

How Do Nationalistic Antagonisms Affect Trade Flows? Evidence from a Large Natural Experiment

Andrew Bertoli[†] and George Yin^{††}

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ABSTRACT. Scholars debate whether nationalistic tensions can impact trade between countries. We use a natural experiment to investigate this question. Building off recent research that uses international sports as a source of nationalism, we examine whether countries trade less with each other when they are randomly assigned to compete at the World Cup (n=3622 dyads). We find that World Cup competition does decrease bilateral trade levels, especially for countries where association football (soccer) is the most popular sport. For these dyads, being randomly assigned to compete at the World Cup leads to an estimated 1.5% drop in bilateral trade. Further, we find that losing makes countries much more likely to import less from the countries that defeated them, suggesting a “sore-loser” effect. These results highlight the potential for nationalistic antagonisms to disrupt global markets, particularly when countries feel like they have suffered defeat in a dispute.

[†] Assistant Professor, School of Global and Public Affairs, IE University, *Corresponding Author*
Plaza de la Castellana, 259, Office 1610, Madrid, Spain, 28046, abertoli@faculty.ie.edu

^{††} National Service Postdoctoral Research Fellow, Republic of China (Taiwan)

Department of Political Science, National Taiwan University. No. 1, Sec. 4, Roosevelt Road,
Taipei, 10617 Taiwan R.O.C. george.yin1@gmail.com

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Many view nationalism as a source of conflict and discord in international relations (Kertzer et al. 2014; Gruffydd-Jones 2017; O’Leary and Sambanis 2018). In the economic realm, some argue that nationalistic animosities could hamper the global economy (Mansfield and Mutz 2013; Colantone and Stanig 2018). For example, nationalistic tensions between the United States and some of its closest trading partners, including China and Mexico, could impact these countries’ economic relations (Hafner-Burton, Narang, and Rathbun 2019; Carnegie and Carson 2019; Weiss and Wallace 2021). Furthermore, nationalistic antagonisms in Europe might disrupt long-term trade in the region (Rosato 2011; Mearsheimer 2019).

But do nationalistic passions really cause significant economic turbulence in international affairs, or are they unlikely to have much of a meaningful impact in most cases? A number of recent studies identify specific examples where nationalistic animosities seemed to disrupt trade between countries (e.g., Michaels and Zhi 2010; Fisman, Hamao, and Wang 2014; Fouka and Voth 2016; Luo and Zhou 2019). However, bilateral trade levels often experience seasonal and yearly fluctuations, which can make it hard to attribute a decline in trade to a rise in nationalistic tensions (Ashenfelter, Ciccarella, and Shatz 2007). In addition, the specific cases that these studies focus on could be very atypical.

In this paper, we analyze a large- N natural experiment to test how nationalist antagonisms affect trade. Specifically, we examine whether countries are more likely to experience drops in trade when they are randomly assigned to play against each other at the World Cup. Because the World Cup pits pairs of countries to compete against each other for national glory, it commonly generates nationalist animosities between them (Orwell 1945a; Cha 2009; Markovits and Rensman 2010; Vincent et al. 2010). The World Cup

also provides a unique opportunity to study nationalism because the organizers randomized countries to compete against each other throughout the entire history of the tournament.

In total, we look at 3622 pairs of countries from 1930-2018 that were either randomized to play against each other at the World Cup or could have been randomized to play against each other. These countries were first put into pots, and then they were randomly drawn out of the pots to make groups. As we explain in more detail in Section 3, this format can easily be analyzed using randomization (or permutation) inference. Randomization inference is a classic experimental method that was first introduced by R.A. Fisher in his famous “Lady Tasting Tea” study (Fisher 1937). It produces valid hypothesis tests in cases where the randomization process is well-understood (Ho and Imai 2006; White, Laird, and Allen 2014; Dahlgaard 2018; Hager, Krakowski, and Schaub 2019).

Our analysis shows that countries become much more likely to experience drops in trade when they are randomized to compete against each other at the World Cup. Overall, our estimates suggest that being randomized to compete at the World Cup leads pairs of countries to experience a 1.2% drop in bilateral trade on average. Moreover, our findings are driven by pairs of countries where soccer is the most popular sport for both sides. The results suggest that being randomly assigned to compete at the World Cup decreases bilateral trade for these pairs of countries by 1.5%. We also find that losing makes countries much more likely to import less from their competitors than winning. This “sore-loser” effect accords with findings in psychology that losers tend to be more likely to harbor feelings of resentment than winners (Kerr and van Schaik 1995; Wilson and Kerr 1999; Wobker 2015).

Beyond providing large- N statistical evidence that nationalism disrupts trade flows between countries, this study contributes to political science in several important ways. First,

it adds to an extensive research program on how biases and prejudices can shape economic behavior (e.g., Akerlof and Kranton 2000; Dahlberg, Edmark, and Lundqvist 2012; McConnell et al. 2017; Rho and Tomz 2017; Atkin, Colson-Sihra, and Shayo 2021). This literature demonstrates that in-group/out-group biases can shape the economic choices that individuals make in important ways. Our results confirm this finding at the country level.

Second, because the World Cup games can easily be categorized as wins and losses, our research design allows us to examine how the outcomes of nationalistic battles impact trade between countries. Specifically, we are able to investigate whether winning and losing have different effects. This supplementary analysis can help shed light on the conditions that make nationalistic animosities most likely to arise and have an impact in world politics.

Third, this study contributes to a growing body of research on how major sporting events affect politics (Healy, Malhotra, and Mo 2010; Gift and Miner 2017; Busby, Druckman, and Fredendall 2017; Depetris-Chauvin, Durante, and Campante 2020; Rosenzweig and Zhou 2021; Alrababa'h et al. 2021). Large spectator sporting events have been linked to spikes in domestic violence (Rees and Schnepel 2009; Quigg, Hughes, and Bellis 2012), government corruption (Maennig 2002; Dorsey 2016), and military conflict between countries (Markovits and Rensman 2010; Bertoli 2017). This study highlights another important and concerning consequence of international sports.

Our paper proceeds as follows. We first outline some theoretical pathways by which nationalist animosities could cause trade disruptions. We next discuss the literature on nationalistic antagonisms and trade flows. We then explain our research design in more detail. After that, we present our results. We then substantiate our statistical findings by

examining several cases where nationalistic antagonisms from World Cup games led to calls for boycotts. The final section concludes.

Theoretical Framework

How could nationalistic antagonisms affect trade flows? According to the sociologist Pierre Bourdieu (1984), we are defined by what we buy. Teenagers buy certain apparel to forge their emerging identities, and aspiring members of the middle class buy houses in particular areas to feel successful and signal their new socio-economic status. In this way, the consumption of certain goods, television programs, and music can all impact a person's self-identity and how others perceive them.

We hypothesize that these ideational considerations could lead to economic discrimination when people view other countries as rivals or competitors. Our hypothesis builds on Social Identity Theory (SIT), which was first developed by Tajfel and Turner (1979). The theory posits that individuals strive for positive self-esteem and that their self-assessments are tied to the status of their group memberships. Specifically, SIT predicts that individuals may rely on three identity management strategies to boost their feelings of self-worth (Huddy 2004). First, they may try to join elite clubs that have high social status. Second, they may practice social competition, which involves competing with another group to achieve material or symbolic gain. Third, they may engage in social creativity, which might involve reframing a negative in-group attribute as positive or shifting attention to some area where one's in-group excels.

Social competition and social creativity are particularly important for understanding why nationalists might discriminate economically. First, social competition could make

people reluctant to take any action that would benefit the members of a rival nation (Balabanis et al. 2001; Mutz and Kim 2017; Herrmann 2017; Mansfield, Mutz, and Brackbill 2019). Thus, they may prefer goods that were produced domestically or that come from countries that have better relations with their nation. By doing so, they are supporting other individuals who they perceive to be on their own side. Conversely, purchasing goods that are associated with a rival nation (e.g., buying Japanese automobiles for a Korean nationalist) could seem as disloyal to one's country.

A case in point is how Chinese nationalism has been driving the decline in the popularity of Apple products in China due to U.S.-China trade and tech wars. According to former diehard iPhone fan Wang Zhixin (quoted in the South China Morning Post), "There is a calling from my heart that I need to show support for Chinese brands, especially in the trade war climate" (Li 2019). Similarly, many nationalist Chinese citizens flooded social media platforms with comments such as "support Huawei" and "hang in there". When people perceive foreign nations as competitors, economic self-interest and personal taste may take the backseat (Mansfield and Mutz 2013; Colantone and Stanig 2018; Mutz and Lee 2020; Weiss and Wallace 2021).

In fact, a number of surveys have linked nationalism to support for protectionist trade policies (e.g., Rankin 2001; Mayda and Rodrik 2005; Mansfield and Mutz 2009). For instance, Mutz and Kim (2017) find that more nationalistic Americans exhibit stronger tendencies to support trade policies that benefit their fellow citizens and the U.S. economy overall. Further, they find that individuals who think in terms of intergroup competition sometimes oppose trade policies that benefit the United States if those policies also help the economy of another country. As they explain, "some Americans are significantly more supportive of policies when the trading partner loses, holding constant the benefits to the

US. Trade is not perceived as mutual cooperation for the collective benefit—it is about gaining an advantage over one’s competitors” (Mutz and Kim 2017). In sum, research at the individual level supports the notion that feelings of nationalistic competition can make people more opposed to trade.

Social Competition Hypothesis: Individuals are more likely to discriminate against imports from a rival nation if they perceive it to be in competition with their own nation.

Along with the social competition mechanism, social creativity could encourage individuals to develop biases against goods from a rival nation. According to SIT theorists, positive social identity is often based on favorable comparisons between one’s in-group and a relevant out-group, sometimes without much objective basis (Blanz et al. 1998; Brown 2020). In the context of nationalism, Orwell (1945b) observes, “[a nationalist] will generally claim superiority for it not only in military power and political virtue, but in art, literature, sport, structure of the language, the physical beauty of the inhabitants, and perhaps even in climate, scenery and cooking” (Orwell 1945b). This phenomenon that Orwell identifies is often driven by individuals’ tendency to transfer their out-group biases from one domain to another.

Although SIT theorists disagree about when people are most likely to engage in this type of chauvinistic behavior (Bettencourt et al. 2001; Brown 2020), we hypothesize that it is when they feel that their nations have failed in social competition. The reason is that denigrating the opposing side could provide people with a way to restore their group’s social status (Lalonde 1992; Blanz et al. 1998; Rubin, Badaea, and Jetten 2014). In contrast, we predict that people who feel like their nation has prevailed would be less

likely to engage in this type of social creativity, since they can focus on their victory in the social competition to boost their self-esteem.

Loser Discrimination Hypothesis: Individuals are more likely to denigrate imports from a rival nation when they feel that their nation has failed at social competition compared to when they believe that it has succeeded.

Building on social identity theories, we have specified two individual-level mechanisms that could explain when and how nationalism might shape attitudes towards imports from rival nations. There is an additional second order communal-level mechanism that could affect people's economic behavior: individuals may worry that purchasing imports from rival countries could have social consequences. This is because buying or owning products from a country that is widely viewed as a competitor could signal to others that one is not a committed member of the nation and therefore encourage sanctions from nationalists (Weiss 2014). For instance, it might be difficult for an individual from a community that strongly supported Brexit to buy a new German automobile without suffering from any social ridicule. Therefore, even non-nationalistic individuals might have good reason to discriminate against products from a rival country if they are surrounded by fervent nationalists.

Taking stock, there are strong theoretical reasons to believe that nationalist animosities could hamper bilateral trade. Such sentiments could lead people to resist the economic and cultural influence of a rival nation, denigrate its products, and make them fear social sanctions from their fellow citizens. Empirically, we expect these dynamics to manifest when two nations are in direct competition with each other, and we expect losing to make the discriminatory effects worse. We will soon test these hypotheses with our data. Before

doing so, we will discuss the existing literature on nationalistic antagonisms and trade flows. This research provides an important foundation for the empirical analysis that we will do in this study.

Prior Studies on Nationalistic Animosity and Trade Flows

A number of recent articles indicate that nationalistic animosity can disrupt trade between countries. One notable case is the boycotts between France and the U.S. over the Iraq War. Michaels and Zhi (2010) estimate that it led to a 9% drop in total annual trade between the two nations. Looking at more fine-grained data, Chavis and Leslie (2009) estimate that the disagreement caused a 13% drop in French Wine sales in the United States from mid-February to mid-August of 2003. In addition, Pandya and Venkatesan (2016) find that supermarket shoppers in the United States were slightly less likely to buy brands with French-sounding names, providing more evidence of consumer discrimination.

Several other studies focus on nationalistic disputes between China and its trading partners, especially Japan (e.g., Che et al. 2015; Heilmann 2016; Luo and Zhou 2019). One such case occurred after the Japanese government authorized the use of a history textbook in 2005 that whitewashed Japanese atrocities during World War II (Fisman, Hamao, and Wang 2014). Other studies find that China tends to import less from countries after they receive visits from the Dalai Lama (Fuchs and Klann 2013; Lin, Hu, and Fuchs 2019). At a more general level, Du et al. (2017) finds that nationalistic animosity has caused temporary drops in trade between China and a number of its trading partners, including France, India, Russia, and the United States.

Researchers have reached similar conclusions in a number of other contexts as well. For example, Fouka and Voth (2016) find that the 2010-2014 sovereign debt dispute between

Germany and Greece led to a sharp decline in the sale of German cars in Greece, especially in regions where the Nazis carried out massacres during World War II. In the Middle Eastern context, Clerides, Davis, and Michis (2015) find that U.S. soft drink sales dropped substantially in seven countries during the Iraq War. Similarly, Heilmann (2016) finds that Danish annual exports to Muslim countries dropped by 18.8% following the Muhammad cartoon controversy in 2005/2006.

However, two notable studies raise questions about whether nationalistic antagonisms really depress trade. The first looks at French wine sales in the United States after the Iraq War started (Ashenfelter, Ciccarella, and Shatz 2007). It concludes that wine sales did decline, but that the drop is best explained by seasonal variability in wine consumption, which tends to be higher in November-January than February-May. It also attributes some of the drop in sales to a pre-existing decline in French wine sales in the United States that predates the Iraq War. The second study looks at political conflicts between the United States/France (1990-2004) and China/Japan (1990-2006). The study's econometric models suggest that political conflicts have little impact on trade levels (Davis and Meunier 2011).

These studies make an important contribution to the literature by showing how challenging it can be to estimate the impact of nationalistic antagonisms on trade. Bilateral trade levels constantly shift. In a given case, researchers must rely on econometric modelling to isolate the impact of the rise in nationalistic animosities. In this context, much can depend on modelling choices.

This point is well-demonstrated by the contrasting results of the research on how the Iraq War affected trade between the U.S. and France. Michaels and Zhi (2010) conclude that the dispute led to a 9% drop in trade, whereas Davis and Meunier (2011) do not find

an effect. Regarding this discrepancy, Davis and Meunier (2011) explain, “They estimate the effect of crisis as change of trade shares after 2002, whereas we assess the rise and fall of tensions impact on trade levels” (Davis and Meunier 2011). This difference in design choice apparently led the two studies to draw very different conclusions about the case.

Another limitation is that prior studies have tended to look at a relatively small number of cases. No doubt, this in-depth case research brings advantages for learning about important historical examples. However, it remains unclear whether the cases these studies focus on are highly atypical. Therefore, understanding how nationalistic antagonisms affect trade on a broad scale requires a more comprehensive analysis that includes a wide-range of country dyads.

In the next section, we lay out a new research approach for studying nationalistic animosities and trade. Our methodology allows for a straightforward statistical test with a very large sample size and minimal modelling assumptions.

Research Design

To test the hypothesis that nationalist animosities disrupt trade between countries on a broad scale, we look at the World Cup. The first major advantage with using this approach is that it provides an avenue to study nationalism, which has been a very difficult topic to investigate empirically because of significant data limitations. The central problem impeding quantitative research in this area has been that social scientists lack a comprehensive dataset that tracks levels of nationalistic animosities between countries. However, many scholars acknowledge that major international soccer tournaments often make nationalistic tensions much worse, especially for countries where soccer is very popular (Cha 2009; Markovits and Rensmann 2010; Gift and Miner 2017).

One prominent example was the Moscow Dynamo soccer team's controversial trip to Britain in 1945, which had to be cancelled early because the games were inflaming nationalistic animosities between the Soviet and British people (Kowalski and Porter 1997). The incident prompted Orwell (1945a) to describe international sports as "war minus the shooting". He wrote, "If you wanted to add to the vast fund of ill-will existing in the world at this moment, you could hardly do it better than by a series of football matches between Jews and Arabs, Germans and Czechs, Indians and British, Russians and Poles, and Italians and Jugoslavs, each match to be watched by a mixed audience of 100,000 spectators" (Orwell 1945a).

Other scholars have identified the potential for international soccer to provoke nationalistic antagonisms across a wide range of other contexts (e.g., Sack and Suster 2000; Tzanelli 2006; Maguire et al. 2009; Vincent et al. 2010; Bertoli 2017). For instance, Maguire, Poulton, and Possamai (1999) show that the press coverage in England and Germany of the Euro 1996 exhibited an "intense form of national identity discourse in opposition to further European integration". Looking at the history of Turkish soccer since the 1950s, Bora and Senyuva (2011) describe it as being "national and chauvinistic in nature", with the media sometimes referring to players "as 'the soldiers' or 'our proud fighters'". Falcous (2015) writes regarding New Zealand's press coverage of the 2010 World Cup, "the caricaturing of other nationalities is also used to bolster the national self – in particular the Italians" (who New Zealand played in the group stage).

The second advantage of using the World Cup is that the group stage randomization process provides us with a natural experiment where certain pairs of countries were randomly assigned to compete against each other. This natural experiment also has a very large sample size ($n=3622$ pairs). Therefore, if nationalism from World Cup competition

Figure 1. Pots and Groups for the 1994 World Cup

Pots for the 1994 World Cup

Pot 1	Pot 2	Pot 3	Pot 4
United States	Bulgaria	Greece	Cameroon
Germany	Ireland	Norway	Morocco
Argentina	Netherlands	Sweden	Nigeria
Belgium	Romania	Switzerland	Bolivia
Brazil	Spain	South Korea	Colombia
Italy	Russia	Saudi Arabia	Mexico

Groups for the 1994 World Cup

Group 1	Group 2	Group 3	Group 4	Group 5	Group 6
United States	Brazil	Germany	Argentina	Italy	Belgium
Romania	Russia	Spain	Bulgaria	Ireland	Netherlands
Switzerland	Sweden	South Korea	Greece	Norway	Saudi Arabia
Colombia	Cameroon	Bolivia	Nigeria	Mexico	Morocco

Notes: Each of the six groups was constructed by randomly selecting one country from each pot. Countries assigned to the same group played against each other in the group stage. This draw took place in December of 1993. The draws typically occur in the December or January prior to the World Cup.

does undermine trade between countries, it should be fairly straightforward to identify this effect in the data.

Over the entire history of the World Cup, the basic format of the group stage randomization process has been essentially the same. First, each participating country is put into one of four pots. These pots are usually based on geography, although they are sometimes based on international soccer rankings. Next, groups are created by randomly selecting one team from each pot. Figure 1 shows the pots and groups for the 1994 World Cup, and the details from all other World Cups are provided in the Online Appendix (pp. 3-13).

Because half of the World Cup participants failed to advance to the knockout stage, the selection of groups largely determined which countries played each other at the World Cup. Two countries that were selected into the same group were guaranteed to play against

each other, whereas two countries that were not ended up playing in the knockout stage only about 4.6% of the time. Thus, group selection was key to determining which countries played head-to-head.

The random assignment of countries to groups created a natural experiment that allows us to estimate how World Cup competition affects bilateral trade. Roughly speaking, we can do this by comparing the pairs of countries that were randomly assigned to play against each other to the pairs of countries that could have been randomly assigned to play against each other but were instead assigned to different groups. The pairs of countries that were selected to play against each other comprise the treatment group, whereas the other pairs can be thought of as the control group.

One complication here is that the likelihood of being selected to the same group was not equal for all pairs of countries, simply because the size and format of the World Cup has varied slightly over the years. Nevertheless, since the randomization scheme for each World Cup was well-documented, we can handle this issue with randomization (or permutation) inference. We will discuss how this can be done in more detail after we explain the outcome variables that we use.

Outcome Variables. We obtained data for trade from the Correlates of War Trade dataset (v4.0), which provides yearly bilateral trade data for the time period 1870-2014 (Barbieri, Keshk, and Pollins 2009; Barbieri and Keshk 2016). This data primarily came from the International Monetary Fund records. For the 2018 World Cup, we obtained the data from the UN Comtrade database, which is also based on International Monetary Fund records (UN Comtrade 2021). Because these data sources lacked trade data for a small percentage of our pairs of countries, we had to drop some of them from our analysis. Of the 4080 pairs of nations that were randomly assigned or could have been randomly assigned to

play against each other in the World Cup group stage from 1930 to 2018, we were able to obtain bilateral trade levels for 3622 of them (roughly 89%). Of these 3622 pairs, 549 were randomly assigned to play against each other. As mentioned before, the remaining 3073 dyads can be viewed as our “control” pairs.

We operationalize shifts in trade flows in two ways. First, we look at how much bilateral trade increased or decreased in percentage terms between the World Cup year and the previous year. This approach provides estimates that are straightforward to interpret. However, it also places more weight on the pairs of countries with lower levels of baseline trade, since these dyads tend to experience larger swings in yearly trade (in percentage terms) than dyads with higher levels of baseline trade. To account for this issue, we also look at whether pairs of countries experienced a drop in trade during the World Cup year, coded as a binary {0,1} variable. This approach avoids unnecessarily upweighting certain dyads in the sample.

When calculating percentage changes in bilateral trade, we noticed that some pairs of countries were coded as having very large trade swings, likely due to measurement error for certain dyads in the data. For instance, Angola and Croatia (2006) are reported to have experienced a 148,416% increase in bilateral trade between 2005 and 2006. The reason for these large swings is that not all countries accurately report data to the IMF due to lack of resource capacity. To prevent cases like these from adding excessive noise to the results, we capped large trade swings at +/-20%. Our results are quite robust to where we set this cap. In fact, they remain statistically significant if the cap is set anywhere from 3%-80%. We set it at 20% because that is close to the maximum amount that past research has found a large surge of nationalism can impact trade (Heilmann 2016). Admittedly, capping the

data in this way might cause us to slightly underestimate the true effect, but it is necessary to do this to reduce noise in the data.

Also, when coding whether a pair of countries had a drop in trade during the World Cup year, we looked at whether their trade during the World Cup year was lower than what would be expected given their trade levels in the previous five years. Our procedure was as follows: First, we took each pair of countries and plotted a regression line through their trade levels in the five years prior to the World Cup year. We then checked if their trade during the World Cup year was above or below the line. This method is preferable to simply comparing trade during the World Cup year to the previous year, because many pairs of countries never experience a drop in trade relative to the previous year. With such an approach, these dyads would effectively be left out of the analysis. In contrast, our method of considering the trend in trade from the previous five years incorporates these dyads into our statistical tests.

Because we look at aggregate yearly trade data rather than trade in specific sectors, our outcome variable should capture discrimination in any sector of the economy. Using aggregate trade data also keeps our article consistent with many past studies on nationalistic animosities and trade (Michaels and Zhi 2010; Che et al. 2015; Du et al. 2017). These studies find that nationalistic antagonisms adversely affected aggregate trade flows in a number of specific cases. Thus, focusing on total bilateral trade flows between countries follows precedents set in past research.

Randomization Inference. To analyze the data, we use the standard approach when dealing with a complicated randomization scheme, which is randomization (or permutation) inference. Randomization inference is a classic statistical method that was famously illustrated by R.A. Fisher in his famous Lady Tasting Tea experiment (Fisher 1937). It remains

commonly used today because of its ability to handle contexts where units have unequal and correlated probabilities of treatment assignment (Ho and Imai 2006; White, Laird, and Allen 2014; Dahlgard 2018; Hager, Krakowski, and Schaub 2019).

The first step of randomization inference is to calculate the test statistic, or average outcome of interest, for the real data. In our case, we have two test statistics: (1) the average percentage change in trade of the 549 pairs of countries that were randomly assigned to compete at the World Cup and (2) the total percentage of these 549 pairs that experienced a drop in trade compared to baseline expectations (our binary $\{0,1\}$ variable). The next step is to test whether the values of these test statistics are unusually high or low. We can do this by redoing the randomization many times and calculating the values of the test statistics in each of these hypothetical scenarios.

If the treatment, in this case World Cup competition, had no effect on the outcome, then our two real test statistics should be pretty similar to the values from the hypothetical randomizations. After all, if the treatment did not impact the outcome, then which units were actually assigned to treatment or control should have no bearing on the outcome. On the other hand, if the treatment did have a meaningful effect, then we should expect the real test statistics to look different than the vast majority of the values from the hypothetical randomizations.

Control Variables. Although we have a natural experiment that does not necessitate covariate adjustment, we do run regression models where we control for some important baseline factors. Researchers often do this for natural experiments because it can increase statistical power (Getmansky and Zeitzoff 2014; Carnegie and Marinov 2017; Hangartner et al. 2019). The covariates that we include are the natural log of the distance between the two countries, whether both of the countries were members of the GATT or WTO, whether

both of the countries were EU members, whether both of the countries were democracies, the religious similarity between the two countries, whether the countries were contiguous, whether the countries had a colonial history or were both colonies of the same colonial power, whether the countries had an alliance in the previous year, and whether the countries engaged in any military disputes against each other in the previous year. We were able to obtain data on these control variables for all 3622 pairs of countries in our sample from the Correlates of War database (Singer, Bremer, and Stuckey 1972; Singer 1987; Stinnett et al. 2002; Gibler 2009; Correlates of War Project 2016; Palmer et al. 2021), the CEPII database (Head, Mayer, and Ries 2010), and the Polity IV database (Marshall, Gurr, and Jaggers 2013).

Countries Where Soccer Is the Most Popular Sport. Following Bertoli (2017), we run additional tests that focus on countries where soccer is the most popular sport. We do this as a design check, because it makes sense to expect the results to be stronger for these countries. Because soccer is so well-liked internationally, it was the most popular sport in almost all of the countries that went to the World Cup from 1930-2018. We code the exceptions as the United States, Australia, New Zealand, Canada, Trinidad and Tobago, Jamaica, Japan, and Cuba.

Results

Table 1 presents the main results. Being randomized to compete at the World Cup appears to decrease bilateral trade by 1.2%. This translates to an increase in the likelihood that two countries will experience a drop in trade by about 5.3 percentage points. For pairs of countries where soccer is the most popular sport, the estimated effect is larger. Being

Table 1. Testing How Being Randomized to Compete at the World Cup Impacts Bilateral Trade Between Countries

	Regression Estimate	Regression p-value	Randomization Inference p-value	n
Percentage Change in Trade				
All Dyads	-1.2* (0.6)	0.034	0.044	3622
Soccer Dyads	-1.5* (0.6)	0.020	0.024	3102
Change in Probability of Drop in Trade (in percentage points)				
All Dyads	5.3** (1.9)	0.008	0.016	3622
Soccer Dyads	6.7** (2.0)	0.002	0.005	3102

Notes: Soccer dyads are the pairs of countries where soccer is the most popular sport for both sides. We include year fixed-effects in the regression models, since the probability that two countries would be randomly assigned to play against each other decreased substantially as the number of countries that participated in the World Cup increased over time. All p-values are one-tailed. For the regression models involving the drop in trade, which is a binary variable $\{0,1\}$, we use linear probability models. However, the p-values are nearly identical if we use logistic regression or probit models. * $p < 0.05$, ** $p < 0.01$

randomized to compete at the World Cup appears to decrease bilateral trade by 1.5% for these countries, increasing the likelihood that they will experience a drop in trade by 6.7 percentage points. These results are statistically significant for both regression analysis and randomization inference.

We next examine how the outcomes of games affect trade flows. For this analysis, we use a regression discontinuity approach to estimate how changing from barely losing to

Table 2. Analyzing How Losing Affects a Country's Imports from the Nation That Defeated It

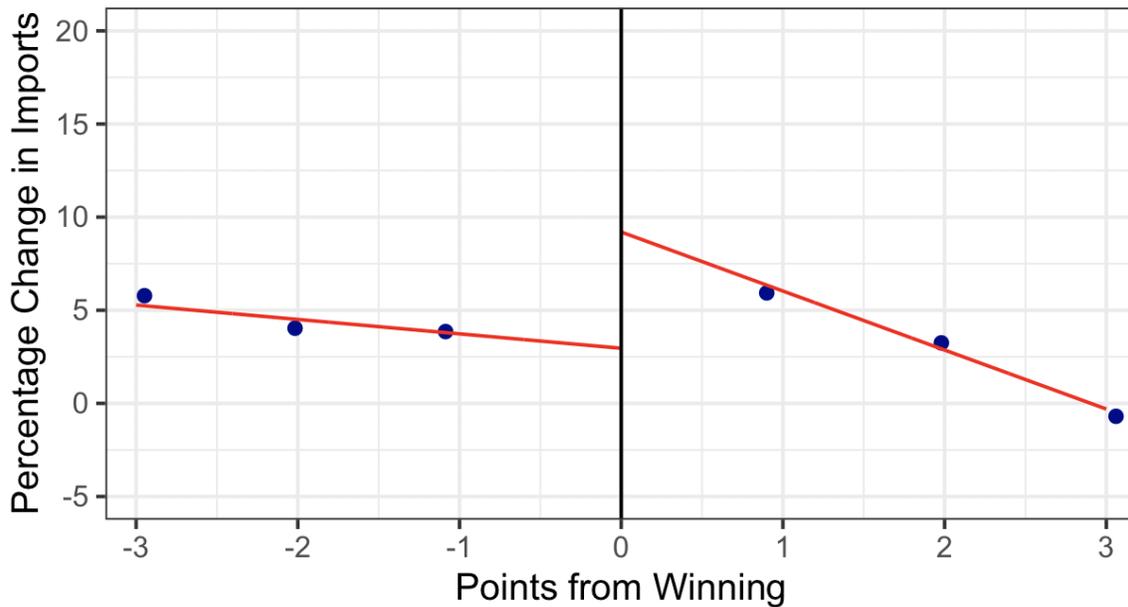
	RDD Estimate with controls	p-value	RDD Estimate without controls	p-value	n
Percentage Change in Imports					
All Countries	-6.1** (1.8)	0.002	-6.2** (1.9)	0.003	1128
Soccer Countries	-6.2** (1.9)	0.005	-6.2** (2.0)	0.008	1071
Change in Probability of Drop in Imports (in percentage points)					
All Countries	12.1* (5.7)	0.039	12.1* (6.0)	0.045	1128
Soccer Countries	14.3* (5.9)	0.021	14.6* (6.1)	0.023	1071

Notes: This table shows the regression discontinuity estimates for how losing impacts the likelihood of a drop in imports (compared to winning). Our tests use local linear regression with the `rdrobust` optimal bandwidth of $h \approx 3.6$ (Calonico, Cattaneo, and Titiunik 2014). Estimates are presented in percentage points with one-tailed p-values. * $p < 0.05$, ** $p < 0.01$

barely winning affects the likelihood that countries experience a drop in imports from their World Cup competitor. Table 2 shows the results from this analysis. Losing appears to decrease imports from the other side by 6.1% (compared to winning). This translates to a 12.1 percentage point increase in the likelihood that countries will experience a drop in imports from the country that defeated them. As in Table 1, the results are driven by countries where soccer is the most popular sport.

Figure 2 plots the data around the cut-point, using the `rdrobust` optimal bandwidth of $h \approx 3.6$. On both sides of the cut-point, there is a clear linear downward trend. However, the graph shows a notable discontinuity at the cut-point as countries move from barely losing

Figure 2. Illustrating the Discontinuity at the Cut-point



to barely winning. The data therefore appears to be very linear except where countries shift from losing to winning, where we see a clear difference.

This “sore-loser” effect provides support for the social creativity mechanism, and it makes sense intuitively. When a nation prevails over its World Cup rival, its citizens can focus on their nation’s achievement on the soccer field as prime fodder to denigrate the rival nation and boost their own positive self-esteem. There is therefore less need for those citizens to denigrate imports from the rival nation for status purposes. In contrast, when a nation loses, its citizens would find it difficult to construct a narrative of national superiority relative to the victorious nation centered around soccer. Consequently, citizens from the losing nation are likely to focus on other inter-group differences in order to boost their in-group’s status, from food (e.g., “Italy has better cheese than France”) to fashion (“Italian fashion houses design better dresses than the French grand couturier”). These creative

attempts at boosting in-group status could easily spill over to the arena of consumption and reduce a losing nation's imports from the victorious nation.

The results in this section prove very robust. For example, they hold after controlling for a wide range of covariates using many different regression models, as we show in the Online Appendix (pp. 16-18). The dyadic results also hold if we include fixed-effects for country-pairs. This approach draws the inference from within-pair variation across different World Cup years, which could increase statistical power. The downside, however, is that it ignores country-pairs that only appeared together in the World Cup one time. The results are also quite robust to adjusting the range of prior years that we use to predict trade levels during the year of the World Cup. In our main analysis, we set this range at five years (as we explain at the top of Page 15). However, the results in Tables 1 and 2 hold at the 5% level if we set this range anywhere between four and eight years. For our analysis in this section, we used the five-year interval because that was the range that we initially selected and we wanted to limit problems that could arise from multiple testing. Our results for this interval proved very strong. Our combined one-tailed p-value from the tests in Tables 1 and 2 is around 1/1000 ($p \approx 0.001$).

Qualitative Evidence

In addition to our statistical findings, we identified several cases where nationalistic antagonisms from World Cup games resulted in calls for boycotts. We focus on boycotts because they are a visible manifestation of economic discrimination. They are therefore more straightforward to identify in the historical record than more subtle forms of economic discrimination like economic biases. Importantly, a World Cup game does not need

to provoke an explicit call for a boycott to reduce trade, as it could lead to economic discrimination through less visible channels. However, from a methodological perspective, it helps to search for boycotts because they show a fairly clear and direct connection between World Cup games and economic preferences.

Italy-Chile (1962)–The Battle of Santiago. Shortly before the 1962 World Cup in Chile, two Italian reporters wrote derogatory commentaries about the country in Italian newspapers (Burnton 2018). The articles were picked up by the Chilean press and sparked widespread nationalistic outrage (Heffernan 2014). When the two countries met on the playing field in their group stage match, the game quickly spiralled into a brawl. As Heffernan (2014) describes, “At times the match resembled rugby, other times boxing, yet seldom did it resemble football”. Chilean police were required to intervene in the game several times (Heffernan 2014; Burnton 2018). The match is still remembered as one of the most violent in World Cup history (Burnton 2018; Telegraph 2020). In the aftermath, Italian restaurants were boycotted in Chile, and Italians were banned from many bars, restaurants, and supermarkets (Telegraph 2020). Nationalistic fervor also ran high in Italy, and the Italian army was required to protect the Chilean consulate (Heffernan 2014).

United States-Belgium (2014). The United States played Belgium in a knockout stage match at the 2014 World Cup in Brazil. Belgium won the game 2-1. Prior to the match, Waffle House called for a boycott of Belgium waffles on Twitter. The statement received over 17 thousand retweets and ten thousand likes (Stein 2014). The boycott was publicized by many media outlets, including ABC News, the Huffington Post, TMZ, and Today (Stein 2014). The fast-food chain Bonjangles also supported the boycott (Kim 2014). In addition, some restaurants announced that they would not serve Belgian beer on the day of the

match, including the Los Angeles gastropub chain Barney's Beanery and the New York sports bar Professor Thom's (Fougner 2014). AL.com also called for a boycott of the Belgian company Budweiser, Belgian waffles, and the Belgian chocolate company Godiva (Fambro 2014). It is interesting that these calls for a boycott occurred in a country where soccer is not the most popular sport. However, the popularity of soccer in the United States has increased greatly in recent decades. In fact, the 2014 U.S.-Belgium game averaged about 16.5 million viewers within the United States (Deitsch 2014).

England-Sweden (2018). At the 2018 World Cup in Russia, Sweden played England in a quarterfinal matchup. Prior to the game, many English fans announced on social media that they were boycotting IKEA ahead of the game (Hawkins 2018; Ikonen 2018). A large number of fans also stated that they would never shop at IKEA again if England lost the game (Hawkins 2018; Ikonen 2018). Some also urged other people in England to join them in their effort (Hawkins 2018; Ikonen 2018). After England won the game 2-0, some English fans stormed and vandalized an IKEA in London (Baker 2018; MARCA 2018; Tobin 2018).

Cricket Example: England-Australia (1930). We also provide one case involving a different sport to show that the effect found in this paper can extend to sports beyond soccer. One of the greatest diplomatic disputes in the history of Anglo-Australian relations came from a cricket controversy in 1932. This disagreement arose after the English team invented a dangerous style of pitching called "Bodyline" that involved throwing the ball directly at the batter. The incident caused widespread outrage in both countries. It sparked riots, prompted boycotts, incited acts of vandalism, and created feelings of antagonism between the two sides that lasted until World War II (Frith 2013, Swan 2013). Some modern-day Australian politicians and historians consider "Bodyline" to be one of the two

major historical events that led Australia to seek independence in 1940, the other being the Great Depression (Swan 2013).

Conclusion

This study reaches two important findings that shed light on the impact of nationalistic animosities in international relations. First, countries are more likely to experience drops in trade when they are randomly assigned to compete against each other at the World Cup. Second, losing makes countries much more likely to import less from the countries that defeated them. The first finding comes from a large randomized natural experiment, and the second comes from a separate regression discontinuity design. In both cases, the results are stronger for countries where soccer is the most popular sport. Both of our results also prove very robust. In sum, the findings of this study provide strong evidence that nationalism from the World Cup has a meaningful impact on trade relations between countries.

This conclusion has important implications for understanding when, why, and how nationalistic tensions shape economic behavior. Most importantly, our results highlight the potential for international trade to be influenced by nationalist animosities from other sources, such as immigration, electoral campaigns, and international political disputes. Moreover, our “sore-loser” finding suggests that the impact of these sources of nationalism may be greatest when they feature victimhood narratives that portray nations as being harmed by outside enemies. Such forms of insecure nationalism may make individuals more likely to engage in out-group denigration that could result in deliberate or subconscious economic discrimination.

Our findings also indicate that international sporting events themselves can be an important source of nationalistic tensions. The World Cup pits many pairs of countries to

compete against each other every four years, making its cumulative impact very important. There are also other major international sporting events like the Olympics, the Euro Cup, the African Cup of Nations, the Rugby World Cup, and the Cricket World Cup that may have similar effects as the World Cup. Therefore, the aggregate impact of these sports tournaments could be substantial. More research should be done to examine the potential effects of sporting events like these on trade relations between countries. Such research could look at other important political and economic outcomes as well.

In conclusion, this study uncovers noteworthy evidence of a causal relationship between nationalist antagonisms induced by the World Cup and trade flows between countries. These findings highlight the importance of investigating the conditions under which nationalism will disrupt trade. We hope that this study will encourage more research about how nationalism and other ideational factors shape economic outcomes. At once, we are both homo economicus and homo sociologicus.

Supporting Information

Additional information can be found in the Online Appendix.

Appendix 1: Re-Randomization Process

Appendix 2: World Cup Groups

Appendix 3: Verifying Balance in the Data

Appendix 4: Controlling for Baseline Covariates

Appendix 5: Full Regression Tables

Appendix 6: Data Sources

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