5.65)***
RTA$_{ijt}$	0.001	0.004	0.002	0.001	−0.002	0.001
	(0.08)	(0.60)	(0.44)	(0.12)	(0.77)	(0.97)
Country pair fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.83	0.82	0.82	0.83	0.78	0.76
Observations	327537	285402	257457	299657	300999	145203

Notes: Robust t-statistics in parentheses. *significant at 10%; **significant at 5%; ***significant at 1%. Year dummies and constant terms included but suppressed. Constant terms included.

We carry out our empirical analysis in two dimensions. First, we show that participating in the World Cup significantly increases exports from the participant countries to the host countries, relative to a control group of non-participants. Second, we demonstrate that trade is reasonably higher for host-participant pairs compared to other country pairs. We also provide dynamic estimates for both cases and conclude that the trade effect of the World Cup is decreasing over time. These findings are also important in the sense that most of the existing studies have concentrated on the economic effects of hosting large sports events. Our study paves the way for detailed works on large sports events and the economic, social, and cultural relationships between the host and the participant countries.

REFERENCES

Ahlert, G. (2006). Hosting the FIFA World Cup Germany 2006, *Journal of Convention and Event Tourism*. 8(2): 57–78.

Aradhyula, S. and Tronstad, R. (2003). Does Tourism Promote Cross-Border Trade? *American Journal of Agricultural Economics*. 85: 569–579.

Baade, R. and Matheson, V. (2000). An Assessment of the Economic Impact of the American Football Championship, the Super Bowl, on Host Communities, *Reflets et Perspectives*. 39(2–3): 35–46.

Baade, R. and Matheson, V. (2001). Home Run on Wild Pitch? The Economic Impact of Major League Baseball's All Star Game, *Journal of Sports Economics*. 2(4): 307–326.

Baade, R. and Matheson, V. (2004). The Quest for the Cup: Assessing the Economic Impact of the World Cup, *Regional Studies*. 38(4): 343–354.

Bun, M. and Klaassen, F. (2002). *The Importance of Dynamics in Panel Gravity Models of Trade*, mimeo, University of Amsterdam.

Carlino, G. and Coulson, N.E (2004). Compensating Differentials and The Social Benefits of the NFL, *Journal of Urban Economics*. 56: 25–50.

Christea, A. (2011). Buyer – Seller Relationships in International Trade: Evidence from U.S. States' Exports and Business Class Travel, *Journal of International Economics*, forthcoming.

Coates, D. and Humphreys, B.R. (1999). The Growth Effects of Sports Franchises, Stadia and Arenas. *Journal of Policy Analysis and Management*. 18(4): 601–624.

Coates, D. and Humphreys, B.R. (2002). The Economic Impact of Postseason Play in Professional Sports. *Journal of Sports Economics*. 3(3): 291–299.

Coupe, T. (2007). Incentives and Bonuses – The Case of the 2006 World Cup. *Kyklos*. 60(3): 349–358.

De Grauwe, P. and Skudelny, F. (2000). The Impact of EMU on Trade Flows, *Review of World Economics, (Weltwirtschaftliches Archiv)*. 126: 381–402.

Eichengreen, B. and Irwin, D.A. (1997). The Role of History in Bilateral Trade Flows, in J.A. Frankel (ed.), *Issues in Regionalism*, Chicago: University of Chicago Press.

Hagn, F. and Maennig, W. (2008). Employment Effects of the Football World Cup 1974 in Germany, *Labour Economics*. 15: 1062–1075.

Kennedy, P. (1981). Estimation with Correctly Interpreted Dummy Variables in Semilogarithmic Equations, *American Economic Review*. 71: 801.

Kulendran, N. and Wilson, K. (2000). Is There a Relationship Between International Trade and International Travel? *Applied Economics*. 32: 1001–1009.

Lee, C. and Taylor, T. (2005). Critical Reflections on the Economic Impact Assessment of a Mega Event: The Case of 2002 *FIFA World Cup*. 26: 595–603.

Plessis, S. and Venter, C. (2010). The Home Team Scores! A First Assessment of the Economic Impact of World Cup 2010, Stellenbosch Economic Working Papers: 21/10.

Poole, J. (2010). *Business Travel as an Input to International Trade*, mimeo, UC Santa Cruz.

Preuss, H. (2004). *The Economics of Staging the Olympics*, Edward Elgar, Northampton.

Rose, A. and Spiegel, M. (2011). The Olympic Effect, *Economic Journal*. 121: 652–677.

Torgler, B. (2004). The Economics of the FIFA Football Worldcup. *Kyklos*. 57(2): 287–300.

Vandenbussche, H. and Zanardi, M. (2010). The Chilling Trade Effects of Antidumping Proliferation, *European Economic Review*. 54(6): 760–777.

APPENDIX

Table A1

FIFA World Cup: 1950–2006

Year	Host	Participants
1950	Brazil	Brazil, Italy, England, Uruguay, Sweden, Switzerland, Spain, Bolivia, Chile, Paraguay, Yugoslavia, India, Mexico, Portugal, United States, France
1954	Switzerland	Switzerland, Uruguay, Brazil, Hungary, Austria, England, West Germany, Yugoslavia, France, Italy, Czechoslovakia, Turkey, Belgium, Mexico, South Korea, Scotland
1958	Sweden	Sweden, West Germany, Austria, France, Czechoslovakia, Hungary, Soviet Union, Yugoslavia, England, Northern Ireland, Scotland, Wales, Argentina, Brazil, Mexico, Paraguay
1962	Chile	Chile, Brazil, Argentina, Uruguay, Czechoslovakia, England, Soviet Union, West Germany, Italy, Hungary, Spain, Yugoslavia, Bulgaria, Colombia, Mexico, Switzerland
1966	England	Brazil, Argentina, Chile, Uruguay, England, Portugal, West Germany, France, Hungary, Switzerland, Soviet Union, Bulgaria, North Korea, Mexico, Spain
1970	Mexico	Brazil, Italy, Germany FR, Uruguay, England, Mexico, Peru, Soviet Union, Belgium, Bulgaria, Czechoslovakia, El Salvador, Israel, Morocco, Romania, Sweden
1974	Germany	West Germany, Italy, Netherlands, Scotland, Bulgaria, Germany, Poland, Yugoslavia, Brazil, Argentina, Chile, Uruguay, Australia, Haiti, Sweden, Zaire
1978	Argentina	Argentina, Germany, Netherlands, Brazil, Italy, Sweden, Mexico, Peru, Hungary, Poland, Scotland, Spain, Austria, France, Iran, Tunisia
1982	Spain	Spain, Argentina, Brazil, Italy, Germany, England, Austria, Soviet Union, Hungary, Poland, Czechoslovakia, Yugoslavia, Belgium, Scotland, Northern Ireland, France, Chile, Peru, Algeria, Cameroon, Kuwait, El Salvador, Honduras, New Zealand
1986	Mexico	Germany, France, Belgium, Brazil, England, Mexico, Spain, Bulgaria, England, Mexico, Spain, Bulgaria, Denmark, Italy, Morocco, Paraguay, Poland, Uruguay, Soviet Union, Algeria, Canada, Hungary, Iraq, Korea Republic, Northern Ireland, Portugal, Scotland
1990	Italy	Italy, Argentina, Brazil, Germany, England, Austria, Netherlands, Scotland, Spain, Soviet Union, Yugoslavia, Colombia, Czechoslovakia, Ireland, Romania, Sweden, Uruguay, Cameroon, Costa Rica, Egypt, South Korea, United Arab Emirates, United States
1994	USA	United States, Germany, Argentina, Belgium, Brazil, Italy, Bulgaria, Ireland, Netherlands, Romania, Spain, Russia, Greece, Norway, Sweden, Switzerland, South Korea, Saudi Arabia, Cameroon, Morocco, Nigeria, Bolivia, Colombia, Mexico
1998	France	France, Brazil, Argentina, Germany, Italy, Netherlands, Romania, Spain, Cameroon, Morocco, Nigeria, South Africa, Tunisia, Jamaica, Mexico, United States, Austria, Belgium, Bulgaria, Croatia, Denmark, England, Norway, Scotland, Yugoslavia, Chile, Colombia, Paraguay, Iran, Japan, South Korea, Saudi Arabia
2002	Korea and Japan	Argentina, Brazil, Germany, Italy, France, Japan, South Korea, Spain, Belgium, Croatia, Denmark, England, Ireland, Poland, Portugal, Russia, Slovenia, Sweden, Turkey, China, Ecuador, Paraguay, Saudi Arabia, Uruguay, Cameroon, Costa Rica, Mexico, Nigeria, Senegal, South Africa, Tunisia, United States
2006	Germany	Iran, Japan, Saudi Arabia, South Korea, Angola, Ivory Coast, Ghana, Togo, Tunisia, Costa Rica, Mexico, Trinidad and Tobago, United States, Argentina, Brazil, Ecuador, Paraguay, Australia, Croatia, Czech Republic, England, France, Italy, Netherlands, Poland, Portugal, Serbia, Spain, Switzerland, Sweden, Ukraine

Table A2

Testing Instrument Quality

First Stage Estimates		
	Table 2 (1)	Table 4 (1)
	First lag	First lag
Second lag	0.130	0.210
	(187.20)***	(40.57)***
Participant$_j$	0.241	0.146
	(4.76)***	(1.02)
WTO member	0.078	0.065
	(4.65)***	(5.43)***
Log Population$_i$	−0.014	0.233
	(0.46)	(0.84)
Log Population$_j$	−0.014	−0.009
	(0.48)	(0.05)
Log (Real GDP p/c)$_i$	−0.085	−0.222
	(4.76)***	(0.94)
Log (Real GDP p/c)$_j$	−0.045	−0.075
	(2.77)***	(1.50)
RTA	0.010	0.073
	(0.68)	(0.86)
Observations	63589	327537
R-squared	0.10	0.19
***F* stat**	**562.11**	**34.02**

Notes: Robust t-statistics in parentheses. *significant at 10%; **significant at 5%; ***significant at 1%. Year dummies and constant terms included but suppressed. Constant terms included.

SUMMARY

This study analyzes the trading effects of FIFA World Cup in two dimensions. First, we show that participating in the World Cup significantly increases exports from the participant countries to the host countries, relative to a control group of non-participants. Second, we demonstrate that trade is reasonably higher for host-participant pairs compared to other country pairs. We also provide dynamic estimates for both cases and offer plausible arguments and important channels for our findings.