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### Stock market reactions to FIFA World Cup announcements: An event study

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#### Abstract

This article examines stock market reactions in countries competing to hold the FIFA World Cups around the time of the winning bid announcements. We analyze the announcement effects of winning and losing, beginning with 1994 FIFA World Cup announced in 1988, up until the announcement of the 2022 FIFA World Cup in 2010, with 18 countries, including of a mixture of developing and developed countries.. We observe no significant positive stock price reaction at the announcement dates for the winners, except for Qatar for the 2022 FIFA World Cup. However, we find significant cumulative abnormal returns for some countries. For the losing bidders, the results show significant negative abnormal return at the announcement dates for Morocco and Egypt for the 2010 FIFA World Cup, and again for Morocco for the 1998 FIFA World Cup. We also find that, on average, the losing bidders display significant negative CARs.

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## 1. Introduction

The FIFA World Cup is the most prominent sporting event and the most widely viewed and followed sporting event in the world, exceeding even the Olympic Games, both recognized as a mega-event. Dwyer et al. (2005) refer to mega-events as one-time or recurring events of limited duration. The FIFA World Cup displays characteristics that are consistent with the characteristics displayed by mega sporting events, namely being internationally recognized; generating global media interest; and requiring very large expenditures, such as large construction projects (infrastructural, productive or not) and operational costs, frequently funded by the host governments (Hill, 2000). Countries strongly compete to host FIFA World Cup, and provide public funding, on the basis of the positive effects on the country's economy brought about by this event. It is envisaged that the event will make a significant contribution to socioeconomic development through the creation of jobs, the resultant decrease in unemployment and increased revenue generated by the influx of tourists (Hill, 2000). However, there is some controversy about the wealth effects of hosting these events. Several authors suggest that the actual impact of mega-vents may be substantially lower than the one estimated, but also that there is lack of empirical evidence demonstrating that the international exposure and the publicity associated with the event have any impact in improving the country or region for tourism or business (e.g., Baade and Matheson, 2004; Matheson, 2006; Hagn and Maennig, 2009; Li et al., 2013). Nevertheless, in recent studies, Allmers and Maennig (2009) and Anton et al. (2011) provide evidence that the FIFA World Cup gives rise to positive economic effects.<sup>1</sup>

As stock markets reflect the expectations for the economic outlook, the financial markets should immediately incorporate the anticipated impact of the FIFA World Cups with the initial announcement of the award to a given country. A number of studies examine the effect of the announcement of the hosting city for the Olympic Games on stock markets, and find a significant positive effect for the winning country (Berman et al., 2000; Veraros et al., 2004; Mirman and Sharma, 2010; Dick and Wang, 2010). Only few studies analyze the impact of the announcement of the hosting country for the FIFA World Cup on stock markets. Obi et al. (2009) examine the South African equity market impact of the announcement of the 2010 FIFA World Cup held in South Africa. They find that abnormal return in the event month is not significant. Martins and Serra (2011) investigate the impact of the announcement of five FIFA World Cups host between 1990 and 2006 on the stock markets of host countries.<sup>2</sup> They observe no significant stock price reaction at (and around) the announcement dates for the winning and losing countries, on average. Ramdas et al. (2015) investigate the impact of hosting FIFA World Cups on the stock market of the host country when the tournament is announced for five FIFA World Cups, host between 1994 and 2010. They find that country stock markets react differently to the announcement of the tournament. For instance South Africa appears to show a positive trend in stock returns at the tournament announcement date, while Japan shows a decline in daily stock returns a day after the announcement of the tournament. It is found that for the tournament announcement, most countries show insignificant negative cumulative abnormal stock returns.<sup>3</sup>

This study contributes to the understanding of the impacts of mega sporting events on host

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<sup>1</sup>Allmers and Maennig (2009) examine the effects of the 1998, 2006 and 2010 FIFA World Cups, and Anton et al. (2011) focus on the 2010 FIFA World Cups.

<sup>2</sup>Martins and Serra (2011) also analyze large international sporting and cultural events, such as the Summer and Winter Olympic Games, the European Football Cup and World and Specialized Exhibitions.

<sup>3</sup>Others studies analyze the impact of national team soccer results on stock returns (see, e.g., Ashton et al., 2003; Edmans et al., 2007; Benkraiem et al., 2009; Palomino et al., 2009; Scholtens and Peenstra, 2009; Kaplinski and Levy, 2010; Fung et al., 2015).

country stock markets, with specific reference to the FIFA World Cup. We examine stock price reaction around the announcement of the selected country to host the World Football Cup. For that, we evaluate the abnormal returns of winning and losing bidders on (and around) the announcement date using an event study approach. This study consists of a large sample of eight FIFA World Cups, hosted between the period 1994 and 2022, with 18 countries, including of a mixture of developing and developed countries.. We observe no significant positive stock price reaction at the announcement dates for the winners, except for Qatar for the 2022 FIFA World Cup. However, we find significant cumulative abnormal returns for some countries. For the losing bidders, the results show significant negative abnormal return at the announcement dates for Morocco and Egypt for the 2010 FIFA World Cup, and again for Morocco for the 1998 FIFA World Cup. We also find that, on average, the losing bidders display significant negative CARs. Overall, it seems that market reactions in developing countries are more (positively or negatively) significant than for developed countries, suggesting that investors in these countries believe that hosting FIFA World Cup can imply positive economic effects for the hosting country.

The remainder of this paper is organized as follows: Section 2 presents the background on FIFA World Cups, and Section 3 describes the event-study methodology. The data and the empirical results are presented in Section 4. The conclusion is drawn in Section 5.

## **2. Background on FIFA World Cups**

The FIFA World Cup is an international association football competition contested every four years by the national teams of the members of Fédération Internationale de Football Association (FIFA). The host country is chosen in a vote by FIFA's Executive Committee. The decision on who will host the World Cup is usually made six or seven years in advance of the tournament. However, there have been occasions where the hosts of multiple future tournaments were announced at the same time, as was the case for the 2018 and 2022 World Cups, which were awarded to Russia and Qatar, respectively.

Since the 1958 FIFA World Cup, to avoid future boycotts or controversy, FIFA began a pattern of alternating the hosts between the Americas and Europe, which continued until the 1998 FIFA World Cup. On July 1, 1992, the 1998 FIFA World Cup has been accorded to France with only one round of voting against Morocco (12 votes vs 7 votes). On May 31, 1996, the hosting selection meeting was held for the 2002 FIFA World Cup. South Korea and Japan were competitors in the bidding process, but just before the vote, they agreed with FIFA to co-host the event. This joint bid formed between Japan and South Korea was chosen from an oral vote ("voted by acclamation"). The 2002 FIFA World Cup was the first one held in Asia, and the only tournament with multiple hosts. Indeed, the rivalry and distance between the two Asian countries led to organizational and logistical problems. Therefore, in 2004 FIFA officially stated that its statutes did not allow co-hosting bids. On July 6, 2000, Germany was designed to host the 2006 FIFA World Cup against South Africa after three rounds of voting and one abstention in the final vote (12 votes against 11), whereas Morocco and England were excluded after the first and second round, respectively.

Following the controversy surrounding Germany's victory over South Africa in the vote to host the 2006 tournament, FIFA decided to rotate the hosting of the final tournaments between its constituent confederations on August 4, 2000, allowing only countries from the chosen confederation to bid to host the tournament. On July 7, 2001, the FIFA Congress decided that the rotation began in Africa, and thus only African member associations were invited to submit

bids to host the 2010 FIFA World Cup. On May 15, 2004, 2010 FIFA World Cup has been designed to South Africa against Morocco and Egypt (14 votes vs 10 and 0, respectively). South Africa became the first African nation to host the World Cup. For the 2014 FIFA World Cup, the South American confederation has been chosen. Brazil was the only nation to submit a formal bid for this tournament, and the FIFA Executive Committee confirmed it as the host country on October 30, 2007, by a unanimous decision.<sup>4</sup> It was the first occasion where consecutive World Cups are held outside Europe.

On October 29, 2007, FIFA announced that it will no longer continue with its continental rotation policy. This is partly to avoid a similar scenario to the bidding process for the 2014 tournament, where Brazil was the only official bidder. The newest host selection policy is that any country may bid for a World Cup, provided that their continental confederation has not hosted either of the past two World Cups. For the 2018 World Cup bidding process, this meant that bids from Africa and South America were not allowed. On December 2, 2010, Russia was selected to host the 2018 FIFA World Cup against two joint bids formed between Spain-Portugal and Netherlands-Belgium (13 votes against 7 and 2, respectively; with 2 rounds of voting) and England (eliminated after the first round); and Qatar was designed to host the 2022 FIFA World Cup against the US after four rounds of voting (14 votes vs 8), and Australia, Japan and South Korea were excluded successively after the first three rounds.

### 3. Methodology

To investigate the effects of announcements of FIFA World Cup on stock market prices, we use an event study methodology. It has widely been applied to many fields in financial economics but less frequently to sport events. Event studies examine the behavior of abnormal returns of a security around a relevant event. In our case, events are announcements made by FIFA about the winning and losing bidders. The incorporation of the information, following an event, in asset prices may be immediate or may spread out over time. The choice of the event window is not based on formal rules and can differ among different studies. We opt for three event windows ranging between one day before and two days after the announcement. We take this short event period in order to avoid that event periods overlap, which could result in misinterpretations of the outcome of the analysis.

This analysis follows MacKinlay (1997) and uses a market model which is defined as follows:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \quad (1)$$

where  $R_{it}$  denotes the log return of market  $i$  measured by the national stock indices,  $R_{mt}$  the log return of the world portfolio, and  $\varepsilon_{it}$  is the error term with  $E(\varepsilon_{it}) = 0$  and  $var(\varepsilon_{it}) = \sigma_{\varepsilon_i}^2$ . The parameters  $\alpha_i$ ,  $\beta_i$  and  $\sigma_{\varepsilon_i}^2$  are estimated for the estimation window  $(T_0 - 160; T_0 - 10)$ , where  $T_0$  is the date of the event, from a GJR-GARCH model to capture time-varying volatility and asymmetric variance effects in the market model (Glosten et al., 1993). This GJR-GARCH model allows to take into account the well-known leverage effect in the stock market (Black, 1976; Christie, 1982; Schwert, 1989).<sup>5</sup>

$$\begin{aligned} E(\varepsilon_{it}) &= 0 & Var(\varepsilon_{it}) &= h_{it}^2 \\ h_{it}^2 &= \omega + \alpha \varepsilon_{it-1}^2 + \gamma I_{t-1} \varepsilon_{it-1}^2 + \beta h_{it-1}^2 \end{aligned}$$

<sup>4</sup>Colombia, Chile and Argentina had withdrawn their bid.

<sup>5</sup>To handle a possible conditional heteroskedasticity, Edmans et al. (2007) and Kaplanski and Levy (2010) use a symmetric GARCH model to only capture time-varying volatility.

where  $I_{t-1} = 1$  if  $\varepsilon_{it-1} < 0$ , and 0 otherwise. The volatility is positive if  $\alpha > 0, \gamma \geq 0, \alpha + \gamma \geq 0$  and  $\beta \geq 0$ . The process is defined as stationary if the constraint  $\alpha + \beta + (\gamma/2) < 1$  is satisfied.<sup>6</sup> The abnormal returns (ARs) for the event window can be computed as

$$AR_{i\tau} = R_{it} - \hat{\alpha}_i - \hat{\beta}_i R_{mt} \quad (2)$$

where  $AR_{i\tau}$  denotes the abnormal returns of market  $i$  at point  $\tau$  during the event window. The standardized abnormal return ( $SAR_t$ ), is defined as

$$SAR_{i\tau} = \frac{AR_{i\tau}}{\hat{h}_{i\tau}^{1/2}} \quad (3)$$

where  $\hat{h}_{i\tau}$  the estimated volatility from a GJR-GARCH model. Abnormal returns are used to compute cumulative abnormal returns (CARs) as the sum of the daily abnormal returns over the event window:

$$CAR_i(\tau_1, \tau_2) = \sum_{\tau=\tau_1}^{\tau_2} AR_{i\tau} \quad (4)$$

where  $(\tau_1, \tau_2)$  is the event window. The corresponding standardized cumulative abnormal return ( $SCAR_{i\tau}$ ) is defined as

$$SCAR_i(\tau_1, \tau_2) = \frac{CAR_i(\tau_1, \tau_2)}{\hat{h}_{i\tau}^{1/2}} \quad (5)$$

We then perform significance tests on the effect of FIFA World Cup announcements on stock market prices. The null hypothesis indicates that these events have no impact on stock prices. In other words, we test whether  $AR_t$  and  $CAR_t$  are significantly different from zero for each day within the event window. We make use of the cross-sectional parametric test suggested by Corrado (2011), Bina and Vo (2007), and Savickas (2003), which addresses both the conditionally heteroscedastic behavior of volatility and the event-induced variance changes.

#### 4. Data and Results

Announcement dates were gathered from FIFA as well as voting results. Table 1 displays the announcement dates for the results of the World Cup organization as well as the winning and losing bidders. Our sample includes a large sample of eight FIFA World Cups with 18 countries, including of a mixture of developing and developed countries.

We use major stock indices from each country as a proxy for market returns, namely CAC40 (France), DAX30 (Germany), FTSE100 (England), IBEX35 (Spain), FTSE MIB (Italy), BEL20 (Belgium), AEX (Netherlands), PSI20 (Portugal), RTS (Russia), Merval (Argentina), BOVESPA (Brazil), QE (Qatar), NIKKEI225 (Japan), KOSPI (South Korea), ASX (Australia), SP500 (US), JSE (South Africa). For Morocco and Egypt the major indices do not have a sufficiently

<sup>6</sup>Ling and McAleer (2002b) have derived the regularity conditions for a GJR-GARCH(1,1), defined as follows:  $E[\varepsilon_t^4] = 3\alpha^2 + 2\alpha\beta + \beta^2 + \beta\gamma + 3\alpha\gamma < 1$ .  $\gamma > 0$  is the asymmetric leverage coefficient, which describes the volatility leverage effect. The GJR model nets the GARCH model when  $\gamma = 0$ . These conditions are satisfied for all the models.

long history, and we use their respective Datastream Index. The world market portfolio is represented by the MSCI World Index. The daily returns are computed as the natural logarithmic first difference of the daily closing prices, which are obtained from Datastream Thomson.

Table 2 shows the abnormal returns at and around the announcement of winning and losing bidders, for each FIFA World Cup. We present ARs and CARs as well as significance tests for three windows of interest:  $[0; +1]$ ,  $[0; +2]$  and  $[-1; +2]$ .

We observe no significant positive stock price reaction at the announcement dates for the winners, except for Qatar one day after the announcement of 2022 FIFA World Cup with a significant positive abnormal return of 3.2%. This finding indicates that investors have a positive view of this event for the Qatar economy. These results hold for the different event windows, especially with a positive CAR of 6.6% for the event window  $[0; +2]$ . However, we find significant negative abnormal returns for Japan one day after that the 1996 FIFA World Cup was announced, suggesting that the market perceives the investments for the organization of the FIFA World Cup as economy-wide damaging projects. We also find significant positive CARs for the event windows  $[0; +2]$  and  $[-1; +2]$  for South Korea (+2.6% and +4.3%) and Russia (+3.5% and 4.5%) for the 1996 and 2018 FIFA World Cups, respectively. It seems that for the 1996 FIFA World Cup the South Korean stock market perceived this event as an economic opportunity for this developing country rather than for the Japanese stock market. On average, the stock market of the winners did not display significantly positive abnormal returns at and around the announcement, when excluding Qatar, using the average CARs.<sup>7</sup> This result is coherent with that obtained by Martins and Serra (2011) for the winning bidders. Overall, it seems that market reactions in the winning bidders are not significant or negatively significant in developed countries and rather positively significant in developing countries.<sup>8</sup> Note that all the winning bidders are classified as high or upper-middle income countries.

For the losing bidders, we find significant negative abnormal return at the announcement dates for the 2010 FIFA World Cup of -2.79% and -4.20% for Morocco and Egypt, respectively, and again for Morocco with abnormal return of -5.4% for the 1998 FIFA World Cup, showing that investors believe that hosting this event can imply positive economic effects for the hosting country. The result for these two lower-middle income countries is confirmed by CARs for the three event windows, with, for example, a negative CAR of 5.1% and 11.6% for Morocco and Egypt, respectively, for the event window  $[0; +2]$ . This finding shows that the losing developing African countries seem to be more affected by the announcement than the other losing countries. We also find significant negative CARs for the Belgium/Netherlands joint bid and Spain for the 2018 FIFA World Cup, and for the US for the 2022 FIFA World Cup, for most of event windows. Contrary to Martins and Serra (2011), we find that, on average, the losing bidders display significant negative CARs, with a mean CAR of 3% for the three event windows.<sup>9</sup>

## 5. Conclusion

This article examined stock market reactions in countries competing to hold the FIFA World Cups around the time of the winning bid announcements. We analyzed the announcement

<sup>7</sup>The average Cumulated Abnormal Returns are obtained as follows:  $\overline{CAR}_i(\tau_1, \tau_2) = \frac{1}{N} \sum_{i=1}^N CAR_i(\tau_1, \tau_2) = \frac{1}{N} \sum_{i=1}^N \sum_{\tau=\tau_1}^{\tau_2} AR_{i\tau}$ , where  $N$  is the number of events, here, the number of winners (losers).

<sup>8</sup>More precisely, Qatar and South Korea are classified as developing countries whereas Russia is classified as economy in transition.

<sup>9</sup>This difference can be explained by the fact that Martins and Serra (2011) only one longer event window ( $[-20; 20]$ ).

effects of winning and losing, beginning with 1994 FIFA World Cup announced in 1988, up until the announcement of the 2022 FIFA World Cup in 2010, with 18 countries, including of a mixture of developing and developed countries.

Overall, it seems that market reactions in the winning bidders are not significant or negatively significant in developed countries and rather positively significant in developing countries, especially for Qatar. For the losing bidders, the results showed significant negative abnormal return at the announcement dates for two developing African countries classified as lower-middle income countries (Morocco and Egypt). This result shows that perhaps market reactions in African countries are more negatively significant than for the others countries, suggesting that investors in these countries believe that hosting FIFA World Cup could imply positive economic effects for the hosting country. This finding for the FIFA World Cups is inherently different with the Olympic Games because no African city competed to host Olympic Games and no lower-middle income country can organize this mega-event.

Further research can analyze the impact of FIFA World Cups on sectors which can be affected by the organization of this event, such as Beverages, Construction, Leisure and Tourism, Media, Retail, Communications and Transportation.

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Table 1: Winning and losing bidders of FIFA World Cup (1994-2022).

Date	04/07/1988	02/07/1992	31/05/1996	07/07/2000
Winner	US	France	Japan/South Korea	Germany
Losers	Morocco	Morocco		South Africa England Morocco
Date	15/05/2004	30/10/2007	02/12/2010	02/12/2010
Winner	South Africa	Brazil	Russia	Qatar
Losers	Morocco Egypt		Belgium/Netherlands Spain/Portugal England	US South Korea Japan Australia

Table 2: Results for the announcement of the organization of FIFA World Cups.

Date		$AR_{it}$				$CAR_{it}$		
		-1	0	+1	+2	(0;+2)	(0;+1)	(-1;+2)
04/07/1988								
Winner	US	-0.004	0.015	-0.009	-0.003	0.004	0.008	-0.004
Loser	Morocco	0.011	0.002	0.010	0.019**	0.054*	0.017	0.084*
02/07/1992								
Winner	France	-0.016	-0.008	0.004	-0.008	-0.021*	-0.005	-0.056*
Loser	Morocco	-0.022	0.012	-0.054*	0.032	-0.018	-0.060*	-0.065*
31/05/1996								
Winners	Japan	-0.009	0.001	-0.019*	0.010	-0.012	-0.024*	-0.031*
	South Korea	0.007	0.006	-0.006	0.015	0.026*	0.001	0.043*
07/07/2000								
Winner	Germany	-0.005	0.004	-0.006	-0.011	-0.013	0.005	-0.024**
Losers	South Africa	-0.009	-0.013	0.006	0.001	-0.012	-0.010	-0.031*
	England	0.004	0.004	-0.007	0.002	-0.002	-0.004	-0.007
	Morocco	0.001	0.004	-0.003	0.005	0.011*	0.002	0.014*
15/05/2004								
Winner	South Africa	-0.025*	0.011	-0.011	0.026*	0.045*	-0.001	0.002
Losers	Morocco	0.003	-0.028*	-0.014*	0.012*	-0.051*	-0.059*	-0.053*
	Egypt	-0.007	-0.042*	-0.011	-0.014	-0.116*	-0.075*	0.148*
20/10/2007								
Winner	Brazil	-0.006	-0.005	-0.002	0.001	-0.011	-0.011	-0.025*
02/12/2010								
Winner	Russia	0.002	0.001	0.004	0.015	0.035*	0.007	0.045*
Loser	Belgium	0.003	0.001	-0.010	-0.002	-0.021*	-0.014**	-0.018*
	Netherlands	0.006	-0.001	-0.007	0.001	-0.011**	-0.011	-0.002
	Spain	0.016	0.003	-0.005	-0.011	-0.023**	-0.003	0.006
	Portugal	0.010	0.001	-0.002	0.001	-0.001	0.001	0.019*
	England	0.003	0.006	-0.012	0.005	-0.001	-0.008	0.004
02/12/2010								
Winner	Qatar	-0.009	0.001	0.032*	0.006	0.066*	0.045*	0.059*
Losers	US	0.004	-0.003	-0.005	-0.001	-0.015*	-0.012**	-0.010
	South Korea	0.004	0.003	-0.001	-0.002	0.000	-0.003	-0.008
	Japan	-0.005	0.009	-0.003	-0.000	0.010	-0.008	0.001
	Australia	-0.010	0.010	-0.000	-0.000	0.016**	0.014	-0.000
Total								
Winners		-0.009	0.004	0.003	0.004	0.019*	0.010**	0.004
Winners ex Qatar		-0.008	0.004	-0.002	0.003	0.008	0.002	-0.006
Losers		0.002	-0.005	-0.017*	0.007	-0.026*	-0.030*	-0.026*