How the 'Hand of Henry' Benefited the South African Economy

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Abstract

This paper highlights an aspect of mega-events that has been neglected: the changing composition of tourist arrivals during and after the event. The change happens because, in the FIFA World Cup, a quota of countries participates from each continent and this opens up new tourism markets. We show that the 2010 FIFA World Cup in South Africa had a smaller growth effect on South Africa's traditional tourism markets but attracted a large increase from non-traditional ones. However, the size of the effect, we find, is partly due to randomness: it depends on match results in the qualification phase of the tournament. We use a new long-run dataset of tourism flows to South Africa and a gravity model for tourism flows and run counterfactual examples of play-off matches during the qualification phase to estimate how much more South Africa could have benefited had larger or richer countries qualified. We conclude that the random results of a few play-off games significantly affect the extent to which the World Cup benefits the host country's economy.

JEL Codes: C8, N3, N4

Keywords: mega-event, tourism, FIFA World Cup, football, soccer, South Africa, gravity model, counterfactual analysis

1 Introduction

On 18 November 2009, with 17 minutes left of extra time in a play-off FIFA World Cup game between the Republic of Ireland and France, Thierry Henry, France's striker, handled the ball in the in-goal area, deflecting it to William Gallas who headed it into the back of the net.[1] The goal allowed France to draw the game and win the play-off series of two games by two goals to one, which

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[1] Thierry Henry afterwards admitted to Irish defender Richard Dunne that he had handled the ball.

meant they qualified for the 2010 FIFA World Cup in South Africa while the Republic of Ireland did not.

We argue in this paper that Henry's illegal action benefited – and still benefits – the South African economy. This is because the population size of the countries that participate in the World Cup matters for the host nation's economy. As far as we are aware, this aspect of the World Cup qualification phase has never been noted, or quantified, in previous research.

To show that the effects of participating country size are indeed large, we use a new dataset of all South African tourist arrivals from 1995 to 2013 and enter it into a gravity model. This allows us to control for other factors that may or may not affect tourism flows on a global scale, such as economic growth, population increase, distance between countries, and historical and cultural specifics. We first show that an overlooked benefit of the 2010 World Cup is the way it increased tourism from non-traditional tourism partners. The event had little effect on the country's traditional partners, such as Britain, the Netherlands and Germany, but tourism from Latin American countries – Brazil, Mexico and Argentina, and also the smaller countries Honduras, Chile and Uruguay – increased significantly both during and after the event.

We then show that who participates in the tournament matters for tourist arrivals. This should not come as a surprise, and nor should the fact that play-off games have implications not only for the countries involved in the matches but also for the host country. We consider three examples in the qualification phase of the 2010 tournament: Algeria versus Egypt, Slovenia versus Russia and, as mentioned above, France versus the Republic of Ireland. In the first two duels the South African economy lost because the smaller (and poorer) country won. But in the third the 'hand of Henry' gave France the place in the finals instead of Ireland, and the South African economy scored too.

2 Tourism and the World Cup

Controversy is never far from the World Cup. Even in academic circles, debate has raged about the benefits and costs of the event. Most sport economists would agree that mega-events like the World Cup are a fairly risky undertaking with low pay-offs (Szymanski 2002; Baade and Matheson 2004). Even when the benefits and costs are limited to the host nation's tourism industry, uncertainty about the net effect remains. One way to settle the arguments is to quantify the counterfactual: what would tourism numbers have been had the event not taken place? There is little doubt that regular tourists are displaced by soccer-loving ones. We see time displacement, in which visitors, depending on whether they are soccer fans or not, reschedule their trips to coincide with or avoid periods that overlap with the World Cup, and place displacement, in which they choose or avoid cities that are hosting the World Cup. Evidence has been produced for both types of displacement or crowding-out (Preuss, 2011; Fourie, Siebrits, & Spronk, 2011).

Both types of displacement may have serious consequences for the tourism

industry. Regular visitors to a city may opt to skip it during the season or even for the entire year of the World Cup to make way for soccer enthusiasts. But the fans who visit only for the game are not likely to be loyal to a destination and may not return in the years that follow. And since the regulars who sample a new destination to avoid the World Cup may be hooked and never return at all, the host country may find its reliable annual supply of tourists being replaced by a one-off season of plenty (Preuss & Solberg, 2006). The legacy of the World Cup may thus be an actual decline in tourist numbers.

Despite this possibility, however, most studies that use aggregated numbers of tourist arrivals find evidence that mega-events like the World Cup benefit the economy, at least in the year that the event is held. Rose and Spiegel (2011), for example, find that events like the Olympic Games have a significant positive effect on a country's export performance.[2] Using the same model as Rose and Spiegel but with tourism flows as the dependent variable, Fourie and Santana-Gallego (2011) find that, all things being equal, a mega-event increases tourism flows by 8% in the year that the event is held. They also find some positive effect on the years preceding the event, but no significant effect in the years following.

While *ex ante* tourism impact studies are apt to make optimistic predictions, *ex post* studies are generally more reserved in their assessment. The contrast was evident in the case of the 2010 World Cup in South Africa. Early predictions were that the country would receive from 230,000 to close to 500,000 additional international visitors.[3] The reality, of course, was more modest. Du Plessis and Maennig (2011) combine high-frequency visitor arrival numbers with hotel occupancy rates to arrive at an estimate of between 90,000 and 108,000 additional tourists during the event. Their data are limited to the year of the event and the year leading up to it but do not include any following years. In the most thorough analysis so far, Peeters, Matheson and Szymanski (2014) use monthly country-by-country arrival data to assess the impact of the World Cup on South Africa's tourism. They find that it attracted around 220,000 non-SADC tourists during the event,[4] and 300,000 of them over the entire year of the event. But, like the above-cited authors, they are also unable to measure the long-term effect of the event.

This paper sets out to establish two things. First we calculate, using a standard gravity model of South African tourism flows between 1995 and 2013, the size of the effect of the 2010 World Cup on South African tourism, both during and after the event. We show that the biggest growth areas were in those markets that are not traditional origin countries for tourist arrivals in the country. Second, we test whether the size of this impact depends on the qualification phase of the World Cup. Our results show clearly that Thierry

[2] Maennig and Richter (2012) show that this effect might be due to sample selection bias.

[3] Unsurprisingly, these early predictions by consulting firm Grant Thornton are no longer available on their website. These figures are from citations in two research papers by Du Plessis and Maennig (2011) and Peeters, et al. (2014).

[4] Southern African Development Community – see www.sadc.int/member-states/ for a list of member states.

Henry's illegal handball in 2009 benefited the South African economy.

3 Attracting New Markets

Thirty-two teams compete in the final of the FIFA World Cup. In South Africa in 2010, 13 were from Europe (UEFA). Of the remaining places, six went to African teams (CAF), including the host country South Africa, five to South America (CONMEBOL), three to Asia (AFC), three to North and Central America and the Caribbean (CONCACAF), and one to Oceania (OFC). This geographical spread had two consequences: not all the countries that are South Africa's traditional tourism markets could participate in the tournament, and several countries that are not did participate. This situation allows us to assess the effect of the 2010 World Cup, both during and after the event, on tourism statistics from the participating countries.

We do so using a gravity model of South Africa's tourist arrivals from 1995 to 2013. Gravity models are ubiquitous in the trade literature: they are used to assess the effect of regional trade agreements (Carrere, 2006; Kimura & Lee, 2006; Baier & Bergstrand, 2007), colonial ties (Head, Mayer, & Ries, 2010) and mega-events (Rose & Spiegel, 2011), among other things. They are increasingly used in tourism research (Eilat & Einav, 2004; Khadaroo & Seetanah, 2008; Neumayer, 2010; De Vita, 2014). Morley, Rosselló, and Santana-Gallego (2014) have shown that gravity models for tourism can be derived from consumer choice theory to explain bilateral tourism. Unsurprisingly, a gravity model for tourism has also been used to estimate the impact of mega-events on tourist arrivals (Fourie & Santana-Gallego, 2011).

In this model we use the same method as Fourie and Santana-Gallego (2011) but we include only South Africa's bilateral tourism relations. Consequently, our equation can be defined as follows:

$$LnTA_{it} = \beta_0 + \beta_1 LnGDPpc_{it} + \beta_2 LnPop_{it} + \beta_3 \mathrm{Re}lPPP_{it} + \beta_4 PolStab_{it} + \lambda' WC_{it} + \alpha_i + \eta_t + \varepsilon_{it}$$

where $LnTA_{it}$ is the logarithm of tourist arrivals in South Africa from origin i at year t. $LnGDPpc_{it}$ is the logarithm of the origin country's GDP per capita and $LnPop_{it}$ is the logarithm of the origin country's population. These two variables control for the size of the tourism demand from the origin country. $RelPPP_{it}$ is the relative purchasing power parity between the origin country and South Africa and is a proxy for the relative price. $PolStab_{it}$ is the political stability index for the origin country. WC_{it} is a set of dummy variables of interest related to the 2010 World Cup. The model is estimated using Ordinary Least Squares and controlling for origin fixed effects (α_i) and year fixed effects (η_t). We use 2006 as the reference category because it was the last year before our anticipation effect starts and the last year before the financial crisis, so any increase we are likely to see will be as a result of the World Cup (given that we are controlling for GDP, etc.). The origin fixed effects absorb all time-invariant origin country characteristics, such as the distance to South Africa, sharing a

common border, sharing a common language and other variables traditionally considered in the gravity model.

The dependent variable is the logarithm of tourist arrivals in South Africa disaggregated by origin country. These data are obtained from the United Nations World Tourism Organization and comprise 203 origin countries for the period 1995–2013. As this database includes three years after the event was held in 2010, it allows us to estimate more than just the immediate effect of the World Cup on tourism flows to South Africa. Data for GDP per capita, population and the purchasing power parity (PPP) conversion factor are obtained from the World Development Indicators dataset, and the political stability index from the Worldwide Governance Indicators database.[5]

Table 1 presents the results of estimating equation 1. We use two specifications. Specification 1 includes three dummy variables related to the effect of the World Cup on the economy of South Africa: (i) $Anticipate_{it}$ takes the value 1 for the three years before the event was hosted (2007–2009) to control for possible leads (the anticipation effect) in the effect of the World Cup, and zero otherwise; (ii) $WorldCup_{it}$ takes the value 1 for 2010 when the event was held, and zero otherwise; and (iii) $Legacy_{it}$ takes the value 1 for the three years after the event (2011–2013) to control for possible lags (the legacy effect) in the effect of the World Cup, and zero otherwise. Specification 2 splits the dummies for the World Cup and legacy effect according to whether the origin country participates in the event (*Participant*) or not (*Non-participant).*

All the coefficients of the standard gravity variables are significant and have the expected sign. The variables related to the demand size have a positive effect on tourist arrivals in South Africa; that is, the higher the GDP per capita of the origin country and/or the greater the population, the more tourists visit South Africa. If the origin country has a higher relative PPP than South Africa, this increases the number of tourist arrivals. In other words, if South Africa's prices are lower than those of the origin country, this boosts tourist numbers. Finally, higher political stability in the origin country increases tourists to South Africa.

All three coefficients of the variables of interest in our first specification are significant and positive, but it is clear that the year of the event has the largest coefficient; this is supported by the Wald tests of the simple linear hypothesis that the coefficients of the anticipation or legacy effects are equal to the effect in the actual year of the World Cup. We find that the *World Cup* coefficient is statistically larger than both the *Anticipation* and *Legacy* coefficients. According to these estimates, 25% more visitors came to South Africa the year the World Cup was held.[6] Using the same method, the anticipation effect reveals a statistically significant decline in tourism numbers while the legacy effect is associated with a 9% increase in tourism figures, although this is statistically insignificant.[7]

[5] Table A1 in the appendix presents some descriptive statistics.

[6] This percentage is calculated as [Exp(0.225)-1].

[7] The decline in tourism numbers before the World Cup is in contrast to the findings of Fourie and Santana-Gallego (2011) for other mega-events. It is clear that, despite the fact

The coefficients of interest in our second specification are the disaggregations of the *World Cup* and *Legacy* effects depending on whether the country participated or not. Our Wald test shows that participating countries have larger coefficients than non-participating countries both during and after the event. In particular, we observe that the World Cup effect for a participating country is around 57% while the effect for a non-participating country is 20%. The legacy effect for the participating countries is a statistically significant 18% and for the non-participating ones a statistically insignificant 5%.

These results are not, or should not be, surprising. Earlier research has shown that a mega-event like the World Cup, especially when it is held during the tourism off-season and in a country with fairly low levels of tourist arrivals, can have large immediate benefits. As several scholars have pointed out, these benefits must be offset against the often large costs of hosting the event (Baade & Matheson, 2004; Matheson & Baade, 2004; De Nooij, Van den Berg, & Koopmans, 2011). But this is another question altogether and is not considered here.

Instead, we focus on a different aspect of this tourism impact: the emergence of new tourism markets for the host nation. Because of the fixed geographical representivity of countries at the World Cup, the event may attract tourism markets that have not previously been exposed to the tourism offering of the host nation.[8] We therefore estimate the *WorldCup* and the *Legacy* effects for each participating country. The results of disaggregating the *WorldCup* participant dummy variable in Specification 2 by participating country are presented in Table 2. The large coefficients of the non-traditional tourism partners that participated in the 2010 tournament in South Africa suggest that new markets were indeed attracted. Of the 10 participating countries with the largest event coefficients, five are new tourism markets for South Africa, all of them Latin American (Honduras, Mexico, Paraguay, Brazil and Chile). Uruguay and Spain, also new tourism markets for South Africa, are close behind (positions 11 and 13). Interestingly, Honduras, a country ranked 189 out of 203 countries in terms of tourist arrivals in South Africa, showed the largest increase in tourist arrivals during the event, and Brazil, the largest economy in South America, showed the largest legacy effect.

In contrast, South Africa's traditional tourism partners are at the bottom of the list. The United Kingdom, Germany and the Netherlands, South Africa's main tourism partners outside Africa, showed very little event-specific growth; all reveal insignificant or negative coefficients in Table 2. To be sure, the absolute number of tourists from the traditional partners was still significantly larger in 2010 than the number from the non-traditional ones. Consider, for example, the extreme examples of Germany and Honduras. In 2010, 227,000 tourists arrived in South Africa from the former and only 1,343 from the latter. However, the 227,000 from Germany is lower than the average of 237,000 from that country that was recorded in the three years prior to the World Cup. In contrast, 1,343

that we control for GDP, the global financial crisis must have caused a steep decline in tourism numbers in the three years before the World Cup.

[8] This is, of course, not applicable to mega-events like the Olympic Games, where all countries compete.

is 10 times the average of 127 tourists from Honduras in the three years prior to the event.

These findings show that the effect of the World Cup on tourist arrivals, both during and after the event, varies considerably across the different participating countries. The logical implication of this is that the type of country that participates in the final phase of the World Cup makes a substantial difference to the economic impact of the event for the host nation. In the next section we test this hypothesis by conducting a counterfactual analysis.

4 Counterfactual Soccer

Counterfactual analysis using a gravity equation is commonly applied to international trade (see for instance Belke & Spies, 2008; Brouwer, Paap, & Viaene, 2008). The assumption is that the same relationship between the explanatory variables and dependent variable – in our case, tourism – will hold in future, or in our case in the past, when a different country participates in the World Cup.

To demonstrate the possibly large consequences of qualification matches, we begin with the most extreme scenario: what if all of South Africa's smallest tourism partners that participated in the final stages were replaced by the largest from the same football federation (in other words, region)? In Europe we replace Slovenia (with an average of 1,002 annual visitors to South Africa between 2007 and 2009) with Belgium (a corresponding 42,457), in North and Central America we replace Honduras (127) with Canada (54,515), and in Asia we replace South Korea (19,275) with China (41,026). We must emphasize that although it was theoretically possible for these teams to participate in the final phase of the tournament it was very unlikely. We make these choices in order to demonstrate the large possible effect of participation on tourist arrivals.

Table 3 presents the results of the first counterfactual analysis. It shows tourist arrivals in the real world and in the counterfactual scenario, for both the *WorldCup* and *Legacy* variables.[9] Consider Belgium, a country that did not participate in the World Cup. In 2010, 53,193 Belgians visited South Africa. Now imagine that Belgium had participated in the World Cup instead of Slovenia. In this counterfactual scenario, we estimate that 61,901 Belgians would have visited South Africa in 2010, which implies an increase of 8,708 tourists. In reality, Slovenia was the country that participated in the event, and 1,649 tourists from Slovenia visited South Africa. Had Slovenia not qualified, our model predicts that only 1,312 Slovenian tourists would have arrived. The difference is 337. If we assume that Belgians and Slovenians have roughly the same spending and behavioural patterns, then Belgium's qualifying for the final stages would have netted a significantly larger reward for the South African economy. Indeed,

[9] In the real scenario, the *WorldCup* and *Legacy* dummy variables take the value 1 for all the real participating countries, zero otherwise. This is the estimate of Specification 2 presented in Table 1 We then explore three counterfactual scenarios, where the *WorldCup* and *Legacy* variables take the following values: zero for Slovenia and 1 for Belgium, zero for Honduras and 1 for Canada, and zero for South Korea and 1 for China.

we can quantify this effect. The average expenditure for a tourist who flew into South Africa in 2010 was R11,800 (Statistics South Africa, 2011).[10] Had Belgium qualified for a place in the tournament instead of Slovenia, the South African economy would have seen an additional increase of R98,777,800 in 2010 consumption expenditure.[11] Or, given that roughly one additional job is created for every 12 additional tourists that visit South Africa (Mlambo-Ngcuka, 2006), a hypothetical Belgian qualification would have created an additional 698 jobs.

Of course, given the evidence (presented above) of a legacy tourism effect, had Belgium participated in 2010 rather than Slovenia this would also have had consequences in the years following the event. The size of this legacy effect is shown in Table 3: the model predicts that South Africa would have seen an increase of 17,179 tourists over the three years following the event. In contrast, Slovenia contributed a legacy of only 353 additional tourists. The difference is 16,826 additional tourists, or R198 million additional tourism spending.[12] Had Belgium qualified to participate rather than Slovenia, it would have brought in total an additional R297 million tourism spending to South Africa.

We can make the same calculations for our other counterfactual scenarios. Had Canada qualified instead of Honduras, 9,611 additional tourists would have arrived during the event, and 19,500 during the next three years. This equates to R113 million additional tourist spending in 2010 and an additional R230 million thereafter – a total of R343 million. And if China had qualified instead of South Korea, 5,632 additional tourists would have arrived during the event, and 17523 during the next three years. The additional spending would have been R66 million during the event and R206 million thereafter, making a total of R272 million.

To put these numbers into perspective, consider that total foreign direct spend (by air travellers) in South Africa in 2010 was R25.5 billion. The additional expenditure during 2010 for our three counterfactual scenarios described above is R354 million, an increase of 1.38% in total tourism spend in 2010 alone. This large increase, we want to reiterate, comes just from selecting three different teams to play in the final stages of the 2010 World Cup. But of course these are extremely unlikely cases: Canada had little chance of qualifying, having qualified only once before, in 1986, and the same was true for China, which had also qualified only once, in 2002. We therefore investigate three different counterfactual scenarios, ones that could very easily have occurred. The results are shown in Table 4.

On 18 November 2009, Algeria and Egypt were involved in a tiebreaking play-off in Sudan to determine which team would qualify for the South African event. The only goal came from right back Antar Yahia, who scored at 40 minutes, giving Algeria a 1–0 win and sending them to the finals. Table 4

[10] Statistics South Africa differentiates between air-markets and land-markets. The latter are African visitors who traditionally spend less than tourists from other countries (Saayman & Saayman, 2008). R11800 was equivalent to US$ 1565 in July 2010.

[11] We arrive at this figure by subtracting the increase in Slovenian tourists from our hypothetical decrease in Belgian tourists and multiplying the difference by R11,800.

[12] We assume the same expenditure per tourist in each of the three years following the event.

shows the effect Yahia's goal had for the South African economy. Algeria's participation increased tourist arrivals in South Africa by only 505; Egypt, a stronger economy and a larger tourism partner, would have sent an additional 1,486. The difference, 981 tourists, would have contributed an additional R11 million to the South African economy. The additional spend over the following three years would have been R22 million, for a total benefit of R34 million. Yahia's spectacular volley was expensive for the South African economy.

The 2009 play-off games to determine the European qualifiers were held over two rounds. Russia played Slovenia on 14 and 18 November. In the first leg, played in Moscow, Guus Hiddink's Russia held a convincing 2–0 lead before Nejc Peènik of Slovenia added a consolation goal two minutes before the end. This Slovenian away goal proved decisive, as Slovenia beat Russia 1–0 in the return leg in Maribor to win a place in the World Cup. Peènik's late goal also had serious ramifications for the South African economy. We estimate that 2,866 more Russian tourists would have visited South Africa in 2010 had their country qualified for the event, as opposed to the 347 tourists who arrived from Slovenia. The additional tourism spend would have been R30 million during 2010 and R56 million in the following three years, making a total of R86 million.

France played Ireland over two matches too, the first leg at Croke Park in Dublin and the second, four days later, at the Stade de France in Paris. The first leg ended 0–1 in favour of France, with a 72nd minute Nicolas Anelka away goal securing the fixture. The second fixture came alive with a Robbie Keane goal at 32 minutes. France failed to score again in normal time, and the match went into extra time.

Then, with 17 minutes on the clock, France was awarded a free kick close to the centre circle. The ball was floated in. It bounced in front of Thierry Henry, who handled it twice with his left hand before tapping it with his right foot to William Gallas, who headed the ball past Shane Given, the Irish goalkeeper. While France burst into celebration, the Irish players complained vehemently, but Martin Hansson, the Swedish referee, did not change his decision to award the goal. The 'hand of Henry', as it was later dubbed, meant that France qualified for the final phase of the World Cup in South Africa instead of the Republic of Ireland.

What effect did Henry's handball have on the South African economy? Table 4 reports the counterfactual results if Ireland rather than France had participated. France's participation meant that 36,482 additional French tourists visited South Africa in 2010. In contrast, had Ireland qualified, our model predicts that only 8,234 additional Irish tourists would have arrived. The difference of 28,248 means that the 'hand of Henry' added R333 million in tourism expenditure during 2010 alone. The legacy effect is equally large: in the three years following the event, an additional 60,960 French tourists came to South Africa, whereas only 14,784 Irish tourists would have come had Ireland qualified for the finals. This means that tourism expenditure in South Africa during the three years following the World Cup was R545 million more because France qualified. In total, the 'hand of Henry' increased tourism expenditure in South Africa by an astonishing R878 million, or, using the shorthand of 12 additional tourists

for each extra job, provided 6,202 more jobs.

5 Conclusions

Many factors determine the success of a mega-sport event. This paper discusses one hitherto neglected factor: the economic size of the countries that qualify. We use a gravity model to quantify the tourism impact from hosting the 2010 FIFA World Cup in South Africa. We find large disparities between the impact of the countries that did participate and that of the non-participating countries we use as counterfactual examples. We also show that the host nation experiences the most tourism growth from non-traditional tourism partners, although this growth is by definition off a low base.

We show that the size of the benefit is to some extent determined by who qualifies for the event. Our counterfactual analysis demonstrates that replacing the smallest with the largest tourism partner can add as much as 1.38% to tourism expenditure in the year the event is held. We show how the participation of smaller countries (Algeria rather than Egypt and Slovenia rather than Russia) was disadvantageous for the South African economy. In contrast, the fact that France participated rather than Ireland added R878 million to the South African economy over a four-year period, or more than 1% of foreign tourism expenditure in 2010 alone.

Much of the economic impact of a mega-event like the World Cup can therefore be determined by the random outcome of a single play-off game – or even, as in the 'hand of Henry' case, the 'butterfly effect' of a single incident. This, of course, is not directly useful information for tourism managers, as they cannot engineer such incidents, or influence the outcome of a play-off. But they could gear their expectations of tourist arrivals to the results of the qualification rounds. Understanding the effect of participating country size on event-related tourism arrivals could thus help them to make more accurate predictions in future.

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Table 1. 2010 FIFA World Cup Effect by Participant

	Specification 1		Specification 2	
Constant	-9.689	-1.55	-12.434*	-1.92
GDPpc	0.579***	4.82	0.598***	4.94
Pop	0.219	1.42	0.290*	1.81
RelPPP	0.376***	4.15	0.367***	3.93
PolStab	-0.113***	-3.53	-0.110***	-3.43
Anticipate(1)	-0.011	-0.21		
WorldCup(2)	0.225***	3.43		
$Legacy_{it}$(3)	0.082	1.33		
WorldCup participant(4)			0.449***	4.13
World Cup non-participant(5)			0.181***	3.09
Legacy participant(6)			0.169**	2.44
Legacy non-participant(7)			0.045	0.65
Test (1)=(2)	21.81	0		
Test (3)=(2)	7.18	0.0074		
Test (1)=(3)	5.19	0.0228		
Test (4)=(5)			6.65	0.0099
Test (6)=(7)			5.95	0.0147
Number of obs	3175		3175	
R-squared	0.9567		0.9569	

Note. Robust standard errors are computed.

Origin fixed effects are included. Specification 1 includes year fixed effects for the period 1995–2006. Specification 2 includes year fixed effects for the period 1995–2009.

t-statistics appear between parenthesis and p-values between brackets.

Significant at 1 %(***) 5 %(**) and 10 %(*).

Table 2: Event and legacy coefficients for participating countries

Origin	Rank	Event	Legacy
Honduras	189	2.312***	0.595***
Mexico	63	1.809***	0.306***
Slovak Republic	77	1.028***	0.575***
Paraguay	117	1.026***	0.330***
Algeria	81	0.856***	-0.028
Slovenia	96	0.811***	0.357**
Brazil	22	0.628***	0.810***
Cameroon	59	0.618***	0.463***
Chile	62	0.581***	-0.248**
Portugal	23	0.498***	0.667***
Uruguay	84	0.481***	-0.312***
Ghana	40	0.445***	0.488***
Spain	28	0.350***	0.281***
United States	8	0.295***	0.382
Nigeria	24	0.259*	0.606***
Korea	38	0.254***	0.286***
Argentina	39	0.234	-0.040
Denmark	31	0.186***	0.147***
Italy	17	0.176***	0.239***
Australia	14	0.172***	0.129**
France	13	0.115**	0.068
Netherlands	12	0.034	-0.036
Japan	27	0.026	0.153
United Kingdom	6	0.013	-0.105**
Côte d'Ivoire	72	-0.090	-0.263*
Greece	49	-0.120*	-0.356***
Switzerland	19	-0.131*	-0.187*
Germany	7	-0.189***	-0.047

Note. North Korea and Serbia are not reported as data were unavailable.
Estimates of the gravity model are available on request.

Table 3. Counterfactual Analysis (Scenario 1)

Belgium instead of Slovenia				
	Belgium		Slovenia	
	Event	Legacy	Event	Legacy
TA real model	53,193	147,618	1,649	3,847
TA counterfactual	61,901	164,797	1,312	3,494
TA growth	16.37%	11.64%	-20.45%	-9.16%
% total South Africa TA	0.55%	0.51%	0.01%	0.01%
% total South Africa TA*	1.901%	1.517%	0.040%	0.032%
Canada instead of Honduras				
	Canada		Honduras	
	World Cup	Legacy	World Cup	Legacy
TA real model	59,061	168,461	247	614
TA counterfactual	68,723	188,019	196	556
TA growth	16.36%	11.61%	-20.62%	-9.40%
% total South Africa TA	0.61%	0.59%	0.00%	0.00%
% total South Africa TA*	2.111%	1.731%	0.006%	0.005%
China instead of South Korea				
	China		South Korea	
	World Cup	Legacy	World Cup	Legacy
TA real model	66,383	213,138	22,909	58,409
TA counterfactual	76,748	236,175	18,176	52,895
TA growth	15.61%	10.81%	-20.66%	-9.44%
% total South Africa TA	0.68%	0.74%	0.16%	0.17%
% total South Africa TA*	2.358%	2.175%	0.558%	0.487%

Note. 'TA' is total tourist arrivals and 'TA*' excludes the main African origins of tourists to South Africa (Lesotho, Zimbabwe, Mozambique and Swaziland). 'World Cup' is tourist arrivals in 2010. 'Legacy' is the sum of tourist arrivals for the period 2011–2013. Estimates of the counterfactual model are available on request.

Table 4. Counterfactual Analysis (Scenario 2)

	Egypt instead of Algeria			
	Egypt		Algeria	
	World Cup	Legacy	World Cup	Legacy
TA real model	6,765	20,335	2,377	6,416
TA counterfactual	8,251	23,082	1,872	5,549
TA growth	21.97%	13.51%	-21.24%	-13.51%
% total South Africa TA	0.07%	0.07%	0.02%	0.02%
% total South Africa TA*	0.253%	0.213%	0.058%	0.051%
	Russia instead of Slovenia			
	Russia		Slovenia	
	World Cup	Legacy	World Cup	Legacy
TA real model	12,964	38,643	1,649	4,167
TA counterfactual	15,830	43,940	1,302	3,600
TA growth	22.10%	13.71%	-21.08%	-13.62%
% total South Africa TA	0.14%	0.14%	0.01%	0.01%
% total South Africa TA*	0.486%	0.405%	0.040%	0.033%
	Ireland instead of France			
	Ireland		France	
	World Cup	Legacy	World Cup	Legacy
TA real model	37,285	106,481	172,290	448,253
TA counterfactual	45,519	121,265	135,808	387,293
TA growth	22.08%	13.88%	-21.17%	-13.60%
% total South Africa TA	0.41%	0.38%	1.21%	1.21%
% total South Africa TA*	1.398%	1.117%	4.172%	3.566%

Note. TA is total tourist arrivals and TA* excludes the main African origins of tourists to South Africa (Lesotho, Zimbabwe, Mozambique and Swaziland). World Cup refers to tourist arrivals in 2010. Legacy is the sum of tourist arrivals for the period 2011–2013.
Estimates of the counterfactual model are available on request.

APPENDIX

Table A1. Descriptive Statistics

World Cup participants					
Variables	Obs	Mean	Std. Dev.	Min	Max
TA_{it}	530	53621	96456	1	506481
$GDPpc_{it}$	530	19201	16603	405	59055
Pop_{it}	530	51	66	2	316
$RelPPP_{it}$	530	0.33	0.54	-1.46	1.33
$PolStab_{it}$	530	0.15	0.90	-2.69	1.67
World Cup non-participants					
Variables	Obs	Mean	Std. Dev.	Min	Max
TA_{it}	2645	46308	238150	1	3211662
$GDPpc_{it}$	2645	8462	14456	50	86127
Pop_{it}	2645	32	141	0	1360
$RelPPP_{it}$	2645	-0.12	0.48	-1.67	1.55
$PolStab_{it}$	2645	-0.08	0.97	-3.18	1.66

Note. Population is in millions.