9-2021

A Dichotomy of Sport Sponsorships: Does the Nature of Competition Among Sponsors Matter?

Thomas Doellman

Brian Walkup

Adrien Bouchet

Brian Chabowski

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Thomas W. Doellman[1], Brian R. Walkup[2], Adrien Bouchet[3], and Brian Chabowski[4]

Abstract

In this paper, we argue that the firm value implications of sport sponsorships for sponsors may depend on the competitive environment during the bidding process for different types of sponsorships. More specifically, we contend that the bidding environment for professional football (soccer) kit sponsorships represents a form of common value auction, while the bidding environment for corporate logo sponsorships on teams' shirts does not. As common value auctions are prone to winner's curse, the firm value implications should be different for kit sponsorship announcements than for shirt sponsorship announcements. Our results suggest that shareholders indeed perceive the value derived from kit and shirt sponsorships differently, resulting in the predicted distinction in their impact on sponsors' firm value. This study sheds light on conflicting results on firm value implications of sport sponsorships in the prior literature and provides rich areas for future research.

***Keywords*:** sponsorship; shareholder wealth; stock prices; event study

Draft: April 29, 2021

[1]Contact: John Cook School of Business, Saint Louis University, Davis-Shaughnessy Hall, 3674 Lindell Blvd, St. Louis, MO, 63108. tdoellma@slu.edu, 314.977.3815.

[2]Contact: Crummer Graduate School of Business, Rollins College, Crummer Hall, 1000 Holt Avenue, Winter Park, FL, 32789. bwalkup@rollins.edu, 407.691.1229.

[3]Contact: Collins College of Business, The University of Tulsa, Helmerich Hall, 800 South Tucker Drive, Tulsa, OK, 74133. adrien-bouchet@utulsa.edu, 918.631.2943.

[4]Contact: Collins College of Business, The University of Tulsa, Helmerich Hall, 800 South Tucker Drive, Tulsa, OK, 74133. brian-chabowski@utulsa.edu, 918.631.2953.

The sport sponsorship market is substantial and growing. IEG – the industry leader in sponsorship research – notes that the total spending by firms on all sponsorships in 2018 was estimated to be $23.1B in North America and $62.7B worldwide. Sport sponsorships accounted for over 75% ($17.5B) of this spending in North America and over 70% ($45.2B) worldwide. It is not surprising then that a steady stream of recent academic research has analyzed the impact of sport sponsorships on sponsors' firm value (Bouchet, Doellman, Troilo, & Walkup, 2015; Bouchet, Doellman, Troilo, & Walkup, 2017; Clark, Cornwell, & Pruitt, 2009; Cornwell, Pruitt, & Clark, 2005; Hino & Takeda, 2020; Jensen, 2016; Jensen & Cobbs, 2014; Jensen, Cobbs, & Turner, 2016; Mori, Morino, & Takeda, 2020).

Prior studies have analyzed a plethora of sport sponsorships, such as those involving individual athletes, the Olympic Games, auto racing events, the Super Bowl, and international football (commonly referred to as soccer in the United States) matches. However, the analyses of these sponsorships have largely been conducted with little consideration for how distinct types of sport sponsorships may be viewed differently and, therefore, valued differently by firm stakeholders. Thus, the prior literature provides little clarity on why some sport sponsorships have been found to be value enhancing or value neutral while others have been found to decrease firm value. The primary objective of this paper is to shed light on this important, yet unaddressed, issue.

The value proposition of sport sponsorships to firms is best exemplified by the proportion of total sponsorship spending going to sport sponsorships mentioned above. This value proposition can lead to fierce competition among prospective sponsors for the right to sponsor influential sports entities and sporting events. The most obvious source of value is the increased visibility of the sponsoring entity's brand during competitions that are frequently televised globally. For instance, the 2018 championship match of the men's FIFA World Cup, an international football

competition held every four years in which each team represents its country, attracted a viewing audience of more than 1.1 billion people worldwide (Richter, 2020). But the value proposition of sport sponsorships extends far beyond visibility via media channels. Sponsors of team jerseys and apparel can benefit directly from the purchase of such apparel by the team's fans and indirectly by those fans wearing that apparel in public. In 2018, Cristiano Ronaldo signed a contract valued at €99.2 million with the Italian futbol club Juventus – whose kit rights are owned by Adidas – and the club sold 520,000 shirts bearing his name within 24 hours. It is estimated that those purchases translated to a tangible €60 million in sales for Adidas (Hess, 2018) and an intangible amount of value derived from the visibility of the Adidas logo on those shirts worn by fans worldwide. Sponsors can have much more specific strategies in mind as well. Chevrolet - an American automobile manufacturer – invested $560 million in its sponsorship of the English football club, Manchester United, with the stated objective of increasing it brand recognition and sales in Southeast Asia, a region where the club enjoys a strong following (Automotive News, 2014).

While it is clear sponsors place a high value on sport sponsorships, the shareholder value implications of acquiring these sponsorships are an entirely different story as the price paid for the sponsorship relative to the benefits expected determines the sponsorship's impact on firm value. This fact motivates the growing interest in better understanding the firm value implications of sport sponsorships. As noted above, numerous studies have attempted to shed light on this important topic, but they have mostly ignored the fact that the amount paid for a sponsorship is impacted by the nature of the competitive bidding process between the firms vying for the sponsorship. By examining the competition among sponsors for different types of sponsorships, we attempt to shed light on why the firm value implications of sport sponsorships may vary as demonstrated in the prior literature.

Specifically, in this paper we consider the winner's curse theory (Capen, Clapp, and Campbell, 1971) and how it might help explain variation in firm value implications of sport sponsorships. This theory assumes that when entities bid against one another in an auction format, the firm that estimates the intrinsic value of the underlying asset to be the greatest will win the auction, as they are likely to submit the highest bid. In such a scenario, if the intrinsic value of the asset is unknown but similar for the parties involved in the auction (known as a common value auction), then it is increasingly likely that the winning bidder will have overpaid in the auction – known as "the winner's curse". Clearly, a sport sponsorship has an unknown intrinsic value to prospective sponsors at the time of the bidding. More importantly, we will argue that the intrinsic value of a sport sponsorship to the prospective sponsors is similar in some instances (i.e. a common value auction), but not in others. Thus, winner's curse will apply to the bidding process for some types of sponsorships and not others.

While prior studies recognize that the sponsor firm value implications are a net effect of both the benefits received and the costs paid for the sponsorship, they have not considered that the costs may differ based on the competitive nature of the bidding process among prospective sponsors. This is where our study notably differentiates itself from prior studies in this literature (see, e.g., Bouchet et al., 2015; 2017; Clark et al., 2009; Cornwell et al., 2005). The purpose of our study is to examine the bidding process for sport sponsorships and its implications for sponsor firm value in an attempt to deepen our understanding of prior findings in the literature and to motivate new opportunities for future research. In addition, our results have broader appeal as the findings are likely generalizable to non-sport related sponsorships, again motivating more opportunities for future research.

Literature Review and Hypothesis Development

Firm Value Implications of Sport Sponsorships

Sponsorship has been defined as the "provision of assistance, either financial or in-kind, to any activity by a commercial organization for the purpose of achieving commercial objectives" (Meenaghan 1983). Sponsorships between firms and sport properties have become an effective vehicle for mainstream marketing communications and as a means to a sustained competitive advantage (Amis, Pant, & Slack, 1997; Amis, Slack & Berrett, 1999; Cornwell, Weeks, and Roy 2005). This is, at least in part, because sport sponsorships have proven effective at delivering access to targeted audiences coveted by firms. This point is made clear in numerous academic studies and by the greater than 70% allocation of the total sponsorship market to sport sponsorships stated above (Preuss 2004; Quester & Farrelly 2006; Ladousse, 2009).

Prior research has documented sponsorships as co-marketing alliances (Farrelly & Quester, 2005) and noted their strategic importance (Demir & Soderman, 2015). This research has primarily stated that for these alliances to be effective both the sponsoring firm and the sponsored entity must establish a deep commitment that relies on "strategic compatibility, goal convergence, commitment, and satisfaction" (Farrelly & Quester, 2005, p.55). This has led sponsors to establish alliances which take advantage of specific marketing channels. For example, in a case study by Ladousse (2009), the author explored Chinese computer manufacturer Lenovo and its sport sponsorship relationships with both the International Olympic Committee and Formula One Racing. Focusing on how the computer firm gained a competitive advantage over its rivals, Lenovo determined "its unique identity as a 'new world company', with a distinctive, 21st century approach to its business and its customers" allowed it to gain a competitive advantage over rival manufacturers (p.200). These sponsorships allowed Lenovo to highlight its "worldsourcing" business strategy on a global stage.

One marketing channel that can bring increased exposure to sponsors is the sponsorship of high-profile sport entities. An early event study analyzing sponsorship of professional sport arenas and the Olympic Games found a positive impact on sponsors' firm value (Mishra, Bobinski, & Bhabra, 1997). Studies by Mizyazaki and Morgan (2001) and Farrell and Frame (1997) both examined the impact of sponsorships involving the 1996 Summer Olympics in the United States and found opposite results. Mizyazaki and Morgan (2001) attributed sponsorships to an increase in sponsor firm value while Farrell and Frame (1997) found the relation to be negative. Berman, Brooks, and Davidson (2000) found no significant effect on the overall Australian stock market upon the announcement that Sydney would host the 2000 Olympics. Meanwhile, Cornwell et al. (2005) found a positive relation between announcements of "official product" sponsorships associated with the five primary professional sports leagues in the United States (i.e. NFL, NBA, NHL, PGA, and MLB) and sponsor firm value. However, Clark et al. (2009) analyzed title event sponsorship announcements associated with professional tennis tournaments, NASCAR races, and US college football bowl games and found no significant effect on sponsor firm values.

In general, the findings of studies analyzing the impact of sport-related sponsorships on sponsor firm value are mixed. This is no different for more recent studies (Bouchet et al., 2015; 2017). An explanation for these mixed results is currently lacking in the literature and a comparison across these studies is difficult considering the firm value impact of sponsorships involving individual clubs and athletes, title events, and sports leagues may not be comparable as they may constitute sufficiently different types of sponsorships. In this study, we examine the implications of sport sponsorship on firm value from a previously unexamined perspective in an attempt to provide a better understanding of the relationship. We utilize a unique data set that allows us to categorize a sample of sponsorships of the same sport entity type into two distinct groups. More

importantly, we argue these two types of sponsorship may in fact result in differing effects on sponsor firm value, helping to explain why mixed results in the extant literature exist.

Winner's Curse

Capen, Clapp, and Campbell (1971) are credited with originating the winner's curse theory while studying the firm value implications of oil lease auctions on the companies winning the auctions. Prior to the study, there was confusion as to why oil companies generally experienced low equity returns (i.e. the financial markets reacted unfavorably to the acquisition of the oil lease) following acquisitions in oil lease auctions. The authors argued that the lower than expected returns were a rational outcome of the form of bidding process inherent to these oil lease acquisitions. In explaining the rationale for this outcome, the authors point out that all firms bidding for these oil leases should reasonably receive the same value from the asset, constituting a form of auction known as a common value auction (Kagel & Levin, 1986). Under this scenario, since each bidder forms its own estimate of the asset's intrinsic value, the eventual winner of the bidding process is likely to be the bidder with the highest intrinsic value estimate. Given the difficulty in estimating the intrinsic value of the asset, there will be inherent variance in the bidders' estimates. As such, some bidders are likely to overestimate the intrinsic value of the asset, even if firms build in some room for error in their bids. Thus, there exists a reasonable probability that the winner of the bid will overpay for the asset. This adverse selection leads to what is termed the winner's curse, as the winning bidder is likely to be perceived as having overpaid for the asset (Kagel & Levin, 1986).

While the winner's curse concept was developed to better understand outcomes in oil lease auctions, it has been shown to have wide applicability across a number of situations across disciplines. For example, prior studies examine the potential for winner's curse in eBay auctions (Bajari & Hortaçsu, 2003), art auctions (Goetzmann & Spiegel, 1996), and in the baseball free

agency market (Cassing and Douglas, 1980). There have been a number of studies within the finance discipline that study the existence of winner's curse and its impacts on corporate takeovers (Varaiya & Ferris, 1987; Boone & Mulherin, 2008), bank lending (Von Thadden, 2004), and initial public offerings (Keloharju, 1993; Levis, 1990).

Given that different types of sport sponsorships may result in differences in the nature of the bidding process for such sponsorships, the winner's curse theory may help explain why prior studies have found sport sponsorships to be value-enhancing, value-neutral, and value-destroying. While such a finding would help to better understand the value dynamics of sport sponsorships, it would also serve to extend the findings of the literature on winner's curse by applying it to the bidding process for sport sponsorships.

Hypotheses Development

Our analysis focuses on sponsorships between leading professional football (referred to as soccer in the United States) clubs and their sponsors. This is a particularly interesting sport sponsorship market to study as the sponsorship of professional football clubs is one of the highest grossing sport sponsorship markets globally, and it is the highest grossing sport sponsorship market in Europe (Richter, 2020). Specifically, the sport sponsorships we analyze include the sponsoring of club kits (the brand of the shirts, shorts, and socks worn by the club) and corporate logo sponsorships on the jersey itself (typically a large logo on the players' chests). We will refer to the former as "kit sponsorships" and the latter as "shirt sponsorships". As will be explained below, we argue that kit sponsorships represent a common value auction and are subject to winner's curse. On the other hand, shirt sponsorships do not represent a common value auction and are, therefore, not subject to winner's curse. Given the distinction between these two types of sponsorship, one should expect these sponsorships to have different firm value implications for

the sponsoring entity. We believe this key distinction (the form of competition inherent to the bidding for the sponsorship) may be an important factor in determining the firm value implications of the sponsorship that has been previously ignored in the literature. Also of importance is the fact that these distinct sponsorships involve the same sport entity; thus, unlike in the prior literature, the sample allows for a like-for-like comparison of the firm value implications of kit and shirt sponsorships.

Consider companies like Nike and Adidas that compete fiercely for the privilege of sponsoring clubs' kits. The auction for this type of sponsorship represents a common value auction. First, consider that the value of the sponsorship to any sponsor would be unknown at the time of the auction. Second, the value of the sponsorship to prospective sponsors would be similar as the increased visibility and apparel sales generated from the sponsorship is largely independent of the sponsor itself. That is, whether Nike or Adidas is the kit sponsor, each prospective sponsor can expect similar visibility enhancement from the kit sponsorship. Likewise, apparel sales are unlikely to be different for one prospective sponsor relative to another as fans are buying the apparel because of their fandom for the sport entity as opposed to their desire to own Nike or Adidas apparel.

It is also important to note that the only prospective sponsors for these sponsorships are those companies that compete in the sports apparel business. These prospective sponsors are competing for limited, valuable marketing space as there is a limited market for kit sponsorships of elite professional football clubs. Thus, this sponsorship marketing space represents a zero-sum game with the apparel company securing the sponsorship securing a direct competitive advantage over its peers (see, e.g., Bouchet et al., 2017). Given the fierce nature of the bidding process in

these common value auctions, one can reasonably conclude that these sponsorships will be prone to winner's curse.

On the other hand, shirt sponsorships do not constitute a common value auction. To understand this, consider that the sponsors in this marketing space are not typically involved in the sports marketplace. The corporate sponsor is simply leveraging its association with a reputable brand to gain brand awareness for itself. Thus, the value one prospective sponsor places on this sponsorship opportunity is mostly independent from the value assigned by other prospective sponsors as their strategic objectives are likely to be mutually exclusive.

Take the Chevrolet example once again. Chevrolet sponsored an English football club with the specific strategic objective of penetrating the Southeast Asia market by aligning its brand with that of Manchester United, a football club that enjoys a strong following in this region (Automotive News, 2014). The value of this specific sponsorship opportunity was presumably highest for Chevrolet as it won the bid, and that value was directly tied to its efforts to increase brand awareness and sales in Southeast Asia. From this example, we see that the value Chevrolet envisioned from this sponsorship opportunity is quite specific and largely independent of other prospective sponsors. Thus, while it is still true that the highest bid will win a corporate logo sponsorship, the highest bid in this scenario is not necessarily going to be higher than the intrinsic value of the sponsorship to that particular sponsor. As shirt sponsorships do not constitute a common value auction, we can reasonably conclude that the bidding process will be less prone to winner's curse than that of kit sponsorships.

We utilize the event study methodology to examine the implications of kit sponsorships and shirt sponsorships. This methodology utilizes the reaction of the financial equity market to the announcement of an event to directly measure whether the market views the impact on the firm's

value as positive, negative, or neutral. Having an established method for evaluating the sponsor-firm value implications of kit and shirt sponsorships, we now state our formal hypotheses.

We have argued that the bidding process for kit sponsorships constitutes a common value auction and is prone to winner's curse. If accurate, the winning bidders of kit sponsorships will be viewed by the market as having overpaid for the sponsorship, on average. Thus, we propose the following hypothesis:

H1: The cumulative average abnormal return (CAAR) for kit sponsorship announcements will be negative.

We have also argued that shirt sponsorships do not constitute common value auctions and are not prone to winner's curse. This implies that there is no reason to suspect corporate sponsors overpay (or underpay) for shirt sponsorships. Thus, we propose the following hypothesis:

H2: The cumulative average abnormal return (CAAR) for shirt sponsorship announcements will be zero.

From H1 and H2, we can infer that kit sponsorships will be viewed less favorably by the market relative to shirt sponsorships because of the existence of winner's curse in the bidding process for kit sponsorships but not for shirt sponsorships. Thus, we propose the following hypothesis:

H3: The difference in the cumulative average abnormal return (CAAR) for kit sponsorship announcements and shirt sponsorship announcements will be negative.

Due to the arguably far greater value proposition of sponsoring the most high-profile clubs, we posit these sponsorship opportunities may lead to a more competitive and frenzied bidding process for a common value auction. As such, the variance of prospective sponsors' intrinsic value estimates of these sponsorships may be greater, resulting in a higher likelihood of overpaying (and possibly overpaying by more). We propose the following hypothesis as an extension of H3:

H4: The difference in the CAAR for kit sponsorship announcements and shirt sponsorship announcements will be negative and greater in magnitude when the sponsorship entails clubs from elite leagues relative to clubs from non-elite leagues.

Data Collection and Sample Construction

To identify our kit and shirt sponsorship samples, we searched online newswires to identify instances where publicly traded firms had entered in to these sponsorships with clubs. As the event date is of utmost importance to the accuracy of an event study, significant attention was paid to capturing the first public announcement of the sponsorship agreement. LexisNexis was used to simultaneously search thousands of publications to give us the highest probability of capturing the earliest details of an impending sponsorship agreement. Web searches were then used to verify no earlier date of an announcement could be found.

It is important to note that our sample population consists of two separate but distinct groups of football clubs. The first data set was collected from men's national football clubs that played or qualified for the 2014 Federation Internationale of Association Football (FIFA) World Cup. FIFA serves as the international governing body of association football and hosts the men's and women's World Cup tournament as well as numerous other tournaments around the world. Our second data set was collected from football clubs in FIFA's three strongest confederations as determined by the football governing body, the Union of European Football Associations (UEFA), Confederation of South American (CONMEBOL), and Confederation of North, Central America and Caribbean Association Football (CONCACAF). Clubs in these three confederations have won all of the major international football competitions and represent the most valuable clubs in the world (Forbes, 2014).

We were able to identify 388 such events with kit sponsorships representing 213 observations and shirt sponsorships representing 175 observations. It is important to note that this is a sizable sample compared to prior studies on the firm value implications of sport sponsorships. As an example, Cornwell et al.'s (2005) paper analyzing "official product" sponsorships used 53 sponsors and Clark et al.'s (2009) paper analyzed 114 title sponsorship announcements. Therefore, while breaking our sample into sub-groups based on kit and shirt sponsorships reduces our sample size, it still results in sub-samples larger in size than the full sample of many prior studies. Specific data collected from the news releases consists of club name, league, sponsoring firm, stock exchange, ticker symbol, country of origin for both the club and firm, and the date of announcement.

Variables of interest to the analysis and descriptive statistics are provided in Table 1. *EliteLeague* is a dummy variable equal to one if the football club being sponsored is a member of the English Premier League, Spanish La Liga, German Bundesliga, or Italian Serie A[5]. Just over half of the observations in our sample feature a football club from one of the four elite leagues. The average sponsoring firm in our sample has a market capitalization of $165.26 billion. However, large firms such as Microsoft and LG result in a large standard deviation in firm size. The variable *RelativeGDP* represents the log of one plus the ratio of the per capita GDP for the sponsoring company's country to the per capita GDP of the football club's country. This variable captures any impact resulting from the relative size of the markets in which the two parties are located.

PLACE TABLE 1 ABOUT HERE

Methodology

[5] For sake of robustness, results have also been calculated including the French Ligue 1 as a fifth league in the definition of *EliteLeague*. The results were materially unchanged.

The event study methodology has been the preferred method for studying the impact of significant events on firm value since its introduction by Fama et al. (1969). It continues to be used across business disciplines including marketing (Kim and McAlister, 2011), management (Bergh and Gibbons, 2011), finance (Larcker, Ormazabal, and Taylor, 2011; Masulis and Mobbs, 2011), and accounting (Badertscher, Hribar, and Jenkins, 2011; Horton and Serafeim, 2010). There is also a strong precedent for using this methodology in the literature studying the effect of sport sponsorships on firm value (Bouchet et al., 2015; Clark et al., 2009; Cornwell et al., 2005).

A popular event study method is the market model, including its advancements. First, given the general return in the stock market on the day of the event (i.e. a measure of macroeconomic news), we must estimate what the return on the firm's stock would have been absent the event. Next, an abnormal return on the stock can be calculated as the difference between the realized return on the stock and the estimated expected return assuming the event had not occurred. Thus, the abnormal return attempts to capture the change in firm value attributable to the event.

Within the event study framework, daily abnormal returns are calculated within an event window around the event for which the study is attempting to identify the stock price impact. In this study the event date (i.e. $t = 0$) is the date of the formal announcement that the sponsoring firm and the club have entered into a sponsorship agreement. By measuring abnormal returns over an event window rather than simply on the event date, we can account for the potential leakage of information leading up to the formal announcement, as well as the potential that the price by the end of day $t = 0$ does not fully reflect the impact of the event (Mackinlay, 1997).

The typical approach to estimating the sensitivity of a firm's returns to the market index is to run a time-series regression of the firm's stock returns on the market index returns. Given that our dataset includes firms with primary listings in multiple countries, the broad market index of

the country where the sponsoring firm is listed is used as the benchmark market index for that sample observation. The regression uses daily return data starting approximately one year prior to the event (t = -252) and ending approximately two months prior to the event (t = -46) to safely avoid any contamination from the event window on the estimated model parameters. The market model is estimated as follows:

$$R_{i,t} = \alpha_i + \beta_i * R_{m,t} + \varepsilon_{i,t} \quad (1),$$

where $R_{i,t}$ is the return on stock *i* on day *t* and $R_{m,t}$ is the return on the market index on day *t*.

An expected return for day *t* during the event window can then be calculated by adding the intercept from the market model to the product of the beta coefficient from the market model and the return on the market index on day *t*. The abnormal return ($AR_{i,t}$) of stock *i* on day *t* during the event window is then calculated as follows:

$$AR_{i,t} = R_{i,t} - (\alpha_i + \beta_i * R_{m,t}) \quad (2),$$

where $R_{i,t}$ is the return on stock *i* on day *t* during the event window and $R_{m,t}$ is the return on the market index on day *t* during the event window.

It is important to note that we employ the commonly used Scholes-Williams market model (Scholes & Williams, 1977), an advancement on the simple market model. An advantage of this model is that it accounts for non-synchronous trading. This is important to our study as our sample contains stocks across multiple exchanges, with the inclusion of some relatively small firms that may be thinly traded. The Scholes-Williams market model has also been commonly accepted for use in sport sponsorship event studies in the prior literature (Clark et al., 2009; 2013; Cornwell et al., 2005; Fizel and McNeil, 2015; Pruitt et al., 2004).

Similar to the simple market model, the Scholes-Williams method first estimates parameters during a pre-event window estimation period. However, in addition to the beta

coefficient estimated in the simple market model, the Scholes-Williams method calculates a lead (utilizing market returns one day ahead of the stock's return in the estimation window) and a lag beta coefficient (utilizing the market returns one day prior to the stock's returns in the estimation window). The beta for the slope coefficient for stock *i* is then calculated as:

$$\hat{\beta}_i = \frac{\hat{\beta}_i^- + \hat{\beta}_i + \hat{\beta}_i^+}{1+2\hat{\rho}_m} \quad (3)$$

where $\hat{\rho}_m$ is the autocorrelation of the market return over the estimation window. The beta calculated using the above equation replaces the beta from the simple market model. The alpha for the Scholes-Williams method is also calculated differently:

$$\hat{\alpha}_i = \bar{R}_i - \hat{\beta}_i * \bar{R}_m \quad (4)$$

where $\bar{R}_i$ is the mean stock return over the estimation period and $\bar{R}_m$ is the mean market return over the estimation period. As with the simple market model, the Scholes-Williams beta and alpha are used to calculate a firm's expected return on day *t* during the event window given the observed market return on day *t*. The firm's daily abnormal return is then calculated as the difference between the observed return and the expected return calculated by the Scholes-Williams market model:

$$\widehat{AR}_{i,t} = R_{i,t} - (\hat{\alpha}_i + \hat{\beta}_i * R_{m,t}) \quad (5).$$

Once the abnormal return for each day in the event window has been calculated, the cumulative abnormal return for each firm in the sample can be calculated. The cumulative abnormal return captures the market's consensus estimate of the economic impact of the event on the firm over the event window. It is calculated as follows:

$$CAR_i = \sum_{t=1}^{T} \widehat{AR}_{i,t} \quad (6)$$

where CAR_i is the cumulative abnormal return for firm *i* over the event window and $\widehat{AR}_{i,t}$ is the Scholes-Williams market model abnormal return for stock *i* on day *t* during the event window. The

cumulative abnormal returns are then averaged across all firms in the sample to generate the cumulative average abnormal return (CAAR) in the sample:

$$CAAR = \frac{1}{N}\sum_{i=1}^{N} CAR_i \quad (7).$$

Finally, throughout this study we present four separate event windows; however, we emphasize the event window spanning the day prior to the event date (i.e. t = -1) through the day following the event date (i.e. t = 1). By using t = -1 to t = 1, we capture the impact immediately surrounding the announcement of the event. This helps to minimize the potential impact on share value of other corporate announcements that may take place around the time of the sponsorship announcement. While it increases the likelihood of contaminating the announcement effect of interest with confounding corporate (or even macroeconomic) events, a longer event window is also utilized in the prior literature to capture potential leakage (i.e. rumors of the sponsorship deal ahead of the announcement) or a delayed reaction. For completeness, we present three additional event windows in the following analysis as well.

Empirical Results

Table 2 presents CAARs for four event windows for the full sample of sponsorship announcements (i.e. it does not differentiate between kit and shirt sponsorships). The CAAR across each window is negative, with the (-3, 3) window achieving statistical significance at the 95% confidence level. A lack of statistical significance for the other event windows suggest the sponsorships, on average, are viewed by the market as being fairly priced according to these windows (i.e. the abnormal return, on average, is equal to zero). In other words, sponsors are acquiring these sponsorships at market clearing prices (similar to findings by Clark et al., 2009). The Wilcoxon Sign Rank Test can be useful when making inferences from means of relatively small sample sizes as it is not as prone to large standard errors that can result from small samples.

These tests in Table 2 show that there are statistically significantly more negative than positive CARs for the windows (-2, 2), (-3, 3), and (-5, 5). Thus, the results in Table 2 provide some evidence that, on average, market reactions to kit and shirt sponsorships are negative.

PLACE TABLE 2 ABOUT HERE

The results in Table 2 ignore the potentially important differences between kit sponsorships and shirt sponsorships previously discussed. If the market views these sponsorships to have differing effects on firm value, then the aggregation of the results will hide this important characteristic of the data. Table 3 separates the sample into kit and shirt sponsorships. Recall, from H1, that if the bidding process for kit sponsorships constitutes a common value auction and is prone to winner's curse, the winning bidders are likely to be viewed by the market as having overpaid for these sponsorships, on average. Thus, if H1 holds, then we expect the CAAR for kit sponsorships to be negative. The results of Table 3 demonstrate that the CAARs are negative and economically significant for kit sponsorships across all event windows, ranging from -0.73% to -0.35%. Despite the smaller sample size relative to the full sample, the negative CAARs over the event windows (-1, 1) and (-3, 3) are also statistically significant at the 95% confidence level. According to the Wilcoxon Sign Rank Tests, there are significantly more negative CARs than positive in the kit sponsorship sample. The test statistics for these tests suggest statistical significance at the 95% or 99% level for all event windows. Thus, in six of the eight tests in Table 3 for kit sponsorships, statistical inference suggests the market, on average, reacts negatively to these types of sport sponsorships. These findings provide evidence to support H1.

PLACE TABLE 3 ABOUT HERE

Recall that we argued the bidding process for shirt sponsorships does not constitute a common value auction and is, therefore, not prone to winner's curse. Looking at the shirt

sponsorship sample in Table 3, we see that the CAARs across the event windows range from 0.31% to -0.12% and none are statistically significant. The one CAAR that is economically significant also happens to be positive, rather than negative. Finally, none of the Wilcoxon Sign Rank Tests show statistical significance. These findings provide no evidence to suggest the bidding process for shirt sponsorships is impacted by winner's curse in the way that kit sponsorships appear to be. The results in Table 3 for shirt sponsorships support H2.

We can infer from our first two hypotheses that the CAAR for kit sponsorships might reasonably be significantly lower than that for shirt sponsorships, motivating H3. Comparing the means of the two subsamples, the difference in CAARs between kit sponsorships and shirt sponsorships are consistently negative. The mean difference for the event window immediately surrounding (-1, 1) the sponsorship announcements is statistically and economically significant at -0.76%. While the differences in means for the other three event windows are not statistically significant, the differences are economically significant in each case, ranging from -0.26% to -0.61%. However, without statistically reliable estimates of these means, we cannot make any inferences based on these event windows. As H3 relies on mean difference tests alone for statistical inference, the relatively small sample sizes (and resulting large standard errors) make it difficult to argue the evidence strongly supports H3. But when taking the strong support for H1 and H2 into account, along with the evidence of economically significant differences in means, there is arguably some support for the finding that kit and shirt sponsorships are valued differently by the market. Importantly, the results strongly support the argument that the market reaction to kit sponsorships is consistent with the notion that these sponsorships are common value auctions and suffer from the resulting winner's curse. Thus, this new finding in the context of sport sponsorships compliments and extends the literatures on both the value of sport sponsorships and winner's curse.

Table 4 further breaks the sample down by focusing not only on kit and shirt sponsorships separately, but also by examining sponsorships in the most influential professional leagues. The reason we single out the most influential leagues is that the direct pecuniary benefits from jersey sales will be more significant for these clubs as will be the indirect benefits of greater brand exposure. From a common value auction (i.e. kit sponsorship) perspective, the competition for these deals will presumably be the greatest and may cause greater variance in the bids from prospective sponsors. This would increase the likelihood of prospective sponsors overvaluing the intrinsic value of these deals, and possibly overvaluing the deals by a greater magnitude. The same cannot necessarily be argued for non-common value auctions (i.e. shirt sponsorships) as the value is specific to each prospective sponsor. Thus, H4 hypothesizes that the difference in the market reaction to kit and shirt sponsorships may be more extreme for sponsorships of elite clubs than the difference in the unconditional samples.

PLACE TABLE 4 ABOUT HERE

Similar to Table 3, Table 4 demonstrates that shirt sponsorships are generally met with a negative and economically significant market reaction. Furthermore, the coefficients are consistently more negative across all event windows for shirt sponsorships when focusing on the most valuable sponsorships (those in the top leagues). All event windows imply losses in market value of at least 0.67%, with the return being close to -1% for the (-3, 3) window. The (-2, 2) and (3, 3) windows are statistically significant at the 95% confidence level and the (-1, 1) window is statistically significant at the 99% confidence level. The Wilcoxon Sign Rank Tests demonstrate that the observations are significantly skewed towards negative CARs with greater than 95% confidence in all windows. On the other hand, abnormal returns around announcements of shirt sponsorships with clubs from the most recognizable leagues are indeed received in a more positive

manner by shareholders than kit sponsorships. In fact, despite the even smaller size of this subsample, the CAAR from the (-1, 1) event window is statistically significant and, at 0.60%, it is also economically significant. However, the means of the other three event windows are indistinguishable from zero, suggesting these deals are secured at market clearing prices. The Wilcoxon Sign Rank Test for each event window is also statistically insignificant.

Furthermore, the differences in means across the two subsamples are even more economically significant than in Table 3, as H4 predicts. For three of the event windows, the mean market reaction to kit sponsorships is over 1% lower compared to shirt sponsorships, with the mean difference being statistically significant at the 99% confidence level for the window (-1, 1) and at the 90% confidence level for the (-2, 2) and (-3, 3) windows. The final event window, (-5, 5), is also just shy of the 90% confidence threshold. These results provide further evidence of the important differences in the firm value implications between kit and shirt sponsorships and provide strong evidence to support H4. Additionally, it is important to note that these results provide support for H3 as well. The market reactions to kit sponsorships are indeed consistent with what would be expected from a common value auction while the reactions to shirt sponsorships are consistent with what would be expected from non-common value auctions. Thus, our findings shed light on the variance in the findings of prior studies. In analyzing the firm value implications of sport sponsorships in future studies, one must consider whether or not the auctions for the sponsorships studied represent common value auctions.

Table 5 provides the results of regression analyses controlling for sponsorship type (i.e. kit versus shirt sponsorships), as well as for sponsorships in the most influential professional leagues (*EliteLeague*) and the relative Gross Domestic Product (GDP) of the two countries in which the company and club are headquartered (*RelativeGDP*). Column (1) simply revisits the findings from

Table 3 that shareholders view kit sponsorships less favorably than shirt sponsorships. The coefficient on the *Kit Sponsors* dummy variable is the difference in means between the two subsamples (-0.76%) while the constant represents the CAAR for shirt sponsorships (0.31%). The impact is, again, statistically significant at the 95% confidence level. Column (2) adds the *EliteLeague* dummy variable. The coefficient on *EliteLeague* captures the impact of *EliteLeague* in the overall sample, as opposed to capturing its effect on kit sponsorships relative to shirt sponsorships. Not surprisingly then, its coefficient is not statistically significant. We will revisit the impact of *EliteLeague* in Table 6. First, from Column (3) in Table 5, the coefficient on *RelativeGDP* is also not statistically significant. The finding that shareholders view kit sponsorships less favorably than shirt sponsorships maintains significance at the 95% confidence level across all three regressions.

PLACE TABLE 5 ABOUT HERE

Finally, Table 6 presents the results of regressions ran on the kit and shirt sponsorship subsamples involving teams in the top four leagues to isolate the impact of *EliteLeague*. It appears that the impacts of the *EliteLeague* and *RelativeGDP* variables are opposite depending on the type of sponsorship, providing further evidence of the need to distinguish between the types of sponsorship when evaluating them. Sponsorships of clubs in the most prominent leagues are viewed positively for shirt sponsorships, but negatively for kit sponsorships. The negative impact for kit sponsorships is consistent with these sponsorships being valued in a manner consistent with the bidding process taking the form of a common value auction. Finally, in the kit sponsorship subsample, the impact of *RelativeGDP* is negative and, this time, statistically significant. This implies that when the sponsor of a kit is headquartered in a country that is large relative to the country the club is located in, the returns to the sponsorships are less favorable.

PLACE TABLE 6 ABOUT HERE

Discussion

The results of our empirical analysis are in fact consistent with our predictions that the firm value implications of kit and shirt sponsorships are different because of the important difference in the bidding process for each type of sponsorship. Specifically, kit sponsorships are common value auctions and are expected to be prone to winner's curse while shirt sponsorships are not. Our findings provide strong evidence to support this view. Kit sponsorships are perceived by the market as being value-decreasing while shirt sponsorships are perceived by the market as being mostly value-neutral. We also provide evidence that kit sponsorships are perceived to create significantly less value than shirt sponsorships, especially when analyzing sponsorships involving elite clubs.

The primary motivation of this study was to provide some clarity on why studies in the prior literature have found sport sponsorships to be value decreasing, value enhancing, and value-neutral. For instance, we previously mentioned that Mishra, Bobinski, and Bhabra (1997) and Mizyazaki and Morgan (2001) found corporate sponsorships of the Olympic Games to be value enhancing while Farrell and Frame (1997) found evidence that they are value destroying. As corporate sponsorships of the Olympic Games would constitute non-common value auctions (similar to shirt sponsorships in our sample), we would predict results that more align with the findings of Mishra, Bobinski, and Bhabra (1997) and Mizyazaki and Morgan (2001). We also mentioned the official product sponsorships associated with the five primary professional sports leagues in the United States studied by Cornwell et al. (2005) and the title event sponsorship announcements associated with professional tennis tournaments, NASCAR races, and US college football bowl games studied by Clark et al. (2009). These studies found the sponsorships to be value enhancing and value-neutral, respectively. Despite the difference in findings, these

sponsorships involve non-common value auctions and the results are consistent with what one might predict.

One point we would like to make is that for a sufficiently large sample of non-common value auctions in a competitive market, the expectation might reasonably be that the sponsorships are acquired at market clearing prices (i.e. the sponsorships are value neutral), on average. In other words, it is not clear why the winning bidders in a sample would be able to outbid other prospective sponsors while also consistently undervaluing the intrinsic value of the sponsorship to the firm. Is it possible bidders in non-common value auctions recognize the bidding dynamics and, thus, are more conservative with their estimates and bids? We suppose this is possible. For similar reasons, it is not clear why some (albeit much fewer) studies of non-common value auctions in the sport sponsorship literature have found the firm value implications to be negative. In fact, this scenario is arguably more difficult to understand as non-common value auctions are clearly not prone to winner's curse to the same degree as common value auctions.

One explanation we put forth here is that the competitive nature of the bidding process may shed some light on this line of inquiry. If the competitive bidding process for particular types of non-common value auctions is quite intense, then the prospective bidders may be more aggressive in their valuing of the sponsorship leading to bids being higher, on average. This could result in a negative CAAR for these sponsorships. As competition for sponsorships of the Olympic Games might constitute this type of competition, this may explain the variance in results for the event studies referenced above. On the other hand, if competition in the bidding process is relatively weak, then prospective bidders may be more conservative in their intrinsic values estimates, leading to sponsorships being acquired at more favorable prices. This may very well constitute a rich area for future research.

Notably, while studies analyzing the firm value implications of common value auctions are prevalent in other disciplines, it is not prevalent in the sport sponsorship literature. This may not be surprising as kit sponsorships of football clubs likely represent the largest market for such sponsorships at the current time. One reason for this is the immense global appeal of the sport. Another reason is that some professional sports leagues sell the "official uniform" rights to a single sponsor (e.g. the major professional sports leagues in the United States). This landscape is changing however. For instance, the National Basketball Association was the first professional sports league in the United States to begin selling corporate logo sponsorships on team jerseys, beginning the practice in 2017 (Garcia, 2016). League executives stated the difficulty in continuing to ignore this substantial revenue source. It is likely only a matter of time before other professional sports leagues follow suit.

The same can be imagined for official uniform sponsorships. Teams will find it increasingly difficult to continue to ignore how valuable negotiating their own deals with apparel companies can be. It may only be a matter of time before team executives pressure leagues to permit this type of sponsorship. For example, one might imagine that a globally valuable brand like the New York Yankees of Major League Baseball in the United States could negotiate terms of an official jersey sponsorship that is more lucrative than the revenue the organization must share with other teams through the league's single sponsorship. NCAA Division I football programs can already strike deals with apparel companies of their choosing for uniform sponsorship rights. Of course, there are also other contexts in which common value sponsorships come into play with sport sponsorships. One example would be official tire sponsorships of racing cars in NASCAR. As common value auction sport sponsorships become more prevalent, there will be a growing opportunity for future research in this area.

Managerial Implications

In addition to academic relevance, this paper contains important managerial information for both club personnel and firm executives that engage in sport sponsorships. While there has been a plethora of studies regarding sport sponsorships, this paper explores categorizing sponsorships based on the nature of the bidding process for different types of sport sponsorships. On one hand, corporations such as Nike and Adidas continue to compete fiercely for sponsorships with professional football clubs despite the stock market's response to these deals being negative, on average. However, when considering the market for these sponsorships is particularly susceptible to a winner's curse, a valid theoretical explanation for this otherwise puzzling empirical finding becomes clear. While corporations attempting to acquire sport sponsorships through common value auctions should certainly attempt to get the best price possible, it is important to understand overpayment in the eyes of shareholders may be inevitable, especially when attempting to acquire the most highly coveted sponsorships. In the case of kit sponsorships in this study, the zero-sum game nature of this marketing channel would result in substantial value capture for some firms if others simply relent and exit this sponsorship space. Thus, continuing to participate in these auctions would seem to be rational.

On the other hand, corporate sponsors looking to expand their brand's presence both locally and internationally should strongly consider sport sponsorships, such as corporate logo sponsorships in professional football leagues. Importantly, as the value proposition of these deals is much more specific to the sponsor itself compared to kit sponsorships, a winner's curse is much less of an issue allowing sponsors to potentially capture greater value from these deals.

With over 70% of total marketing sponsorship dollars flowing to sport sponsorships, firms have spoken clearly that the value proposition from sponsoring sport entities, sporting events, and

professional athletes is substantial. And there is no reason to believe this trend will decline in the future. Nonetheless, it is important from an academic and industry perspective to better understand the firm value implications of such sponsorships. Our study contributes to this understanding by being the first to consider the nature of the bidding process for sport sponsorships and applying the findings from the winner's curse literature to the literature on sport sponsorships. Our findings also open up rich areas for future research in this area.

Recommendations for Future Research and Limitations

As detailed earlier, the dichotomy of sport sponsorships described here and our results shed light on somewhat mixed results in the prior literature examining the value of sport sponsorships to sponsors. Sponsorships of the Olympic Games are numerous and the bidding process for these sponsorships would represent non-common value auctions, as would official product and title event sponsorships in major professional sports leagues. Hence, the general finding of either a positive or neutral impact on sponsor value is consistent with our findings for shirt sponsorships. However, as stated before, there is still room for future research in this area. While finding positive impacts of sport sponsorships that are acquired through non-common value auctions is not necessarily inconsistent with expectations, it would imply that firms are systematically outbidding other prospective bidders while also undervaluing the intrinsic value of the sponsorship to the firms. It is not abundantly clear why this would be the case. A more nuanced analysis of the competitive nature of the bidding process for such sponsorships may shed further light on this issue and, thus, opens up a potentially valuable area for future research.

Studies analyzing sponsorships that would be considered common value auctions are not as common in sport sponsorship literature. However, this provides a fertile area of exploration for future studies in this literature. For instance, extreme competition between major athletic shoe

brands for endorsement deals with star-level NBA basketball players would be a prime example of common value auctions. Indeed, apparel brand endorsement deals with individual athletes are becoming increasingly common. More closely tied to our sample, NCAA Division I athletic programs are now permitted to negotiate sponsorship deals with apparel companies in the same way professional football clubs negotiate kit deals. Analysis of these or similar sponsorships could provide further evidence to support the important distinctions we draw between sport sponsorships involving common and non-common value auctions.

As with prior studies examining the shareholder value implications of sport sponsorship, the size of our sample limits the likelihood of strong statistical significance. While our sample is substantially larger than those in many previous studies, this limitation still holds. Furthermore, the necessity to divide our sample into kit and shirt sponsorships to test our hypotheses results in subsamples that exacerbate this concern. An additional limitation of our study is the focus on one sport. While this allows for a clean comparison between common and non-common value auctions for sport sponsorships, it does not provide direct evidence that the results are generalizable. Our results are also found in the context of highly visible, highly valuable global sport brands as we focus on sponsorships involving the preeminent global sport – football. This suggests the need for future research in the context of other sport-related sponsorships, allowing further investigation of whether our findings are generalizable.

Conclusion

The results of this study suggest that shareholders differentiate between sport sponsorships when assessing their firm value implications. This differentiation occurs because the bidding process for some sport sponsorships represents a common value auction while others do not. As common value auctions are prone to winner's curse, the winning bidders of such auctions can

expect a negative impact on firm value, on average. Winner's curse does not apply to non-common value auctions, so the bidding process for sponsorships that take this form of auction will have a far less likelihood of resulting in negative firm value impacts. Thus, the important distinction between these types of sport sponsorships may help to explain the variance in the findings on the firm value implications of sport sponsorships in the extant literature.

The sport sponsorships we analyze include the sponsoring of leading professional football (referred to more commonly as soccer in the United States) clubs. Specifically, the sponsorships include the sponsoring of club kits (the brand of the shirts, shorts, and socks worn by the club) and corporate logo sponsorships on the jerseys of these same clubs (typically a large logo on the players' chests). We argue that kit sponsorships represent a common value auction and are subject to winner's curse. On the other hand, shirt sponsorships do not represent a common value auction and are, therefore, not subject to winner's curse. Thus, given the distinction between these two types of sponsorship, one should expect these sponsorships to have different firm value implications for the sponsoring entity.

Our results indeed suggest that the market values kit and shirt sponsorships in a way that is consistent with the dynamics of common and non-common value auctions. Kit sponsorships are found to be met with negative reactions by sponsoring firms' shareholders through negative sponsor stock returns, on average, around the public announcement of the sponsorship. However, we find that the market reaction to shirt sponsorships is neutral (sponsor stock returns around the announcement date of the sponsorship are zero, on average), suggesting these sponsorships are acquired at market clearing prices. We also provide evidence that the average sponsor stock returns around the announcements of kit sponsorship deals are economically and statistically significantly

lower than that for shirt sponsorships, especially for deals involving clubs in the top four professional football leagues globally.

While these results are specific to our sample, the broader academic literature has illustrated the impact common value auctions have on the firm value implications of the winning bidders in many other contexts. Thus, it seems reasonable that our results would generalize to other sport-related sponsorships. Nonetheless, as our study analyzes sponsorships specific to the preeminent global professional sport, football, differentiation between types of sport sponsorships in other sport-related contexts provides a fertile ground for additional research to shed further light on whether the results here are generalizable. Our study is the first to make the important distinction between common and non-common value auctions in the context of sport sponsorships to show their impact on the firm value implications of these sponsorships. We encourage future research to explore the topics presented and examined here in different contexts to expand our knowledge on the topic.

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Table 1

Summary Statistics

Variable	N	Mean	St. Dev.	Median	25%	75%	Percent
EliteLeague	388						54.64%
KitSponsor	388						54.90%
FirmSize	128	$165,262	$1,194,547	$21,315	$4,165	$48,113	
RelativeGDP	384	0.95	0.56	0.74	0.69	0.86	

Table 2

Event Study Results – Full Sample

Event Interval	Coefficient T-Statistics		# Pos : # Neg % Positive	
-1 to 1	-0.107% (-0.68)		177/211 45.62%	
-2 to 2	-0.232% (-1.17)		168/220 43.30%	**
-3 to 3	-0.456% (-1.97)	**	161/227 41.49%	***
- 5 to 5	-0.162% (-0.58)		165/223 42.53%	*
N	388			

*, **, and *** denote significance at the 10%, 5%, and 1% level respectively

Table 3

Event Study Results – Kit vs Shirt Sponsorships

Event Interval	Kit Sponsorships		Shirt Sponsorships		Difference in Means
	Coefficient T-Statistics	# Pos/# Neg % Positive	Coefficient T-Statistics	# Pos/# Neg % Positive	
-1 to 1	-0.450% ** (-2.18)	86/127 *** 40.38%	0.310% (1.288)	91/84 52.00%	-0.760% ** (-2.41)
-2 to 2	-0.347% (-1.30)	90/123 ** 42.25%	-0.091% (-0.31)	78/97 45.14%	-0.256% (-0.64)
-3 to 3	-0.731% ** (-2.37)	82/131 *** 38.50%	-0.121% (-0.35)	79/96 45.14%	-0.610% (-1.31)
- 5 to 5	-0.349% (-0.98)	86/127 ** 40.38%	0.066% (0.15)	79/96 45.14%	-0.415% (-0.74)
N	213		175		

*, **, and *** denote significance at the 10%, 5%, and 1% level respectively

Table 4

Event Study Results – Kit vs Shirt Sponsorships for Clubs in Elite Leagues

Event Interval	Kit Sponsorships – Elite League Only		Shirt Sponsorships – Elite League Only		Difference in Means
	Coefficient T-Statistics	# Pos/# Neg % Positive	Coefficient T-Statistics	# Pos/# Neg % Positive	
-1 to 1	-0.719% ***	43/73 ***	0.600% *	50/46	-1.320% ***
	(-2.91)	37.07%	(1.83)	52.08%	(-3.27)
-2 to 2	-0.670% **	43/73 ***	0.202%	43/53	-0.872% *
	(-2.14)	37.07%	(0.47)	44.79%	(-1.67)
-3 to 3	-0.995% **	43/73 ***	0.159%	42/54	-1.154% *
	(-2.55)	37.07%	(0.32)	43.75%	(-1.84)
- 5 to 5	-0.723%	46/70 **	0.506%	43/53	-1.229%
	(-1.48)	39.66%	(0.83)	44.79%	(-1.59)
N	116		96		

*, **, and *** denote significance at the 10%, 5%, and 1% level respectively

Table 5

Regression Analysis - CAAR of Event Window (-1, 1)

	(1)	(2)	(3)
KitSponsor	-0.76% **	-0.76% **	-0.79% **
	(-2.41)	(-2.41)	(-2.45)
EliteLeague		-0.03%	-0.06%
		(-0.11)	(-0.16)
RelativeGDP			-0.24%
			(-0.75)
Constant	0.31%	0.33%	0.54%
	(1.33)	(1.13)	(1.19)
R^2	0.0148	0.0148	0.0202
Sample Size (N)	388	388	384

*, **, and *** denote significance at the 10%, 5%, and 1% level respectively

Table 6

Regression Analysis – CAAR of Event Study Window (-1, 1) – Kit and Shirt Sponsorships

	Kit Sponsorships		Shirt Sponsorships	
	(1)	(2)	(3)	(4)
EliteLeague	-0.59%	-0.88% *	0.64%	0.91% *
	(-1.43)	(-1.91)	(1.33)	(1.71)
RelativeGDP		-0.74% **		0.75%
		(-2.04)		(1.19)
Constant	-0.13%	0.73%	-0.04%	-0.81%
	(-0.42)	(1.25)	(-0.12)	(-1.10)
R^2	0.0096	0.025	0.0102	0.0183
Sample Size (N)	213	209	175	175

*, **, and *** denote significance at the 10%, 5%, and 1% level respectively