

DEPARTMENT OF ECONOMICS

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Mega-Events and Tourism in South Africa**

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If you host it, where will they come from?
Mega-Events and Tourism in South Africa

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Abstract

Hosting a major international sporting event is a costly affair for the organizing country. Growth in tourism is often cited as one of the economic benefits, which should allow the host to earn back these costs. In this paper we use monthly country-by-country arrival data to assess the impact of organizing the FIFA 2010 World Cup on tourism in South Africa. We find that South Africa attracted around 200,000 extra arrivals from non-SADC countries during the event. Participating countries and South Americans contributed most to this increase. These figures are far below most projections made before the event.

JEL Codes: L83 - F14 - J61

Keywords: World Cup, sports, tourism, South Africa

1. Introduction

Major international sporting events such as the various World Cups in a variety of sports or the Summer and Winter Olympic Games are considered by many countries to be valuable prizes to be won, and like the athletes on the field of play, nations compete against one another for the right to host these spectacles with often reckless abandon. Many reasons are put forward to explain cities' and countries' willingness to expend large sums of money to attract and host these events, but among the most common justifications is that it is claimed that these events can serve to attract huge numbers of foreign visitors with thick wallets and favorable spending habits. This paper examines the past 10 years of foreign tourist arrivals in South Africa, the host of several recent major international sporting events to determine the effect of these mega-events on the number of international visitors to the country.

South Africa has a particularly interesting sports history related directly to its prior practice of institutionalized discrimination known as apartheid. Beginning in the 1960s, numerous international sporting organizations began to speak out against South Africa's white-led government and its practice of fielding segregated sports teams for international events. The International Olympic Committee (IOC) banned South Africa in 1964, quickly followed by the Fédération Internationale de Football Association (FIFA) which prohibited its participation as of the 1966 World Cup, and the International Cricket Council which suspended South Africa in 1970. Perhaps most famous is the successful campaign of tennis legend Arthur Ashe to have the country removed from Davis Cup play in 1970. South Africa returned to play in the Davis Cup in 1974, when India, their opponent in the final, refused to play them in protest of apartheid. After 1974, South Africa was denied participation in future Davis Cups although individual South African players were permitted to play in most

events. Twenty eight African nations boycotted the 1976 Olympics, after the IOC refused to ban New Zealand for playing international rugby¹ games against South Africa that year. These events led to the Gleneagles Agreement of 1977 that urged Commonwealth nations to refrain from all sporting contacts with South Africa.

In 1990, South Africa began to dismantle its apartheid laws, and the country was quickly welcomed back into the international sporting community. The ICC reinstated South Africa in 1991, South African teams were invited to participate in the 1992 Summer Olympics, and the country returned to international rugby union play in 1992. Of particular interest to this paper is the fact that South Africa was also quickly invited to host several major sports tournaments. The country was selected to host the Rugby World Cup in 1995 followed by co-hosting the Cricket World Cup in 2003 with Zimbabwe and Kenya. The country was awarded the 2010 FIFA World Cup, and also held the Confederations Cup in 2009, a pared down version of the big tournament. The question for the remainder of the paper is whether these events had a significant impact on tourism in the country, which also suffered heavily from the economic reactions to the apartheid policies.

This question is of additional interest given the fact that South Africa is not a fully developed, high income country, but often considered to be one of the up-and-coming BRICS-nations. Other nations in this group include Brazil, Russia, India and China, all of which have recently or are about to host major sporting events.² Critics have questioned whether taxpayer money in these countries should be used to organize multi-billion dollar events whereas basic necessities are often lacking for

¹ Rugby, or more precisely, Rugby Union is historically the sport most closely identified with South Africa.

² Brazil is the designated host to the 2014 FIFA World Cup as well as the 2016 summer Olympics. Russia has been awarded the 2014 Winter Olympics and 2018 FIFA World Cup. Recently India hosted the 2010 Commonwealth Games, whereas China organized the 2008 Summer Olympics.

large portions of the population. However, as none of these nations is a “traditional” tourist destination for many Western countries, the additional growth in tourist arrivals, especially from rich nations, is crucial to the economic success of these events.

2. Impact Analysis

Sports organizers routinely claim that mega-events have a large impact on host economies. For example, the consulting firm Grant Thornton South Africa initially predicted 483,000 international visitors for the 2010 FIFA World Cup in South Africa. The firm revised their figures downward multiple times, once to “a gross economic impact of \$12 billion to the country’s economy” with 373,000 international visitors (Voigt, 2011), and then subsequently placing the economic impact at \$7.5 billion along with 198,400 annual jobs (Rihlamvu, 2011). Following the event, a report suggested “309,554 foreign tourists arrived in South Africa for the primary purpose of attending the 2010 FIFA World Cup” and that they spent 3.64 billion rand during their stay (FIFA, 2010). Other mega-events also garner rosy economic forecasts. According to the consulting firm Deloitte, the 2007 Rugby World Cup attracted over 350,000 overseas visitors to France, and the event “can deliver between £260m and £1.1 billion of Gross Value Added to a Host Nation, depending on location.” (Deloitte, 2008)

Of course, the expenses associated with hosting an event like the World Cup are also quite large, and the majority of the costs are typically borne by the host country. Just considering the sporting infrastructure, FIFA requires host countries to have at least 12 modern stadiums capable of seating at least 40,000 spectators with one of the stadiums being able to seat at least 80,000 for the opener and the final. Operating costs can also be quite expensive due to the extreme security measures that must be put in place. The 2010 FIFA World Cup entailed \$3.9 billion in expenses

borne by South Africa, including at least \$1.3 billion in stadium construction costs (Voigt, 2010; Baade and Matheson, 2011).

Academic economists have generally been quite critical of the economic impact estimates of mega-events that have been published by event organizers. From an ethical point of view, there is a clear conflict of interest for a sporting organization to publish an economic impact study when that organization will be using any estimated economic gains as bargaining chip for the host government to supply large taxpayer subsidies for the event. Can one trust the economic impact estimates published by an organization that has a strong vested interest in the size of those very same estimates?

Even aside from the obvious incentive problems, there are numerous theoretical reasons why standard economic impact methodology exaggerates the true economic effect of mega-events on host economies. First, most of the spending by local residents on the sporting event doesn't generate new economic activity but simply reallocates spending within the economy. Of course, one important feature of hallmark events is that they attract audiences from outside the local economy, so some level of new spending is generated. Even here, however, two common mistakes can be made. The crowds and congestion associated with a mega-event can dissuade other visitors from coming to a host economy during a mega-event. If the country is already a popular tourist destination, this displacement effect can be quite large. In addition, while money may be spent within a local economy during an event, to the extent that expenditures are made on goods and services provided by multinational corporations, that spending may not stick in the local economy. Every economic impact study implicitly accounts for these leakages through the use of multipliers. The economic multipliers used, however, are typically based on spending patterns during the normal state of an

economy while the economy during a mega-event may be anything but normal, and there is significant reason to believe that mega-events significantly increase leakages of consumer spending (Matheson, 2006).

Ex post studies of economies that have hosted mega-events have typically shown that mega-events have economic impacts that are a fraction those claimed by event organizers. Using national data, Szymanski (2002), for example, finds that among the world's largest economies, countries hosting the World Cup over the past 30 years experienced lower economic growth during World Cup years. Baade and Matheson (2004) use economic data from host cities (as opposed to country-wide data) and examine personal income growth in 13 metropolitan areas that either hosted World Cup games in the United States in 1994 or were directly adjacent to a host site. Their findings suggest that rather than a \$4 billion windfall, host cities experienced personal income growth that was below that which normally would have been predicted by a total sum of \$5.5 to \$9.3 billion. Other mega-event analyses such as Coates and Humphreys (2002), Porter (1999), and Crompton (1995) reach similar conclusions regarding the magnitude of predicted versus realized economic gains. Du Plessis and Cobus (2010) produced an initial estimate that the impact of FIFA World Cup on South African GDP was of the order of 0.1%.

Most ex post economic studies rely on economic data such as tax receipts, personal income, or employment. Fewer focus specifically on tourism data. Holger Preuss has pointed out that there are several difficulties in estimating the net impact of a major event on tourist movements because of the heterogeneity of consumer motives. Preuss (2010) identifies no fewer than nine different ways in which consumer choice may be affected:

- (1) Home-stayers (residents who stay for the event who would otherwise have holidayed abroad)

- (2) Runaways (residents who would otherwise have stayed in the country who want to escape disruption associated with the event)
- (3) Changers (residents who move the timing of their overseas holiday in order to attend/avoid the event)
- (4) Event visitors (foreigners who travel specifically for the event who would not otherwise have visited the country)
- (5) Casuals (foreigners who would have been in the country at the time of the event for other reasons and choose to attend)
- (6) Time-switchers (foreigners who would have visited the country anyway but time their visit to coincide with the event)
- (7) Avoider-switchers (foreigners who alter the date of their visit to avoid the event)
- (8) Avoider-cancellers (foreigners who would have visited the country but cancel their visit entirely because of the event)
- (9) Extensioners (foreigners who would have been in the country anyway but extend their visit in order to attend the event)

Of course there is no simple way to allocate tourists into these different categories. Moreover, there is the possibility that the event may generate publicity which either enhances or diminishes tourist arrivals over the longer term.

Allmers and Maennig (2009) examine specific sectors of host economies for potential effects of the FIFA World Cup. They find no identifiable impact on overnight hotel stays, national tourism income, or retail sales in France during the World Cup in 1998, while in Germany in 2006 they find

approximately 700,000 additional hotel nights sold to foreigners and an additional 600 to 700 million euros (US\$ 830 to 970 million) in net national tourism income. While these figures are substantial, they are again a fraction of those claimed by event boosters. Baumann, Matheson, and Muroi examine visitor arrival data in Hawaii (2009) and conclude that while substantial number of out-of-state visitors participate in major sporting events such as the Pro-Bowl and Honolulu Marathon, the net increase in the number of visitors to the state was in each case less than half of the number of spectators/participants at the event suggesting a considerable amount of displacement of other visitors by sports tourists.

Fourie and Santana-Gallego (2011) estimated a gravity model of international tourism for 169 countries between 1995 and 2006 and found that major sports events added around 8% to total tourist arrivals in the year in which it is staged. These events included the Summer and Winter Olympic Games, the Rugby and Cricket World Cup and the British and Irish Lions Rugby tours (which are staged in South Africa, Australia and New Zealand only), as well as the FIFA World Cup. They find the same 8% estimate when they estimate the impact of the FIFA World Cup on its own. Interestingly they find no lasting impact on tourism after the event but find substantial increases in tourist arrivals in the three years leading up to the event. In fact the coefficients are substantially larger than estimates for the event year itself.

In this paper we add to this literature by examining monthly tourist arrivals in South Africa country by country. Given the detail of the data we are able to show that tourist arrivals from different countries respond quite heterogeneously to the organization of the World Cup. For example, we find sharp rises in arrivals from countries that have a big interest in the game and no historical ties to South Africa, mainly the South American nations. On the other hand, arrivals from

the poor SADC-countries surrounding South Africa seem to be affected far less.

3. Descriptive statistics

Statistics South Africa publishes a monthly Tourism and Migration Report as well as an annual summary which covers around 230 countries, territories, or political units.³ Of the roughly 230 areas for which tourist arrival data is available, 177 have corresponding IMF economic data that is relatively complete from 2001-2010. These countries account for around 98% of total reported tourist arrivals and form the basis of our analysis.

Table 1 shows the total monthly arrivals over our sample period. In June and July 2010 (in bold), when the FIFA World Cup (WC) was played, total arrivals were 431,144 higher than in the corresponding months of 2009. This represents a substantial increase (28%) but is still only 3.9% of total arrivals in 2010. However, there also appears to have been a general increase in the rate of growth since 2009; the rate of growth of tourism between 2001 and 2009 average 6.5% per year, in the following two years the rate of growth has almost doubled, to 12.8% per year. We are interested in two main issues in this paper. Firstly, are there displacements effects identifiable in the data, through time shifting of visitor decisions? Second, where did the World Cup visitors come from? On the first issue, it is noticeable that arrivals in May 2010 were little different compared to May 2009, while arrivals in June 2011 were lower than in June 2010, suggesting the possibility of some displacement. Clearly, given the underlying trend growth in tourist arrivals the impact of broader economic factors such as the economic crisis of 2008, a regression approach is called for to examine

these issues more carefully.

Figure 1 illustrates the distribution of arrivals. The top left panel shows total arrivals, the top right panel shows arrivals 30 of the 31 participant visitor nations⁴. The lower left panel shows the number of arrivals from the Southern African Development Community (SADC) nations, whose members are the neighboring states of Angola, Botswana, Democratic Republic of Congo, Lesotho, Madagascar,⁵ Malawi, Mauritius, Mozambique, Namibia, Seychelles, Swaziland, Tanzania, Zambia and Zimbabwe (as well as South Africa). Finally, the bottom right panel consists of arrivals from non-SADC non-participant nations.

About three quarters of tourist visitors to South Africa are from SADC nations (none of whose members qualified for the World Cup apart from South Africa as hosts), and most of the remainder come from the nations that participated in the World Cup. Outside of the SADC countries the largest number of visitors come from the UK,⁶ USA, Germany, Netherlands, France and Australia, all of whom qualified for the WC. Tourists from these from these six states accounts for between 50-60% of non-SADC visitors.

³Additional monthly arrival data is available back to 1980 but for a more limited number of countries (roughly 30). There were some changes in the reporting of tourist arrivals in 2009, requiring some adjustments to the data. These are described in Appendix 1.

⁴South Africa itself makes up the 32nd, while the figures for North Korea is not included since we have no economic data. In June and July 2010, 206 visitors from North Korea were reported, while during the rest of the year the monthly average arrivals were 18.

⁵At the time of writing (6/22/2012) Madagascar's membership was suspended.

⁶For the purposes in international soccer the UK fields four national teams: England, Scotland, Wales and Northern Ireland. Only England qualified for the WC, but it accounts for about four-fifths of the total population.

Table 1: Total tourist arrivals in South Africa 2001 - 2011

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
2001	503366	441663	477822	497670	436415	417334	480946	493068	461358	475370	491744	570175	5746931
2002	521020	488344	543410	509390	464142	446313	510669	558051	536290	572778	578567	641800	6370774
2003	565102	523141	538586	558275	486544	443637	526115	539677	514851	560281	578288	622845	6457342
2004	553338	527241	532742	567969	485989	440554	518827	553855	545383	625943	609609	694789	6656239
2005	641287	563953	620536	571295	554267	514710	632557	646632	624935	683992	680379	740150	7474693
2006	725212	642531	673788	723489	638195	597793	714347	697601	695273	760399	751671	840296	8460595
2007	818671	703045	718563	790442	694650	634345	771531	781811	747912	796012	799169	883772	9139923
2008	860946	772440	868285	762175	738853	693754	828069	746502	751130	831408	820793	967858	9642213
2009	816283	662991	686640	815484	732359	688028	840221	851058	792247	853440	830624	909292	9478667
2010	946142	782978	824967	852513	764996	957392	1002001	1011420	942220	985562	986067	1109468	11165726
2011	1103916	896099	922899	999045	957371	897594	1040854	1002850	977605	1037585	1030505	1187810	12054133

Figure 1: Tourist arrivals in South Africa 2001-2011

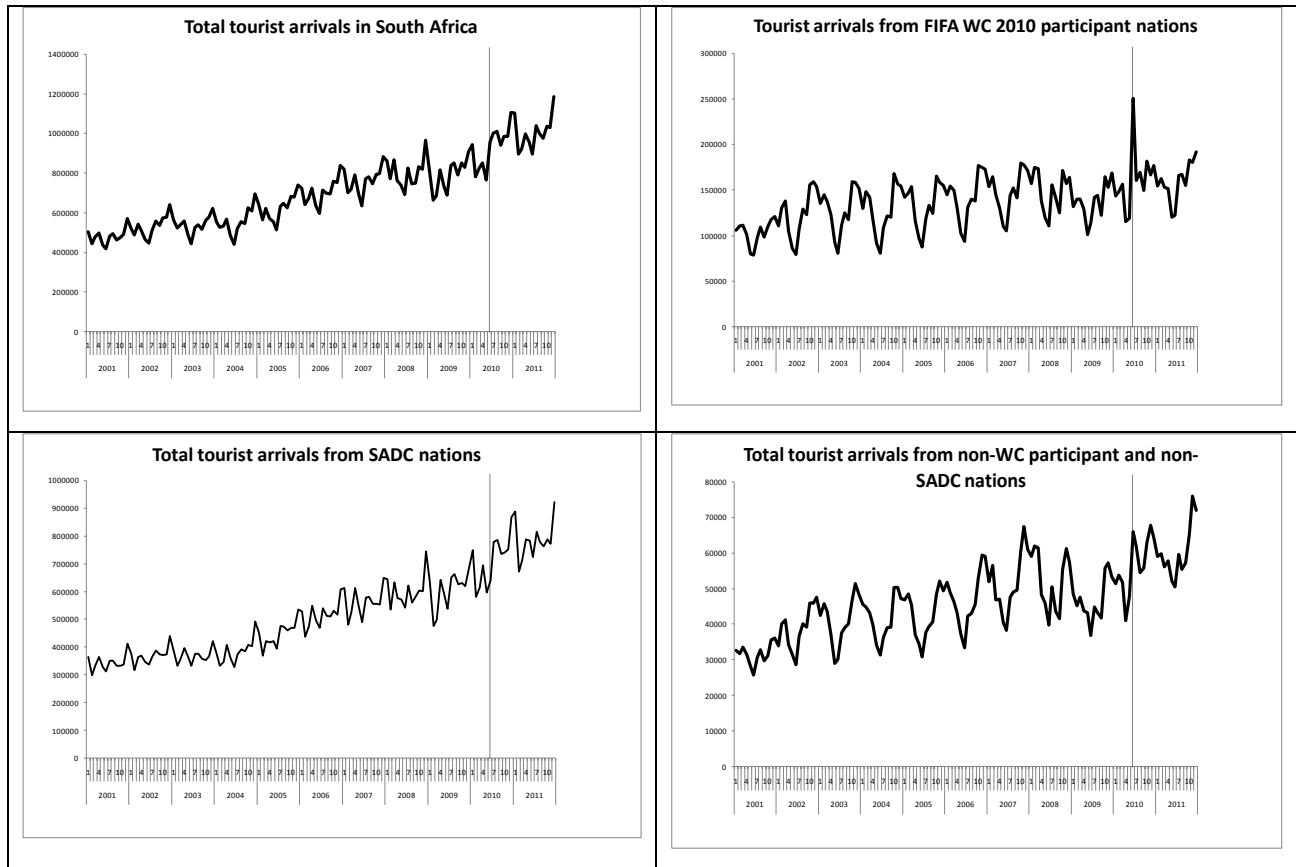


Figure 1 shows that there was clear spike in tourist arrivals in June 2010 although by far the largest spike was from participant nations. The charts also illustrate the strongly seasonal pattern in

the data, with June being the month of lowest arrivals in most years. This is because June is the middle of the southern hemisphere winter, while in the northern hemisphere school does not typically finish until the end of June, and hence families from the major tourist origins are less likely to travel. Arrivals from the SADC nations do not show this seasonal pattern, which suggests that they do not represent tourist arrivals.

4. Regression model

While the descriptive statistics are informative, it is not obvious how to derive an estimate of the World Cup effect. Simply looking at the differences between June and July 2010 and the previous year fails to take into account the effect of macroeconomic trends. Moreover, it says nothing about the potential impacts on arrivals at other times of the year. Given the heterogeneity of the tourism patterns across countries and the length of our time series, rather than pool the data and estimate a panel model we chose to estimate an error correction model separately for each country and then average the coefficients as proposed by Pesaran and Smith (1995). While we cannot directly identify whether tourist arrivals were caused by the World Cup, we include monthly dummies for all months of 2010 in our regression model to examine the pattern of development before and after the event and make some general observations about the pattern of changes. As a robustness check we estimate a panel data model in Appendix 2 and compare the implied impact of the World Cup to the baseline model.

The data we used to model tourist arrivals is described in Table 2.⁷ It can be divided into three groups, economic variables, country based groupings and sports related variables. Our economic

⁷The panel model in appendix includes a host of other variables, which we left out of the table to improve readability. Upon request we can provide an extensive description of these variables.

variables in the baseline model include GDP per capita, at purchasing power parity expressed in South African rand and the real exchange rate between the country of tourist origin and the South African rand in real terms. We also include a dummy variable for the South African tourist season running from September to January.

There are a number of smaller nations and territories for which economic data is not available, and generally these do not pose an issue for our analysis. However, data is also not available for Zimbabwe, which borders South Africa. In recent years as its economy has crumbled there has been large scale movement across the border, both legal and illegal. However, this should not significantly affect our estimates of the impact of the World Cup, not least since few Zimbabweans would be able to afford a ticket.

We use dummies to group nations with similar characteristics and in some cases these groups overlap, e.g. OECD and Western Europe. To differentiate between country size we define four groups: “micro” where the average number of tourists is less than 100 per month (83 countries), “small” where tourist arrivals are between 100 and 1000 per month (51 countries) “medium” between 1000 and 10,000 (29 countries) and “large” over 10,000 (10 countries).

In addition to the 2010 World Cup we included dummies for a number of other sporting events held in South Africa. Apart from soccer, the most popular sports in South Africa are cricket and rugby union. These are sports that are primarily followed by countries belonging to the Commonwealth (former British colonies), notably England, Wales, Scotland, Ireland, Australia, New Zealand and South Africa in the case of rugby union and these countries plus India, Pakistan, Bangladesh, Caribbean nations that were British colonies (who play collectively under the name of the “West Indies”) and Zimbabwe. Rugby union is also popular in France and to a lesser extent in

Argentina and Italy. For over a century a tradition has existed of cricket and rugby tours, whereby international teams visit each nation and play a series of games (“test matches”) and as the cost of international travel has fallen there has been a corresponding growth in sports tourism. This is especially true for the UK, from whence many thousands of tourists will often travel to follow cricket test matches in South Africa, Australia or the Caribbean during the northern hemisphere winter.

We identified dummy variables for nations which played any cricket or rugby match in South Africa in a specific month. In 2009 South Africa also played hosts to the second season of the Indian Premier League cricket competition. This new competition, which involves a shortened version of the game, has been hugely successful in India, largely thanks to the fanatical support for cricket in that country and the ability of the organizers to offer large salaries and attract the top talent in the world to participate. However, 2009 elections were held in India and given the risks of terrorist attacks the Indian police force declared itself unable to ensure security at both the polling booths and the cricket stadiums. As a result the decision was taken at the last minute to relocate the competition (which takes place over six weeks in April and May) to South Africa. Together we labeled all these cricket and rugby events “anglo sport”. In addition, in 2003 South Africa hosted the cricket World Cup (together with Zimbabwe and Kenya), in which the ten leading cricket nations participated, as well as Kenya, Namibia, Canada and the Netherlands. We included a separate dummy for these nations over the period of that tournament.

Finally, one year before each World Cup FIFA runs an elite competition called the Confederations Cup as a test of the host nation’s preparations, and we included dummies for nations participating in this event.

Table 2: Data descriptive statistics

Group	Variable	Obs	Mean	Std. Dev.	Min	Max
	Monthly arrivals	22572	4105	18057	0	279280
Economic /Demographic Variables						
	touristseason	22572	0.417	0.493	0	1
	realexfrand	20232	1.116	0.527	0.324	3.470
	gdpcapitapp	20304	12344	13888	213	88222
Country dummies						
	westeurope	22572	0.117	0.321	0	1
	africa	22572	0.287	0.452	0	1
	sadc	22572	0.076	0.265	0	1
	soviet	22572	0.111	0.314	0	1
	southamerican	22572	0.158	0.365	0	1
	oecd	22572	0.199	0.399	0	1
	anglo	22572	0.035	0.184	0	1
	micro	22572	0.474	0.499	0	1
	small	22572	0.292	0.455	0	1
	medium	22572	0.164	0.370	0	1
	large	22572	0.070	0.255	0	1
Sports Variables						
	wc2010nation	22572	0.175	0.380	0	1
	confedcup	22572	0.000	0.018	0	1
	cricketWC	22572	0.002	0.043	0	1
	anglosport	22572	0.005	0.073	0	1
	rugbytest	22572	0.002	0.047	0	1
	crickettour	22572	0.003	0.055	0	1
	ipl2009	22572	0.000	0.009	0	1

We tested first for non-stationarity of the dependent variable for each country using the Dickey-Fuller unit root test, and were able to reject the hypothesis in all but two cases: Belarus (a micro nation) and Hong Kong (small). We dropped these countries from the analysis of group means. For the SADC nations the Dickey-Fuller test results indicate that some of them are only trend-stationary we add a linear trend to the model.

To model the data we adopt an error-correction structure, where we include twelve months lagged terms to control for monthly effects. We estimate the model after taking logs of the arrivals,

gdp per capita and exchange rate variables:

$$(1) \quad \text{Arrival}_{it} = \beta_{10} + \beta_{11} \text{arrival}_{it-12} + \beta_{12} \text{gdppc}_{it} + \beta_{13} \text{gdppc}_{it-12} + \beta_{14} \text{realexch}_{it} + \beta_{15} \text{realexch}_{it-12} \\ + \beta_{16} \text{touristseason}_t + \beta_{17} \text{angloSPORT}_{it} + \beta_{18} \text{cricketWC}_{it} + \beta_{19} \text{confedcup}_{it} \\ + \beta_{10-21} \text{2010month}_t + \varepsilon_{it}$$

In this setting the coefficient on the simultaneous variables measures a variable's short-run effect on arrivals. The underlying long-run relationship is obtained as the difference of the coefficients on the lag and the simultaneous variable divided by the coefficient on the lag.

The IMF data is not yet available for 2011, so we can only estimate model (1) using data up until 2010. Consequently we estimated a second model which excludes the economic variables but includes the 2011 data:

$$(2) \quad \text{Arrival}_{it} = \beta_{10} + \beta_{11} \text{arrival}_{it-12} + \beta_{12} \text{touristseason}_t + \beta_{13} \text{angloSPORT}_{it} + \beta_{14} \text{cricketWC}_{it} \\ + \beta_{15} \text{confedcup}_{it} + \beta_{16} t + \beta_{17-18} \text{2010month}_t + \varepsilon_{it}$$

The results for model (1) are reported in Table 3. Column 1 reports the averages across all countries, column 2 reports the estimates for "micro" nations (fewer than 100 tourist arrivals per month on average), column 3 for non-micro, non-SADC nations and the last column shows the mean coefficients for SADC nations. All of the economic variables have the expected sign. The lagged dependent variable is highly significant, as is to be expected, while increasing GDP per capita and real exchange rate appreciation against the rand induces a short run increase in tourist arrivals from a given country. It is not possible to exactly infer the mean long-run effect of these variables from the table. Yet, for non-SADC countries the larger mean coefficients on the simultaneous variables versus the lags for both real exchange rate and GDP per capita suggest that the long-run effect of these variables is on average positive. For the SADC nations, the long-run effect of the exchange rate

appears to be positive, whereas GDP per capita has a negative long-run effect on tourist arrivals. We interpret this as a further indication that the arrivals from SADC countries are not motivated by tourism, but rather by economic migration. The tourist season generates a significant increase in arrivals over all groups. The smaller coefficient for the SADC countries on this variable probably reflects seasonal migrant workers serving the tourist industry.

The dummies for the cricket World Cup and the anglosports (cricket and rugby tours) are also significant for the sample as a whole and for the micro countries. The only micro countries which participate in these sporting events are the Caribbean nations playing cricket as the West Indies.

The pattern of the monthly dummies is open to interpretation. According to the data tourist arrivals in South Africa fell slightly in 2009, almost certainly a reaction to the financial crisis of 2008, whose epicenter was two of the nations that generate the largest non-SADC tourist arrivals - the UK and USA. The large coefficients for June and July 2010 are clearly attributable to the World Cup. The June coefficient nearly twice as large as the July coefficient largely because most of the games were in fact staged in June, with only the last 8 of the 64 games, involving only 8 countries, played in July. From column 1 we also observe large and significant effects in March, May, August, September, October, November, and December, and a negative effect in April. These results suggest that there is little evidence of time-shifting (the negative April effect is much smaller than the positive March and May effects), while the post event coefficients suggests that the exposure effect of international media coverage may have boosted interest in visiting the country.

Before the World Cup there was substantial media coverage of the threat to personal security

of visitors to South Africa, but the event had passed off with few incidents.⁸ Moreover in their 2010/11 Crime Report the South African Police Service reported that during the financial year that serious crime per 100,000 inhabitants fell by 5%, which includes categories such as attempted murder (-12.2%), street/public robbery (-10.4%) and car-jacking (-23.6%).

So it may be that the positive dummies for 2010 can be explained by (a) the economic recovery, (b) the World Cup publicity effect and/or (c) improvements in amenities (e.g. policing) which were motivated by the World Cup and made South Africa a more attractive destination. In this study we are unable to distinguish between these three hypotheses (which are not mutually exclusive).

Perhaps the most striking feature of Table 3 is that the 2010 monthly dummies, while still positive, are insignificant for SADC countries, even in June and July. There were numerous anecdotal reports prior to the World Cup that the South African authorities were keen to discourage illegal entry (not recorded in our data) from neighboring countries during the event, and this may have had an effect on legal tourist visits.

⁸ Newspaper reports suggested that crime rates in areas where games were being played fell by as much as 60-70% <http://www.guardian.co.uk/football/2010/jul/09/world-cup-football-south-africa-crime-falls>

Table 3: Mean Regression estimates 2002-2010 including economic variables

VARIABLES	All	micro	non-sadc	sadc
arrival _{it-12}	0.320*** (0.023)	0.128*** (0.018)	0.495*** (0.035)	0.473*** (0.076)
gdppc _{it}	1.327*** (0.393)	0.840 (0.679)	1.664*** (0.465)	2.402* (1.116)
gdppc _{it-12}	-1.068*** (0.377)	-0.478 (0.647)	-1.438*** (0.454)	-2.601** (0.940)
realexch _{it}	0.436*** (0.050)	0.470*** (0.092)	0.385*** (0.053)	0.530*** (0.087)
realexch _{it-12}	-0.267*** (0.053)	-0.324*** (0.092)	-0.182*** (0.060)	-0.426* (0.197)
Tourist season	0.061*** (0.009)	0.065*** (0.018)	0.062*** (0.009)	0.025** (0.010)
Cricket WC	0.037** (0.014)	0.048* (0.026)	0.034** (0.016)	-0.009 (0.009)
angloSPORT	0.025*** (0.009)	0.043** (0.018)	0.010 (0.007)	0.008 (0.008)
confed cup	0.013 (0.008)	0.016 (0.016)	0.011 (0.007)	
Jan 2010	-0.030 (0.031)	-0.105* (0.057)	0.038 (0.029)	0.031 (0.053)
Feb 2010	0.015 (0.031)	-0.035 (0.057)	0.067** (0.033)	0.012 (0.057)
March 2010	0.110*** (0.034)	0.088 (0.064)	0.147*** (0.035)	0.030 (0.055)
April 2010	-0.063** (0.032)	-0.063 (0.059)	-0.073** (0.031)	0.006 (0.050)
May 2010	0.153*** (0.043)	0.148* (0.083)	0.175*** (0.041)	0.045 (0.050)
June 2010	0.932*** (0.073)	1.080*** (0.119)	0.895*** (0.096)	0.190 (0.118)
July 2010	0.518*** (0.052)	0.687*** (0.092)	0.402*** (0.056)	0.144 (0.089)
August 2010	0.185*** (0.046)	0.142 (0.087)	0.234*** (0.045)	0.168** (0.055)
Sept 2010	0.123*** (0.040)	0.074 (0.077)	0.185*** (0.035)	0.062 (0.072)
Oct 2010	0.244*** (0.037)	0.369*** (0.067)	0.137*** (0.035)	0.095 (0.076)
Nov 2010	0.136*** (0.040)	0.227*** (0.069)	0.120*** (0.035)	0.107 (0.079)
Dec 2010	0.135*** (0.040)	0.121 (0.077)	0.150*** (0.037)	0.144** (0.058)
t				0.004 (0.003)
Constant	0.619 (0.930)	-0.826 (1.652)	1.322 (1.004)	5.683* (2.585)
Observations	17409	7905	8208	1296
Average R-squared	0.567	0.387	0.713	0.831

Table 4: Mean Regression estimates 2002-2011 excluding economic variables

VARIABLES	all	micro	non-sadc	sadc
arrival _{it-12}	0.324*** (0.021)	0.166*** (0.019)	0.454*** (0.032)	0.533*** (0.054)
Tourist season	0.068*** (0.009)	0.077*** (0.016)	0.069*** (0.009)	0.024*** (0.006)
Cricket WC	0.036** (0.015)	0.049* (0.029)	0.030* (0.015)	-0.001 (0.013)
angloSPORT	0.024*** (0.009)	0.039** (0.018)	0.011 (0.007)	0.010 (0.007)
confedcup	0.010 (0.009)	0.017 (0.017)	0.004 (0.006)	
Jan 2010	-0.116*** (0.029)	-0.204*** (0.055)	-0.039* (0.023)	-0.020 (0.053)
Feb 2010	-0.056*** (0.028)	-0.102* (0.052)	-0.008 (0.028)	-0.052 (0.033)
March 2010	0.034 (0.031)	-0.004 (0.060)	0.075*** (0.027)	-0.025 (0.033)
April 2010	-0.148*** (0.030)	-0.170*** (0.060)	-0.145*** (0.020)	-0.041 (0.036)
May 2010	0.049 (0.033)	0.026 (0.063)	0.089*** (0.032)	-0.043 (0.035)
June 2010	0.840*** (0.070)	0.986*** (0.113)	0.811*** (0.092)	0.122 (0.074)
July 2010	0.425*** (0.048)	0.578*** (0.087)	0.324*** (0.050)	0.074 (0.051)
August 2010	0.083** (0.039)	0.010 (0.076)	0.156*** (0.034)	0.095*** (0.024)
Sept 2010	0.012 (0.034)	-0.063 (0.066)	0.094** (0.028)	-0.001 (0.031)
Oct 2010	0.138*** (0.031)	0.230*** (0.059)	0.058** (0.027)	0.036 (0.029)
Nov 2010	0.058** (0.032)	0.085 (0.063)	0.032 (0.027)	0.046 (0.034)
Dec 2010	0.019 (0.034)	-0.044 (0.067)	0.074*** (0.024)	0.087* (0.044)
t	0.002*** (0.000)	0.002*** (0.001)	0.001*** (0.000)	0.003*** (0.001)
Constant	2.717*** (0.115)	2.022*** (0.103)	3.197*** (0.173)	4.185*** (0.605)
Observations	19669	8989	9120	1440
Average R-squared	0.492	0.311	0.636	0.768

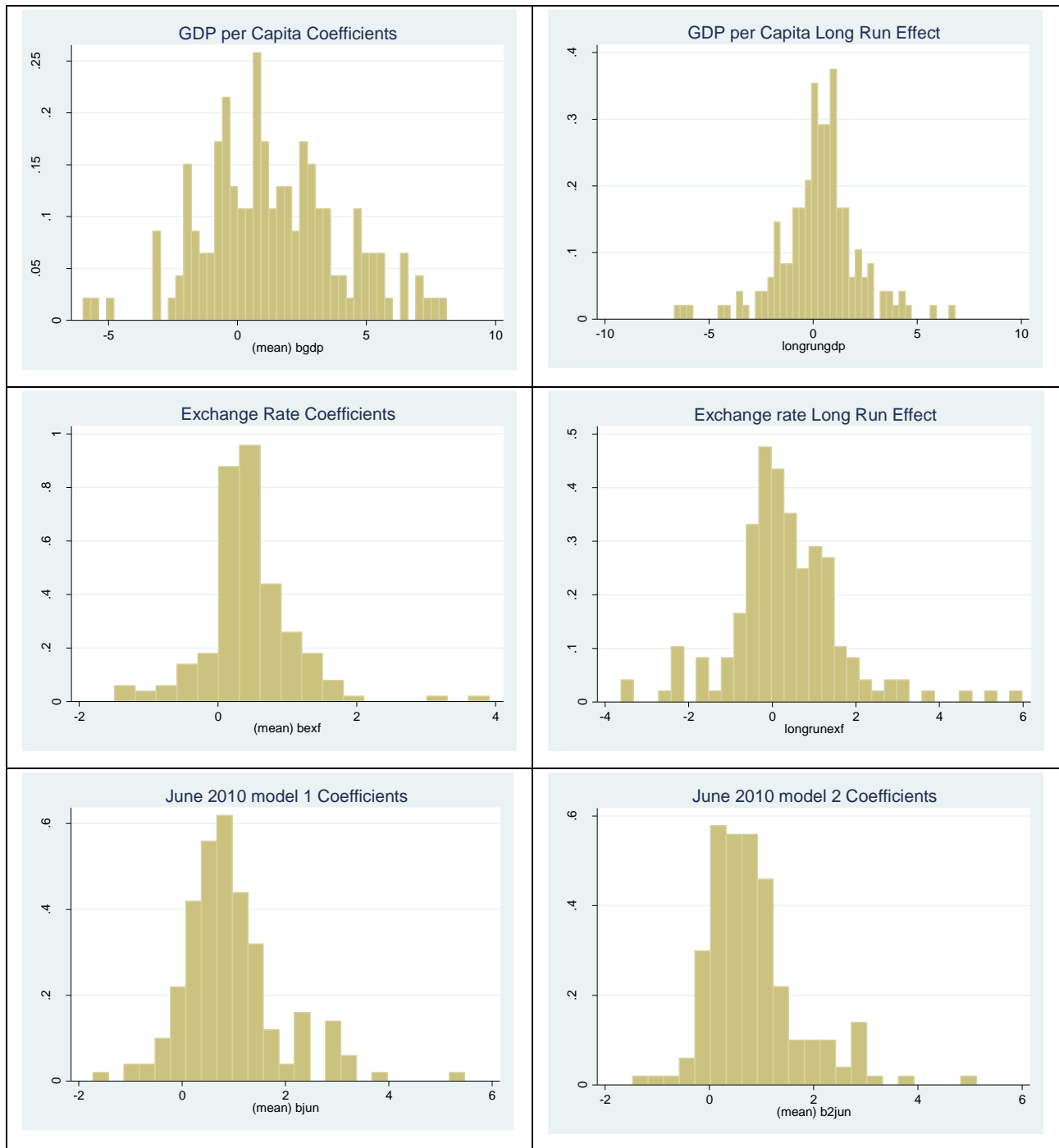
Table 4 includes the data for 2011 but excludes the economic variables. Not surprisingly the mean R^2 falls, but the coefficients on the lagged dependent variable, the tourist season and the

angloports variables are quite similar to those in Table 3. The main difference is the size of the 2010 monthly dummies which are all smaller, with January and February 2010 now negative and significant, while March, May, September and December 2010 are no longer significant.

The figures reported in the tables represent the average of the estimated coefficients. To get an idea of their full distribution, figure 2 shows histograms for selected coefficients and their implied long-run effects. From the graphs it is clear that the dispersion of the GDP per capita coefficient is wider than that of the exchange rate coefficient. Also the long run effect of GDP per capita on tourist arrivals differs more across countries. Given the heterogeneous income levels of the countries in the sample this is not surprising. We would expect economic growth in developed countries to spur tourism, whereas this effect is less clear for middle income countries. In the poor SADC countries surrounding South Africa economic growth may actually shrink the number of people travelling to South Africa. An appreciation of a country's currency with respect to the rand on the other hand is an incentive to travel irrespective of the country's economic situation. From the bottom panels of figure 2 it appears that the June 2010 coefficients also differ widely between countries in both models, although only a few are negative.

As a robustness check we provide estimates for a panel model in appendix. We choose not to interpret the individual coefficients as some clearly suffer from the fact that we restrict them to be equal across countries.

Figure 2: Histograms for selected coefficients



5. Estimated World Cup Tourism Impact

In the following tables we report the estimated impact of the WC on tourism for different sub-groups of the data for models 1 and model 2. Table 5 shows the results for all nations. Using model 1 we find that the estimated increase in tourist arrivals is around 391,000 in June and July and 1.3 million for the year as a whole. However, model 2 suggests the impact in June and July was only 271,000 and 627,000 for the year as a whole. While these results appear impressive, around half of these estimates are attributable to the SADC estimates, as can be seen from Table 6, which we have already observed are not well defined. Moreover, those travelling from SADC nations are generally not the high spending tourists that South Africa was seeking to attract during the World Cup, as was evidenced by the absence of seasonal effects and the unimportance of the tourist season in determining arrivals.

In our view the impact of the World Cup should be primarily assessed on the basis of the estimates for non-SADC nations. Tables 7 and 8 summarize the arrivals estimates from the participant nations and the non-SADC non participant nations. These estimates suggest, using model 1, that total additional arrivals in South Africa in June and July consisted of 170,506 visitors from participant nations and 43,754 from non-SADC non-participant nations, yielding a total of 211,250. The corresponding estimates for model 2 are 154,968 (participant nations), 38,355 (non-SADC, non-participant) and 193,323 (total), somewhat less than the 309,554 figure suggested the South African government after the close of the tournament. This discrepancy could be accounted for either by arrivals from SADC countries (unlikely) or the discouragement effect as tourists from non-SADC countries who would otherwise have visited South Africa decided to stay away. On these estimates

around 100,000 visitors would fall into this category. Nonetheless, if the coefficients on the monthly dummies for the remainder of the year can be attributed to World Cup effects, the total effect for the year for non-SADC countries rises to 490,135 (model 1) or 332,020 (model 2). The estimated total non-SADC arrivals from the panel model in appendix amount to 208,147 in June and July 2010 and 444,356 for the whole year, which confirms the numbers from model 1 and 2. Given the total cost of the event amounted to \$3.9 billion, our estimates suggest South Africa spent around \$19,500 for each extra non-SADC visitor in June and July 2010. If we account all extra non-SADC arrivals over the year to the World Cup, the figure ranges between \$8,000 and \$12,000 per extra visitor.

One striking feature of the data is the extent to which the increased arrivals can be associated with nations that have a particular interest in soccer. Table 9 shows that nearly all of the arrivals in South Africa from Latin American nations can be attributed to June and July, and that arrivals increased from almost zero to nearly 50,000, about one quarter of the total estimate of arrivals attributable to the World Cup. There were spectacular percentage increases in arrivals not only from participant Latin American countries such as Brazil and Argentina, but even from non-participant nations such as Colombia, Peru and Venezuela. Table 10 shows the monthly total arrivals for June and July for South American participant and non-participant nations.

Table 11 shows the extra arrivals ranked by model 1 for the 25 largest nations. Ignoring the SADC countries, the USA was the largest contributor, and the estimate is nearly double that of Germany, the next largest. This is a powerful illustration of the growing popularity of international soccer in the USA. The only non-SADC non-participant nations in the list are China and Canada. In the appendix we provide a table showing the estimated additional arrivals from each nation in June and July 2010. The most poignant statistic is the number of tourist arrivals from the Republic of

Ireland. They narrowly missed qualification after losing a play-off game against France who scored through the striker Thierry Henry who was clearly shown on TV replays to have illegally used his hand to guide the ball into the net. Despite this clear evidence of cheating, the result stood and Ireland missed out. According to our estimates arrivals from Ireland fell by 592 in June and July 2010 (model 1), one of only 13 countries to register a decline. On the basis of model 2 only Malawi registered a larger fall.

Table 5: All nations 2010

Month	Actual	Fall under no WC scenario (1)	Fall under no WC scenario (2)
January	945742	84927	59484
February	781957	45112	-10964
March	824598	64540	16933
April	852199	17666	-21764
May	764955	53230	-55475
June	957226	223485	157255
July	1001856	167310	113183
August	1011231	163711	114890
September	942120	107345	44654
October	985433	100019	37253
November	985983	116218	49292
December	1109399	147607	121469
Total June/July	1959082	390795	270438
2010 total	11162699	1291171	626209

Table 6: SADC nations 2010

Month	Actual	Fall under no WC scenario (1)	Fall under no WC scenario (2)
January	751118	69760	58581
February	580902	22709	-20994
March	616705	34737	-878
April	695980	26874	-655
May	598496	26128	-70672
June	640535	55644	-799
July	779161	120890	78170
August	787422	114967	79118
September	736356	65293	17359
October	741012	62993	16529
November	751534	81510	31901
December	867869	119533	106976
Total June/July	1419696	176535	77371
2010 total	8547090	801037	294636

Table 7: FIFA World Cup participant nations 2010

Month	Actual	Fall under no WC scenario (1)	Fall under no WC scenario (2)
January	143628	14836	2972
February	148323	17193	6759
March	156477	25962	16278
April	115523	-5500	-15069
May	118856	20527	11262
June	250850	141376	133789
July	161106	29130	20907
August	169460	37042	27242
September	150169	31707	20101
October	181773	29097	16297
November	166864	23146	9740
December	177290	20324	9238
Total June/July	411956	170506	154696
2010 total	1940319	384841	259517

Table 8: Non-SADC, non-participant nations 2010

Month	Actual	Fall under no WC scenario (1)	Fall under no WC scenario (2)
January	50996	331	-2069
February	52732	5211	3270
March	51416	3842	1532
April	40696	-3708	-6041
May	47603	6575	3935
June	65841	26465	24265
July	61589	17289	14105
August	54349	11702	8530
September	55595	10345	7194
October	62648	7929	4427
November	67585	11563	7651
December	64240	7750	5255
Total June/July	127430	43754	38370
2010 total	675290	105294	72056

Table 9: Latin American nations 2010

Month	Actual	Fall under no WC scenario (1)	Fall under no WC scenario (2)
January	6218	-398	-6
February	5361	-204	-33
March	6101	155	413
April	4666	-1211	-990
May	7427	1825	1786
June	47394	41515	41551
July	12160	5550	5963
August	6590	1008	904
September	7010	518	462
October	7796	514	769
November	6393	-128	-265
December	8682	818	1267
Total June/July	59554	47065	47514
2010 total	125798	49962	51822

Table 10: Tourist arrivals from Latin America in June and July

Year	Participants	Non-participants
2001	6365	755
2002	5293	888
2003	5889	772
2004	6180	933
2005	7147	949
2006	7690	1101
2007	8913	1293
2008	9847	1527
2009	9650	1277
2010	52632	6922
2011	14799	1709

Table 11: 25 largest increases in tourist arrivals attributable to the World Cup in June/July 2010 (Model 1)

Country	Arrivals	Extra arrivals model (1)	Extra arrivals model (2)
LESOTHO	415360	95365	25441
MOZAMBIQUE	256369	54974	7936
UNITED STATES OF AMERICA	82323	27717	27529
SWAZILAND	189747	22786	9716
GERMANY	30929	14868	11665
BRAZIL	20600	13861	13383
MEXICO	13131	12962	13157
AUSTRALIA	26181	11034	10017
FRANCE	22794	10744	8502
NETHERLANDS	25927	10548	9849
UNITED KINGDOM	78824	10063	8426
PORTUGAL	12487	8125	6896
ARGENTINA	10620	7832	9250
SPAIN	12103	7075	6307
CHINA	12726	7069	6172
BOTSWANA	152338	5902	22392
JAPAN	8783	5683	4917
INDIA	14752	4323	3165
CHILE	4722	4302	4329
SWITZERLAND	7563	4259	3874

ITALY	12190	4200	3173
CANADA	11637	4004	3598
GHANA	6076	3892	3412
NAMIBIA	34270	3094	2671
ALGERIA	2487	2364	2413

6. Conclusions

A key component of the estimated economic impact of major sports events is the number of tourist visitors. In this paper we have used monthly data on tourist arrivals in South Africa over the last decade to estimate the size of the effect. We estimate that the additional number of tourist arrivals in June and July 2010 from non-SADC countries was 211,250, somewhat smaller than the official South African government claim that 309,554 tourists arrived during these months specifically to attend the World Cup. It is reasonable to suppose that the difference represents “avoiders”- people who would have otherwise travelled to South Africa during this period but were discouraged by the soccer event.

However, while some avoiders may cancel all plans to visit South Africa, they might also choose to come at different time, and indeed some tourists might choose to visit South Africa after the World Cup, because of the favorable impression created by the event. We estimate the total impact of the World Cup on visitors to South Africa in 2010 to be as high as 490,135.

Are these large numbers in relation to total tourist arrivals in South Africa? This depends on whether the denominator includes all tourist visitors, or only non-SADC visitors. In the former case these numbers represent only 1.9% (June/July) or 4.3% (all 2010), while in the latter case 8.1% and 18.7% respectively.

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Appendix 1: Data adjustment procedure

During our sample period Statistics South Africa changed its definition of tourist arrivals. As of January 2009, they exclude all people arriving and leaving on the same day (same day visitors). These arrivals are included in the tourist data between 2001 and 2008. For this period we have no separate number for same day visitors. As of 2009 Statistics South Africa reports the over-all total of same day visitors by month, but does not split this out by country of origin. This poses a problem when comparing the arrival data over time.

In order to make the data more comparable we rely on data from the South African Tourism Strategic Research Unit.⁹ This organization provides monthly data on tourist arrivals, split out for 60 countries and 8 regions. The data exclude same day visitors from the tourist arrivals only as of 2010. This implies that in 2009 we have monthly arrivals including and excluding same day visitors for all countries with considerable numbers of arrivals. Apart from 2009, both data sources are highly comparable,¹⁰ although the definition of tourist arrivals is not completely identical.

For all countries available in both databases we calculate the difference between the monthly arrival data from both sources in 2009. We then determine for all months in 2009 which percentage of the overall monthly difference between both datasets is due to each country. For example, Lesotho is responsible for 35.8% of the total difference between both datasets in January 2009, whereas the UK is responsible for 1.8% in the same month. This gives us an estimate of the distribution of same day visitors over countries-of-origin for each month of the year. As we know the total number of

⁹ see <http://www.southafrica.net/sat/content/en/za/research-home> for more information on this organization.

¹⁰ The correlation between the country-level data for countries available in both data sets, was 98.5% for January 2010.

same day visitors from the Statistics South Africa database, we simply use the estimated distribution to split this number up by country-of-origin for the 2009-2011 period. Finally, we add this estimated number of same day visitors for each country to the monthly tourist arrival data. This gives us an estimate of the monthly tourist arrivals under the definition used prior to 2009.

Appendix 2: Panel regression estimates model 1

VARIABLES	(1) all	(2) micro	(3) non-sadc	(4) sadc
arrival _{it-12}	0.876*** (0.00354)	0.719*** (0.00774)	0.917*** (0.00414)	0.954*** (0.00595)
gdppc _{it}	0.169 (0.246)	0.218 (0.422)	0.377 (0.244)	-1.423*** (0.410)
gdppc _{it-12}	-0.104 (0.246)	0.0706 (0.422)	-0.322 (0.240)	1.461*** (0.409)
population _{it}	-1.657*** (0.300)	-1.150** (0.476)	-0.625 (0.389)	-3.806*** (1.095)
population _{it-12}	1.757*** (0.300)	1.268*** (0.477)	0.676* (0.390)	3.801*** (1.099)
realexch _{it}	0.333*** (0.0274)	0.395*** (0.0516)	0.340*** (0.0229)	0.469*** (0.0339)
realexch _{it-12}	-0.249*** (0.0272)	-0.272*** (0.0508)	-0.275*** (0.0233)	-0.361*** (0.0340)
distance	-0.316*** (0.0261)	-0.462*** (0.0495)	-0.156*** (0.0370)	-0.169*** (0.0185)
gdppc _{it} *distance	-0.716 (1.711)	3.345 (2.771)	-5.042*** (1.940)	-15.60*** (2.965)
gdppc _{it-12} *distance	0.698 (1.689)	-1.486 (2.739)	5.334*** (1.875)	16.21*** (2.907)
Tourist season	0.0293*** (0.00899)	0.0341* (0.0175)	0.0234*** (0.00712)	0.00581 (0.0103)
Cricket WC	0.0277 (0.0324)	-2.60e-06 (0.0627)	0.0557** (0.0258)	-0.0328 (0.0364)
Cricket WC participant	0.323*** (0.0910)	0.435** (0.186)	0.259*** (0.0678)	-0.0892 (0.121)
Confederations Cup	0.247 (0.216)	1.300* (0.687)	0.142 (0.134)	
Anglo sport	0.134*** (0.0518)	0.279** (0.120)	0.0732** (0.0345)	0.0963 (0.163)
West Europe	0.0985*** (0.0186)	0.163*** (0.0554)	0.0719*** (0.0127)	
OECD	0.104*** (0.0159)	0.280*** (0.0483)	0.0499*** (0.0102)	
Ex- Soviet	-0.0680*** (0.0154)	-0.0318 (0.0290)	-0.0342** (0.0134)	
Anglo-Saxon	0.243*** (0.0246)		0.154*** (0.0155)	
South American	0.000369 (0.0140)	-0.00691 (0.0245)	-0.0293** (0.0133)	
April 2009	-0.314*** (0.0484)	-0.411*** (0.0914)	-0.161*** (0.0412)	0.00730 (0.0493)
May 2009	-0.150*** (0.0488)	-0.0841 (0.0929)	-0.225*** (0.0412)	-0.0360 (0.0494)
June 2009	-0.244*** (0.0493)	-0.313*** (0.0954)	-0.143*** (0.0413)	-0.0747 (0.0494)

July 2009	-0.193*** (0.0486)	-0.211** (0.0921)	-0.121*** (0.0412)	-0.0364 (0.0495)
August 2009	-0.0713 (0.0490)	-0.0508 (0.0938)	-0.0549 (0.0412)	0.0574 (0.0495)
Sept 2009	-0.0619 (0.0487)	-0.0862 (0.0923)	-0.0290 (0.0413)	0.0529 (0.0496)
Oct 2009	-0.0888* (0.0495)	-0.0916 (0.0957)	0.0538 (0.0413)	-0.0510 (0.0496)
Nov 2009	-0.144*** (0.0489)	-0.145 (0.0932)	-0.0271 (0.0413)	-0.0838* (0.0497)
Dec 2009	-0.134*** (0.0495)	-0.0700 (0.0957)	-0.116*** (0.0413)	-0.0585 (0.0498)
Jan 2010	0.0176 (0.0495)	0.0275 (0.0961)	0.0597 (0.0411)	0.0593 (0.0495)
Feb 2010	0.00404 (0.0490)	-0.0282 (0.0941)	0.0801* (0.0410)	0.0955* (0.0495)
March 2010	-0.00897 (0.0490)	-0.0840 (0.0941)	0.107*** (0.0410)	0.130*** (0.0496)
April 2010	-0.0398 (0.0486)	-0.0114 (0.0925)	-0.0729* (0.0410)	0.0452 (0.0497)
May 2010	0.0492 (0.0496)	-0.00649 (0.0968)	0.157*** (0.0410)	0.115** (0.0497)
June 2010	0.674*** (0.0488)	0.865*** (0.0933)	0.605*** (0.0410)	0.338*** (0.0498)
July 2010	0.419*** (0.0485)	0.570*** (0.0919)	0.356*** (0.0411)	0.188*** (0.0499)
August 2010	0.0735 (0.0488)	-0.0212 (0.0933)	0.204*** (0.0410)	0.214*** (0.0499)
Sept 2010	0.136*** (0.0491)	0.113 (0.0943)	0.220*** (0.0411)	0.163*** (0.0500)
Oct 2010	0.0953* (0.0491)	0.202** (0.0943)	0.0424 (0.0411)	0.199*** (0.0500)
Nov 2010	0.107** (0.0489)	0.174* (0.0935)	0.0834** (0.0411)	0.213*** (0.0501)
Dec 2010	0.0543 (0.0489)	-0.0280 (0.0935)	0.182*** (0.0411)	0.210*** (0.0502)
WC participant*April 2009	0.233* (0.122)	0.407 (0.353)	0.124 (0.0793)	
WC participant*May 2009	-0.0504 (0.122)	-0.303 (0.354)	0.142* (0.0793)	
WC participant*June 2009	0.230* (0.131)	0.616* (0.353)	0.138 (0.0874)	
WC participant*July 2009	0.154 (0.122)	0.285 (0.354)	0.118 (0.0793)	
WC participant*August 2009	0.158 (0.122)	0.354 (0.354)	0.151* (0.0794)	
WC participant*Sept 2009	0.0592 (0.122)	-0.00626 (0.353)	0.0950 (0.0793)	
WC participant*Oct 2009	0.0555 (0.122)	0.146 (0.353)	-0.0456 (0.0793)	
WC participant*Nov 2009	0.110 (0.122)	0.0428 (0.354)	0.0858 (0.0793)	

WC participant*Dec 2009	0.192 (0.122)	0.359 (0.355)	0.203** (0.0793)
WC participant*Jan 2010	0.0760 (0.123)	0.0804 (0.355)	0.0724 (0.0793)
WC participant*Feb 2010	0.102 (0.122)	0.232 (0.354)	0.0424 (0.0793)
WC participant*March 2010	0.123 (0.122)	0.195 (0.353)	0.0439 (0.0793)
WC participant*April 2010	-0.136 (0.122)	-0.637* (0.354)	0.0526 (0.0793)
WC participant*May 2010	0.0807 (0.123)	-0.0550 (0.355)	0.0459 (0.0793)
WC participant*June 2010	0.381*** (0.122)	1.552*** (0.353)	0.218*** (0.0794)
WC participant*July 2010	-0.365*** (0.137)	-0.419 (0.402)	-0.271*** (0.0884)
WC participant*August 2010	0.0695 (0.122)	-0.0466 (0.354)	0.0203 (0.0794)
WC participant*Sept 2010	0.0663 (0.122)	-0.0299 (0.354)	0.0361 (0.0793)
WC participant*Oct 2010	0.0304 (0.122)	-0.211 (0.353)	0.167** (0.0793)
WC participant*Nov 2010	-0.0231 (0.122)	-0.302 (0.354)	0.100 (0.0793)
WC participant*Dec 2010	-0.00238 (0.122)	-0.133 (0.354)	-0.0379 (0.0793)
WC quarter finalist*July 2010	0.415* (0.219)	1.034 (0.796)	0.295** (0.132)
WC part* Lat Am*April 2009	0.0998 (0.112)	0.154 (0.183)	0.119 (0.116)
WC part* Lat Am*May 2009	0.354*** (0.114)	0.354* (0.187)	0.172 (0.116)
WC part* Lat Am*June 2009	-0.0243 (0.112)	-0.0123 (0.184)	-0.0136 (0.117)
WC part* Lat Am*July 2009	-0.0570 (0.114)	-0.0628 (0.187)	0.0607 (0.116)
WC part* Lat Am*Aug 2009	-0.127 (0.114)	-0.161 (0.188)	-0.114 (0.116)
WC part* Lat Am*Sept 2009	-0.0360 (0.112)	-0.00876 (0.183)	-0.107 (0.116)
WC part* Lat Am*Oct 2009	0.0103 (0.112)	-0.0547 (0.184)	0.263** (0.116)
WC part* Lat Am*Nov 2009	-0.345*** (0.114)	-0.403** (0.187)	0.00748 (0.116)
WC part* Lat Am*Dec 2009	0.280** (0.116)	0.193 (0.193)	0.343*** (0.116)
WC part* Lat Am*Jan 2010	-0.112 (0.118)	-0.228 (0.198)	0.127 (0.116)
WC part* Lat Am*Feb 2010	0.137 (0.114)	0.0961 (0.188)	0.154 (0.116)
WC part* Lat Am*March 2010	0.525*** (0.112)	0.569*** (0.184)	0.355*** (0.116)

WC part* Lat Am*April 2010	-0.00962 (0.114)	-0.0111 (0.187)	0.0262 (0.116)
WC part* Lat Am*May 2010	0.435*** (0.116)	0.564*** (0.193)	0.301*** (0.116)
WC part* Lat Am*June 2010	1.301*** (0.112)	1.021*** (0.183)	1.188*** (0.116)
WC part* Lat Am*July 2010	0.604*** (0.114)	0.417** (0.185)	0.699*** (0.123)
WC part* Lat Am*Aug 2010	0.286** (0.114)	0.386** (0.187)	0.260** (0.116)
WC part* Lat Am*Sept 2010	-0.0152 (0.114)	-0.0165 (0.188)	0.0441 (0.116)
WC part* Lat Am*Oct 2010	0.0980 (0.112)	0.0931 (0.184)	-0.0250 (0.116)
WC part* Lat Am*Nov 2010	0.00923 (0.114)	-0.0327 (0.187)	0.00619 (0.116)
WC part* Lat Am*Dec 2010	-0.00738 (0.116)	0.120 (0.192)	0.00496 (0.116)
Small*WC part*April 2009	-0.0965 (0.210)		-0.100 (0.125)
Small*WC part*May 2009	-0.282 (0.210)		-0.266** (0.124)
Small*WC part*June 2009	-0.0656 (0.216)		-0.0224 (0.132)
Small*WC part*July 2009	-0.188 (0.210)		-0.227* (0.125)
Small*WC part*August 2009	-0.224 (0.210)		-0.187 (0.125)
Small*WC part*Sept 2009	-0.0822 (0.210)		-0.0572 (0.125)
Small*WC part*Oct 2009	0.0505 (0.210)		-0.0469 (0.125)
Small*WC part*Nov 2009	-0.125 (0.210)		-0.321*** (0.125)
Small*WC part*Dec 2009	-0.230 (0.210)		-0.230* (0.125)
Small*WC part*Jan 2010	0.0143 (0.210)		-0.0967 (0.125)
Small*WC part*Feb 2010	-0.0256 (0.210)		-0.0171 (0.125)
Small*WC part*March 2010	-0.175 (0.210)		-0.109 (0.125)
Small*WC part*April 2010	-0.0943 (0.210)		-0.242* (0.124)
Small*WC part*May 2010	0.0357 (0.210)		0.0554 (0.125)
Small*WC part*June 2010	0.756*** (0.210)		1.066*** (0.125)
Small*WC part*July 2010	0.145 (0.211)		0.126 (0.127)
Small*WC part*August 2010	-0.0692 (0.210)		-0.109 (0.125)

Small*WC part*Sept 2010	-0.0542 (0.210)		-0.100 (0.125)	
Small*WC part*Oct 2010	-0.231 (0.210)		-0.238* (0.125)	
Small*WC part*Nov 2010	-0.120 (0.210)		-0.185 (0.125)	
Small*WC part*Dec 2010	-0.128 (0.210)		-0.200 (0.125)	
t				-0.000930*** (0.000229)
Constant	2.673*** (0.226)	0.428 (0.484)	0.926*** (0.292)	0.913*** (0.232)
Observations	17,409	7,905	8,208	1,296
R-squared	0.959	0.688	0.966	0.994

Appendix 3: Individual country estimates for June/July 2010

Country	Arrivals	Extra arrivals model (1)	Extra arrivals model (2)
AFGHANISTAN	86	-17	-10
ALBANIA	86	72	74
ALGERIA	2487	2364	2413
ANGOLA	6895	1766	967
ANTIGUA AND BARBUDA	3	1	1
ARGENTINA	10620	7832	9250
ARMENIA	61	64	62
AUSTRALIA	26181	11034	10017
AUSTRIA	2803	1151	989
AZERBAIJAN	129	165	159
BAHAMAS	53	58	52
BAHRAIN	112	96	97
BANGLADESH	545	100	0
BARBADOS	77	70	68
BELGIUM	5799	411	-97
BELIZE	13	5	5
BENIN	226	63	20
BOLIVIA	246	155	163
BOTSWANA	152338	5902	22392
BRAZIL	20600	13861	13383
BRUNEI DAR US SALAM	21	10	18
BULGARIA	447	200	196
BURKINA FASO	132	55	24
BURUNDI	137	-51	-39
CAMBODIA	60	60	60
CAMEROON	1864	940	1015
CANADA	11637	4004	3598
CAPEVERDE ISLAND	83	13	-3
CENTRAL AFRICAN REP	24	6	5
CHAD	62	38	18
CHILE	4722	4302	4329
CHINA	12726	7069	6172
COLOMBIA	1657	1498	1483
COMOROS	41	16	13
COSTA RICA	572	595	583
COTE D IVOIRE	1160	860	849
CROATIA	309	195	147

CYPRUS	533	364	328
CZECH REP	659	148	114
DEM REP OF CONGO	4466	-4328	-1086
DENMARK	4527	1349	1391
DJIBOUTI	18	14	8
DOMINICAN REP	56	67	65
ECUADOR	515	492	483
EGYPT	1383	452	413
EL SALVADOR	287	323	327
EQUATORIAL GUINEA	69	9	28
ERITREA	112	44	22
ESTONIA	170	120	98
ETHIOPIA	1310	-1774	-556
FIJI	27	8	7
FINLAND	2068	1176	1164
FRANCE	22794	10744	8502
GABON	901	377	185
GAMBIA	195	101	88
GERMANY	30929	14868	11665
GHANA	6076	3892	3412
GREECE	2802	1745	1659
GRENADA	8	6	8
GUATEMALA	375	395	390
GUINEA	492	263	210
GUINEA-BISSAU	51	27	24
GUYANA	49	12	6
HONDURAS	1217	1384	1400
HUNGARY	629	405	369
ICELAND	125	84	40
INDIA	14752	4323	3165
INDONESIA	1643	1364	1206
IRAN	604	98	88
IRAQ	69	43	36
IRELAND	4773	-592	-1677
ISRAEL	4916	2355	2203
ITALY	12190	4200	3173
JAMAICA	200	124	116
JAPAN	8783	5683	4917
JORDAN	513	288	252
KAZAKHSTAN	270	223	229
KENYA	5899	1486	1148

KOREA	4599	1208	1549
KUWAIT	307	179	164
KYRGYZSTAN	2	-11	-9
LAOS	23	25	25
LATVIA	91	46	-12
LEBANON	1041	766	668
LESOTHO	415360	95365	25441
LIBERIA	96	-9	10
LIBYA	443	337	323
LITHUANIA	138	28	5
LUXEMBOURG	155	27	11
MADAGASCAR	745	356	278
MALAWI	21046	-2760	-5546
MALAYSIA	2469	1297	1170
MALDIVES	45	53	52
MALI	352	240	202
MALTA	120	74	49
MAURITANIA	93	81	77
MAURITIUS	4058	1869	1569
MEXICO	13131	12962	13157
MOLDOVA	41	27	25
MONGOLIA	128	142	147
MOROCCO	468	346	298
MOZAMBIQUE	256369	54974	7936
MYANMAR	98	59	45
NAMIBIA	34270	3094	2671
NEPAL	105	67	48
NETHERLANDS	25927	10548	9849
NEW ZEALAND	3942	647	553
NICARAGUA	47	50	48
NIGER	48	30	13
NIGERIA	8424	1352	-763
NORWAY	3340	1358	1283
OMAN	174	136	140
PAKISTAN	2643	932	604
PANAMA	247	249	247
PAPUA NEW GUINEA	18	20	17
PARAGUAY	785	789	776
PERU	985	750	709
PHILIPPINES	3312	2287	2317
POLAND	1833	866	697

PORTUGAL	12487	8125	6896
QATAR	150	83	103
REP OF CONGO	653	-238	-81
ROMANIA	481	223	180
RUSSIAN FEDERATION	2781	1556	1467
RWANDA	601	269	146
SAMOA	4	-10	-9
SAO TOME AND PRINCIPE	35	22	16
SAUDI ARABIA	1183	-520	-756
SENEGAL	533	183	124
SERBIA/YUGOSLAVIA	129	-16	6
SEYCHELLES	270	58	-73
SIERRA LEONE	201	74	70
SINGAPORE	1649	204	515
SLOVAK REP	1950	1835	1806
SLOVENIA	1260	1261	1230
SOLOMON ISLAND	3	1	0
SPAIN	12103	7075	6307
SRI LANKA	585	274	250
ST LUCIA	9	1	2
ST VINCENT AND GRENADINES	7	4	4
SUDAN	448	33	66
SURINAME	23	17	13
SWAZILAND	189747	22786	9716
SWEDEN	4317	1739	1931
SWITZERLAND	7563	4259	3874
SYRIA	245	185	178
TAIWAN	1962	-1014	171
TANZANIA	4135	1454	871
THAILAND	2262	871	1199
TOGO	103	34	16
TONGA	3	0	-1
TRINIDAD AND TOBAGO	240	188	177
TUNISIA	280	154	83
TURKEY	2248	1269	890
TURKMENISTAN	10	4	8
UGANDA	2593	340	221
UKRAINE	723	275	323
UNITED ARAB EMIRATES	377	19	42
UNITED KINGDOM	78824	10063	8426
UNITED STATES OF AMERICA	82323	27717	27529

URUGUAY	1557	1467	1476
UZBEKISTAN	79	50	69
VENEZUELA	1456	1393	1278
YEMEN	135	104	101
ZAMBIA	26003	2112	-1686
