THE IMPACT OF THE ANNOUNCEMENT OF ATHLETE ENDORSEMENTS ON FIRM VALUE- AN EVENT STUDY ANALYSIS

by

RAYED MONEER ALOTAIBI

A dissertation submitted to the

School of Graduate Studies

Rutgers, The State University of New Jersey

in partial fulfillment of the requirements

For the degree of

Doctor of Philosophy

Graduate Program in Management

Written under the direction of

Sengun Yeniyurt

And approved by

_____

Sengun Yeniyurt

_____

Can Uslay

_____

Kihyun Kim

_____

Goksel Yalcinkaya

Newark, New Jersey.

May 2018

Copyright page:

ABSTRACT OF THE DISSERTATION

THE IMPACT OF THE ANNOUNCEMENT OF ATHLETE ENDORSEMENTS ON FIRM VALUE- AN EVENT STUDY ANALYSIS

By RAYED MONEER ALOTAIBI

Dissertation Director: Sengun Yeniyurt

This dissertation examines the financial market response to athlete endorsements. This popular marketing strategy comes at a high cost. The increasing costs of athlete endorsements constitute a large portion of firms' advertising budget. With such large expenditures by marketing strategists, it would be in their best interest to examine if the return is worth the investment, as marketers increasingly face pressure to communicate to top management the financial values that their marketing activities generate.

The financial value of marketing activities has received increasing interest in the marketing literature in recent years. However, the results have been largely mixed. Using a sample of 130 athlete endorsements of products of publicly traded firms over the period from 2003-2016, this dissertation employs an event data analysis to study the effect of athlete endorsements on firm performance. More specifically, the objective of the dissertation is to assess the profitability of using athlete endorsers as an advertising strategy by examining what role that the three elements, i.e. the endorser, the product,

and the firm have in determining the effect of the endorsement announcement on firm value.

I present empirical evidence that shows that the stock market, on average, rewards firms that engage in endorsement deals. Likewise, the market highly rewards firms who associate their brands with endorsers of a higher stature. Additionally, the findings of this study indicate that athletes with multiple endorsements have a different effect on the investors' reactions to endorsement announcements. Further examination reveals that this variable has an inverted U-shaped effect on firm value. Also, I find that investors react stronger to endorsements of athletes who play individual sports compared to those who play team sports. Another variable of interest in this dissertation is the gender of the endorser. Empirical results show that investors react stronger to an endorsement by a female athlete than an endorsement by a male athlete. This is noteworthy, since firms overwhelmingly sponsor men's sports in much higher numbers and with much larger sponsorship deals compared to women's sports.

Another variable I explore, which is largely overlooked in the literature, is age of the endorser. Results show that the financial market reacts more positively to endorsement deals of younger athletes than older athletes. More interestingly, further examination shows that younger female endorsers have a larger impact on firm value than younger male endorsers. Finally, I find that the endorsement of sport-related products have a larger positive impact on firm value than the endorsement of products unrelated to sports, which lends support for the match-up hypothesis. The conclusions in

this dissertation offer valuable managerial strategies for increasing firm value through athlete endorsements.

DEDICATION

To my mother and my father for their love, their guidance, their prayers, and endless support throughout this process and throughout life

ACKNOWLEDGEMENTS

I would like to express my deepest gratitude to my advisor, Dr. Sengun Yeniyurt, for all his knowledge, support, and insightful comments throughout my PhD experience. I'm grateful to him for allowing me to explore on my own and for always being a phone call away whenever I needed help. A special thanks goes to Dr. Can Uslay for providing me with invaluable feedback and support and for always being available. To Dr. Kihyun Kim and Dr. Goksel Yalcinkaya, thank you for your time and insightful comments.

Next, I would like to extend my thanks to the Marketing Department at Rutgers University for creating a welcoming environment for exchanging ideas with other faculty and guest speakers via department seminars throughout the years. Also, the opportunity to teach at Rutgers University has been an enriching experience that I will cherish forever, and for that I am thankful.

On a personal level, a big thank you goes to my siblings and my wife, Najd, for their patience and support throughout this process and for their prayers and faith in me.

TABLE OF CONTENTS

ABSTRACT.……..…….……....ii

DEDICATION ….…….…….…….……v

ACKNOWLEDGEMENTS….…….…….….vi

LIST OF TABLES..…….…….…...x

LIST OF FIGURES……..……..…….xi

CHAPTER 1 Introduction……...……..….1

CHAPTER 2 Literature review, Conceptual Framework, and Hypotheses….…….…7

2.1 Literature Review……..……...…….7

2.2 Conceptual Framework….……...……...14

2.2.1 Why announcements?.....14

2.2.2 Why firm value?.....16

2.2.3 Why athletes?

2.3 Hypotheses…….……..……...18

CHAPTER 3 Data and Methodology……...…….……...27

3.1 Data……...……...……..……..27

3.1.1 Endorsements……...27

3.1.2 The Event Date……..……...27

3.1.3 Firm Specific Data...……..……...29

3.2 Methodology……...……...……..……....29

3.2.1 Normal and Abnormal Returns…….30

3.2.2 Event Study……...30

3.2.3 Event Study Assumptions…….32

3.3.3 Event Window……..33

3.3.4 Estimation Period……..34

3.3.5 The Measurement of the Key Variables……...34

CHAPTER 4 Results.……..…..……...…….……...37

4.1 Data Description……...……...…….……...37

4.2 Findings……...……...…….…….....49

4.2.1 Cumulative Abnormal Returns…….50

4.2.2 Regression Analysis……..54

CHAPTER 5 Summary Implications Limitations Future Research..…….…….72

5.1 Summary……...……...…….…….....72

5.2 Implications……...……...……...…….....75

5.2.1 Theoretical Implications…….....….....75

5.2.2 Managerial Implications……...…….…….....76

5.3 Limitations and Future Research ……..…….…….....76

REFERENCES.……..…..……...…….……....78

Appendix A……..……..…..…….84

Appendix B……..……..…..…….85

Appendix C……..……..…..…….86

Appendix D……..……..…..…….87

LIST OF TABLES

Table 1: Overview of Select Literature on the Influence of Endorsements on Consumer Behavior…….10

Table 2: Overview of Select Literature on the Impact of Endorsements on Firm Value……...……...14

Table 3: Overview of Select Literature on the Study of Announcements…….17

Table 4: Frequency Distribution of Endorsements by year….…….……..……40

Table 5: Summary Statistics for Explanatory Variables in Regression Analysis……...……..41

Table 6: Rank Frequency Distribution of Endorsements……..…45

Table 7: Number of Endorsements Frequency Distribution……...……..……47

Table 8: CAR Summary Statistics for Industry in Regression Analysis……...…49

Table 9: Market Reaction to Endorsement Announcement (21-day window).……..…52

Table 10: Market Reaction to Endorsement Announcement (3-day-window)..……...…53

Table 11: CARs of Various Time Windows……...……..……55

Table 12: Results for Hypothesis H_2……...……..……57

Table 13: Results for Hypothesis H_3……...……..……59

Table 14: Results for Hypothesis H_4……...……..…62

Table 15: Results for Hypothesis H_5…….……65

Table 16: Results for Hypothesis H_6……...……..67

Table 17: Results for Hypothesis H_7……...…..……69

LIST OF FIGURES

Figure 1: Average Pay: Male Athletes vs. Female Athletes.....25

Figure 2: Gender Frequency Distribution of Endorsements.....42

Figure 3: Age Frequency Distribution of Endorsements……..43

Figure 4: Product Type Frequency Distribution of Endorsements…….……..44

Figure 5: Sport Type Frequency Distribution of Endorsements……...…48

Figure 6: Inverted U-shaped relationship between CAR and Number of Endorsement…….…….61

CHAPTER I

INTRODUCTION

A news article in *Bloomberg Businessweek* titled "Jay-Z gives Nike a deadline for Kevin Durant" explains how Nike, a $30 billion multinational giant, is being pressured by the American celebrity, Jay-Z into offering his client, the basketball star Kevin Durant, an endorsement deal worth up to $285 million (Stock 2014). Evidently, the amount requested by Jay-Z is the same amount that is being offered to Durant by Nike's competitor, Under Armour. This is very significant because not only was Durant offered this major endorsement deal but also Jay-Z, in fact, has the upper hand in the negotiation process with Nike. Nike, the article continues to express, is not used to being on the weak side of endorsement negotiations. Under Armour must find that this endorsement deal it offered was financially sound, but when one hears of such major deals offered to athletes, it is only natural to ask how much will the company get out of it? This curiosity prompted researchers to investigate the prudence of this marketing practice, which has been around since the late nineteenth century (Erdogan 1999), and judging by the recent Nike and Under Armour example, is turning into a fierce competition between companies as it pins them against each other.

Celebrities, whether athletes or movie stars, are media magnets who bring much media attention and exposure to the products they endorse. This practice of using celebrity endorsers has become even more popular throughout the decades. Erdogan, Baker, and Tagg (2001), state that celebrity endorsements make up 25% of all television

commercials in the United States. Furthermore, up to 19% of all advertisements aired in the U.S. feature celebrities (Creswell 2008). This marketing strategy is not only popular in America but is used worldwide. For instance, approximately 45% of all commercials aired in Taiwan and 24% of all ads in India feature a celebrity (Creswell 2008). Behind all the celebrity advertisements on large flashy billboards and in print media, television, radio, and online, are major costs incurred by firms. Indeed, as evident from the example mentioned in the beginning of this introduction, celebrity endorsements come at a huge cost. Among these major endorsements is a 7-year endorsement deal with between Nike and NBA star LeBron James in 2003 for a reported $90 million. Tiger Woods, on the other hand, earned $55 million from endorsements in 2012 alone. A look at the *Forbes* list of highest paid athletes from 2010 to 2016 shows a significant rise in the dollar value of athlete endorsement deals. Moreover, Fizel, McNeill, and Smaby 2008 claim that there is a continuing increase in the size of athlete endorsement deals. This rise constitutes a large portion of a corporation's advertising budget. With such large expenditures by marketing strategists, it would be in their best interest to ask if these endorsement deals pay off. Thus, marketers increasingly face pressure to communicate to top management the financial values that their marketing activities generate (Rust et al. 2004; Srivastava, Shervani, and Fahey 1998; and MacInnis 2011).

In the existing marketing literature, there are extensive studies on the impact of celebrity endorsements (athletes and others) on consumer behavior (Friedman and Friedman 1979; Kamins 1990; Kamins et al. 1989; McCracken 1989; Mowen and Brown 1981; Tripp, Jensen, and Carlson 1994). In addition, the financial value of marketing

activities has received increasing interest in the marketing literature in recent years (Agrawal and Kamakura 1995). Stockholders are important stakeholders to the firm, thus the analysis of shareholder value has received much attention and has been advocated for (Arzac 1986; Day and Fahey 1990; MacInnis 2011).

While many early researchers have examined athlete endorsements (Burnett, Menon, and Smart 1993; Fizel, McNeill, and Smaby 2008; Thwaites 1995), their studies focus on either a single athlete (Farrell et al. 2000; Mathur, Mathur, and Rangan 1997), conventional athletes (Fizel, McNeill, and Smaby 2008), heroic athletes (Shuart 2007), or in the case of Elberse and Verleun (2012), the impact of athlete endorsements on consumer-goods products.

One prominent study on the value of celebrity endorsements by Agrawal and Kamakura (1995) has found that the effect of celebrity contract announcements on stock returns are, on average, positive and they lead to a gain of 0.54 % in excess returns. Agrawal and Kamakura (1995) assert that the amount paid to celebrities for their endorsements vary depending on the stature of the celebrity, but their study overlooks the possible effect of celebrity stature on firm value. This study concerns itself with exploring the effects of a number of variables, including stature, on firm value

This study addresses other variables that could help in gaining an in-depth understanding of this celebrity endorsement phenomenon. Such variables include the number of products endorsed and its effect on firm value. Does the market react

differently to an athlete who endorses many products as opposed to an athlete endorsing a few? I define a multiple product endorser as an endorser who endorses more than one product simultaneously at the time of the new endorsement. In addition, this study explores other variables, such as the stature of the athlete, the type of sport the athlete plays, the type of product being endorsed, the gender and age of the athlete, the size of the firm, and the type of industry to which it belongs and it examines the effects these variables may have on the market's reaction to the endorsement. This study seeks to further our understanding of the use of athletes in the endorsement of products. Hence, the focus of this paper is on the announcements of athlete endorsement contracts by publicly traded companies, and how these endorsements relate to the change in firm value. The goal is to reach a deeper understanding of endorsements and their impact on shareholder value than what is present in the existing literature. The findings of this research should help move the marketing literature forward in the exploration of the effectiveness of celebrity endorsements, precisely athletes, as it aims to encourage more studies of the link between the different variables that come into play when examining the effect that an endorsement has on firm value. Also, it paves the way for future studies of the role, if any, that the number and type of endorsements an athlete or a celebrity has on the effect of the endorsement on firm value. Finally, this study sheds light on an important aspect of the examination of endorsements, which is the interaction of different variables and how this impacts the investor's reaction to the announcement of the endorsement.

In the literature, there are mixed results on how endorsements in general affect firm value (Agrawal and Kamakura 1995; Ding, Molchanov, and Stork 2011; Elberse 2007; McCormick 2016; Louie, Kulik, and Jacabson 2001; Albert, Ambroise, and Valette-Florence 2017). Furthermore, there are mixed results on how athlete endorsements impact firm value. Elberse and Verleun (2012) find that the payoff to signing an athlete endorser to be positive, while Ding, Molchanov, and Stork (2010) find insignificant abnormal returns. Fizel, McNeill, and Smaby in their 2008 study of conventional athletes find that endorsement contract have an insignificant impact on firm value. This study attempts to resolve this conflict and to contribute to the scholarship by examining multiple hypotheses about athlete endorsements of products and by looking at endorsements from the following angles:

i. different athlete characteristics, such as the stature of the athlete, the number of prior endorsements of the athlete, the type of sport the athlete plays, and the gender and age of the athlete
ii. different firm characteristics, such the size of the firm and the type of industry to which the firm belongs
iii. different product characteristics, such as the type of products being endorsed

This research utilizes event data to assess the impact of athlete endorsements on firm value from the period 2003-2017. The focus of this study is on the announcement of athlete endorsements of products and the impact of these announcements on firm value.

The rest of the dissertation is structured as follows: chapter two presents the literature review and outlines the conceptual framework followed by the hypotheses. Chapter three extensively describes the methodology and data used in this study. Chapter four presents and discusses the results. Finally, chapter five summarizes the findings and main contributions of the dissertation. It ends with a discussion on the limitations, implications, and future research directions.

CHAPTER II

LITERATURE REVIEW, CONCEPTUAL FRAMEWORK, AND HYPOTHESES

2.1 Literature Review

Companies use endorsers to support their brand or corporate image. Endorsers promote products or brands in advertisement, and/or by using the products or brands in public. The use of endorsers is a common practice among marketing practitioners. Typically, there are four types of endorsers that are used in advertising:

(1) experts

(2) average consumers

(3) celebrities

(4) created endorsers

The difference between created endorsers and celebrity endorsers is that created endorsers are characters that are developed by companies, whereas celebrity endorsers have created their own public character throughout their careers (Erdogan 1999). Studies have found that the use of celebrity endorsers is more effective than the use of non-celebrity endorsers in achieving positive attitudes towards advertisements, increasing intention to purchase, and in increasing sales of the advertised product (Erdogan 1999). The focus of this study is on celebrity endorsers, more specifically, athlete endorsers, as

any other type of endorsers is beyond the scope of this research.

The celebrity endorser is defined as “an individual who is known to the public (actor, sports figure, entertainer, etc.) for his or her achievements” (Friedman and Friedman 1979, p. 63). These publically known figures use their celebrity status to promote brands or products. The use of well-known figures in the promotion of products is a widely used marketing strategy. In the marketing literature, the studies of celebrity endorsements follow two main approaches.

i. the impact of celebrity endorsements on consumer behavior
ii. the impact of celebrity endorsements on firm value

This dissertation is examines the impact of celebrity endorsement on firm value.

Considerable research has investigated the influence of celebrity endorsements on consumer behavior (see Table 1). This marketing strategy has been found to increase the likelihood of consumers choosing the endorsed product (Heath et al. 1994; Kamins 1990), enhance product recall (Friedman and Friedman 1979; Kamins et al. 1989; Ohanian 1990), and celebrities make the advertisements more believable to consumers, which leads to increased intention to use the advertised product or service (Kamins et al. 1989). Furthermore, another study has found that celebrities featured in advertisements are believed to help retailers in getting their message across to a wide variety of consumers (Choi and Rifon 2007). Celebrities are also found to help brand recognition, and in creating a positive attitude and a distinct personality for the products they endorse (Kamins 1990; McCracken 1989; Petty, Cacioppo, and Schumann 1983). Further, studies have examined the role of congruency in the affect of celebrity endorsements on consumers and produced mixed results (McCormick 2016; Albert, Ambroise, and

Valette-Florence 2017). In an interesting study, Shuart (2007) developed a Celebrity-Hero Matrix in which he classifies celebrities as either high or low in hero and celebrity status. Shuart found that the most effective celebrity athlete endorser is one who is high in both hero and celebrity status.

Table 1

Overview of Select Literature on the Influence of Endorsements on Consumer Behavior

Study	Dependent Variable	Method	Sample	Findings
Heath, McCarthy, and Mothersbaugh (1994)	Brand attitude and choice.	Experiment	89 subjects in study one 113 subjects in study two	The vividness of advertising and the fame of the spokesperson do not have an influence on attitudes in noncompetitive settings. However, in competitive settings these features proved effective.
Kamins (1990)	Advertiser believability and credibility.	Experiment	89 graduate students	Study suggests that physically attractive celebrity endorsers can influence attention to an ad, and they also can enhance responses when they endorse products in the same product category.
Ohanian (1990)	Three sources of credibility (attractiveness, trustworthiness, and expertise)	Survey	Sample study with 78 college students. 542 respondents to a single questionnaire	Celebrities were found to be different based on attractiveness, trustworthiness, and expertise. Gender and age had no significant impact on intentions to purchase or on how they evaluated the credibility of the celebrities. Perceived expertise was only factor that explained intentions to purchase.
Friedman and	Effectiveness of	Survey	360 participants.	A Product-by-Endorser interaction was significant. Additionally, ads

Friedman (1979)	endorser type			composing certain product/endorser combinations achieved high evaluations. These combinations resulted in greater intent to purchase the product, and better attitude toward the product, and increased credibility for the endorser.
Hsu and McDonald (2002)	N.A	Explanatory content analysis	50 ads analyzed	Ads support a match-up between celebrities and mustache ads in terms of age, gender, and type of milk attributes in appealing to the consumer (teen/adult, female/male.
Shuart (2007)	Purchase intentions	Survey	120 respondents	Celebrities that are high on both hero and fame status are more likely to influence purchase behavior more
McCracken (1989)	N.A	N.A	N.A	A model that shows meaning passes from celebrity to product and from product to consumer is presented.
Tripp, Jensen, and Carlson (1994)	Consumer attitudes and purchase intentions	Experiment and interview	461 participants in study one 10 participants in study two	The number of products a celebrity endorses has a negative influence on consumers' perception of the celebrity endorser's likability and credibility, as well as attitude toward the brand. Secondly, the number of exposures to the celebrity endorser has an influence on consumers' attitude toward the ad and purchase intention.

Another approach to examining the effectiveness of celebrity endorsements is to measure the impact they have on the financial value of firms (see Table 2). Using an event data methodology to assess the impact of celebrity endorsements on firm value, Agrawal and Kamakura (1995) examine 110 celebrity endorsements from 1980 to 1992 finding positive results and concluding that such endorsements are worthwhile investments. Elberse (2007) examined the link between movie star participation and movie revenues, and found that although, on average, movie stars add approximately $3 million in box-office revenues, the use of stars in movies did not increase the firm value of movie companies. In a study that involved 31 endorsers, Louie, Kulik, and Jacabson (2001) analyzed how a firm's stock returns are impacted by a celebrity's involvement in 52 undesirable events. The authors found that firms associated with celebrities, who were viewed as more to blame for the undesirable events, experienced more losses in their stock price. Ding, Molchanov, and Stork (2011) assessed 101 celebrity announcements during a 12-year period starting from 1996, and found insignificant abnormal returns. Furthermore, they found no support for the match-up hypothesis, which states that there must be a proper match between endorsers and the products they are endorsing.

In addition to movie stars, athlete endorsers have received considerable attention in the study of celebrity endorsements. A stream of research has analyzed the use of athlete celebrity endorsers and its impact on the share price of firms, which represents the focus of this current study. The results of such studies have been predominantly mixed. Fizel McNeill, and Smaby. (2008) documented that, on average, conventional athlete endorsement contracts have no significant effect on the firm's value. Farrell et al. (2000)

examined the impact that an endorsement by one athlete, Tiger Woods, has on three brands he is endorsing. More specifically, they were interested in what impact his performance has on the brands he endorsed. They found that his performance is a significant driver of stock returns of only one company, Nike, and not so much for the other non-sport companies, American Express and Fortune Brands. Likewise, Mathur, Mathur, and Rangan (1997) examined one athlete, Michael Jordan, and the impact that his return to the NBA had on the stock price of firms he was already endorsing. They found that his anticipated return had increased the value of related firms by an astonishing $1.016 billion.

Table 2

Overview of Select Literature on the Impact of Endorsements on Firm Value

Study	Dependent Variable	Method	Sample	Findings
Farrell et al. (2000)	Stock returns	Event analysis	48 tournaments	No relationship found between Tiger Wood's performance and the excess returns of Titleist, and American Express. However, a relationship is found between Tiger Wood's performance and Nike's excess returns (1.1% increase in excess returns)
Elberse (2007)	Stock returns	Event analysis	1258 announcements	Movie stars added $3 million in box-office revenues but did not lead to an increase in firm value.
Elberse and Verleun (2012)	Sales and stock returns	Intervention model and event analysis	341 endorsements and a subset of 51 endorsements	Athlete endorsers lead to 4% increase in sales. Additionally, sales and about 0.25% increase in stock returns with each major achievement by the athlete, but these effects are constant over time only for stock returns.
Fizel, McNeill,	Stock returns	Event analysis	148 endorsements	Insignificant impact of conventional athlete endorsement on firm value.

and Smaby in their (2008)				Additionally insignificant support for the match-up hypothesis.
Louie, Kulik, and Jacabson (2001)	Stock returns	Event analysis	52 events	When endorser is seen as one to blame for the bad event, the impact of the endorsement on firm value is low and vice versa
Agrawal and Kamakura (1995)	Stock returns	Event analysis	110 endorsements	On average, celebrity endorsements have a positive impact on stock returns (0.44% increase in excess returns, and 0.54% increase in CARs).
Mathur, Mathur, and Rangan (1997)	Stock returns	Event analysis	1 event	Michael Jordan's anticipated return increased stock values by $ 1.016 billion.
Ding, Molchanov, and Stork (2010)	Stock returns	Event analysis	101 announcements	Insignificant abnormal returns around celebrity endorsements announcement dates. Weak support for match-up hypothesis. Endorsement of electronic industry products lead to positive abnormal returns.

2.2 CONCEPTUAL FRAMEWORK

2.2.1 Why announcements?

Marketing practitioners are increasingly pressured to measure and communicate the impact of their marketing actions on firm value (Osinga et al. 2011). Announcements are one way firms convey information and are often times considered as a marketing strategy of sending signals. Studies have shown that shareholders pay attention to announcements from a firm or various news sources, in order to gain more information about a firm (Xiong and Bharadwaj 2013). The existing academic literature has analyzed the effect of announcements on the stock price of firms. In one study, Vicki and Jacobson (1995) examined the impact of brand extension announcements on the stock price of a firm. Aaker and Jacobson (1994) have found that the financial market reacts favorably to information conveyed about the perceived quality. The effect of the announcement of a company's name change on the company's stock price was found to lead to improved performance (Horsky and Swyngedouw 1987). Chaney, Devinney, and Winer (1991) were interested in the effect of new product introductions on the market value of firms, and found that the market reacted more to announcements of multiple product introductions as opposed to announcements of a single product (see Table 3)

Table 3

Overview of Select Literature on the Study of Announcements

Study of Announcements in the Literature	
STUDY	**FINDINGS**
Vicki and Jacobson (1995)	the impact of brand extension announcements on the stock price of a firm depended on brand familiarity & attitude
Horsky and Swyngedouw (1987)	announcement of a company's name change on the company's stock price was found to lead to improved performance
Chaney, Devinney, and Winer (1991)	the market reacted more to announcements of multiple product introductions as opposed to announcements of a single product.

2.2.2 Why firm value?

There is a movement in marketing that is calling for the adoption of shareholder value-based measures of firm performance (Srivastava, Shervani, and Fahey 1998, and MacInnis 2011). According to the authors, traditional marketing assumptions (e.g., create value for customers, and win in the product marketplace) have been replaced by emerging assumptions, such as creating and managing market-based assets to deliver shareholder value. This shift in marketing thought is needed because "managers of diversified companies are rapidly replacing their usual yardsticks of performance, such as market share, growth in sales, or return on investments, with approaches that judge market strategies by their abilities to enhance shareholder value" (Srivastava, Shervani, and Fahey 1998, p. 3).

Marketers are facing intense pressure to show how their expenditures add to the value of shareholders (Doyle, 2000, and MacInnis 2011). Failure to assess the value of marketing activities and explain the contribution of marketing actions to shareholder value will undermine the role of marketing thought in corporate strategy, and will limit investment in marketing activities (Srivastava, Shervani, and Fahey 1998).

According to Louie, Kulik, and Jacabson (2001), analysis of stock market reaction provides insight into consumer reactions even though the focus is on investor expectation and not consumer response. Rust et al. (2004), in their study of the impact of marketing

action on the value of the firm, explain that the efforts to link marketing action to shareholder value, though rare, are beginning to emerge. Furthermore, they argue that more work in marketing is needed. Srinivasan and Hanssens (2009) evaluate several dependent financial metrics used in marketing literature to assess investor response, and they argue that unlike other measures that have limitations like the market-to-book ratio, which does not incorporate the random-walk behavior in stock prices, the use of stock returns has no obvious limitations. This makes the use of stock returns a logical thing to assess.

2.2.3 Why athletes?

Athletes are defined as professional sportsmen or sportswomen. Although the use of one type of celebrity may limit the generalizability of the findings to a much wider population of celebrity endorsers, athlete endorsers are, according to Elberse and Verleun (2012), excellent subjects to study due to a number of reasons. First, due to the massive popularity of athletes, a relatively large sample of endorsements by athletes can be readily assembled. Second, endorsements make up a significant portion of the income that athletes earn. Of the $77.2 million that NBA player Lebron James is estimated to have earned in 2016, $54 million of that came from endorsements. Tennis superstar Roger Federer earned $67.8 million in 2016, of which, a whopping $60 million came from endorsements (*Forbes* 2016). The size of endorsements appear to be rising year after year as companies compete to win over the endorsement of athletes by offering lifetime endorsements that go beyond the athletes' active playing days (Sports Illustrated

2015). Third, it is very risky to align a brand with an athlete, as athletes may experience a decline in performance, get injured, or get involved in scandals (Elberse and Verleun 2012), which can reflect poorly on the image of the products they endorse. When Tiger Woods was involved in a scandal in 2009, most of his sponsors dropped him. Most recently, 12-time Olympic Gold winner, Ryan Lochte was dropped by his sponsors due to the scandal that he was entangled in during the 2016 Summer Olympics in Rio. Thus, for advertising practitioners, enlisting a celebrity athlete comes with risks.

2.3 Hypotheses

An endorsement deal with an athlete, whether big or small, is a widely used marketing strategy by marketing practitioners for the purpose of benefiting the endorsed brand. I begin by examining the general connection between athlete endorsements and a firm's stock returns.

H_1: Athlete endorsements increase firm value.

Athlete endorsements are costly, which investors take into consideration. The costs are even more expensive when the endorser is a popular and widely known celebrity. According to Agrawal and Kamakura (1995), "depending on the status of the celebrity, remuneration could run into the millions of dollars for several years. A contract may also include a profit sharing plan" (p. 56). Indeed, some high profile celebrity athlete

endorsement contracts include stock options. George Foreman's endorsement contract included over 5.3 million shares worth $23.8 million dollars (*Forbes magazine* 2016). One would argue that the size of the contract would be a more important piece of information for investors than the stature of the celebrity, but endorsement contracts are not public record. As a matter of fact, in a recent article titled "Would Under Armour need to disclose a $325 million endorsement deal with Kevin Durant?" in the *Portland Business Journal*, the author argues that according to security lawyers, deals in the ordinary course of business do not have to be disclosed, and endorsement deals fall into that category. Thus, in some cases, investors are only aware of which celebrity has been hired by a firm as an endorser but not the details of the contract and thereby would only be acting on such available information. Athlete's with a higher stature tend to be better known and their endorsements get more attention in the media, thus, the higher the stature of the athlete, the stronger the impact of their endorsement on firm.
Thus, I posit the following hypothesis:

> **H_2**: An athlete's stature (ranking) is positively related to the impact of the endorsement on firm value.

Traditional advertising wisdom suggests that it is best to have an exclusive product endorsement deal with a celebrity (Tripp, Jensen, and Carlson 1994), but an exclusive deal can be highly expensive. Consequently, it is common practice to see a celebrity endorsing many products in what is known as sharing stars (Sloan and Freeman 1988). The real world is filled with examples of athletes endorsing many products, for

example American swimmer, Michael Phelps, has five endorsement deals (Woods 2016) while Tiger Woods has endorsed around 10 brands over the course of his career (*Forbes magazine* 2016). Hence, I posit that while an athlete with no endorsements is usually one who has not reached a certain level of success in their career and the effect of an endorsement on stock price from this athlete is minimal; as the athlete progresses in his or her career, the number of endorsements increases, and the effect on firm value increases as well.

In the marketing literature, studies suggest that multiple product endorsements can raise questions about the celebrity's credibility. Additionally, as the number of products endorsed increases, the risk of overexposure increases, thereby lessening the effectiveness of the endorsements (Tripp, Jensen, and Carlson (1994). Additionally, celebrities endorsing multiple products lead to diminishing consumer perceptions of the credibility and likability of celebrities (Tripp, Jensen, and Carlson 1994). Therefore, I argue that as the number of endorsements increase, consequently risking overexposure, the affect of the endorsement on firm value is diminished.

> **H_3**: There is an inverted U-shaped relationship between the number of endorsements an athlete has at the time of the announcement of a new endorsement and firm value.

Prior literature investigated the impact that the type of sport the athlete plays has on the evaluation of the endorsement by consumers. According to Louie, Kulik, and Jacabson (2001), celebrities have "celebrity equity" which can be transferred to the brand

they are endorsing. In a study on the importance of the type of sport in choosing an athlete to endorse, Martin (1996) states: “in addition to their own personality characteristics, athletes also bring to the endorsement process their sport’s characteristics” (p. 29). Martin finds that the sport’s image does matter when picking an athlete to endorse a product. Thus, evidence from the consumer behavior literature finds a difference in type of sport of the endorser. One of the interests of this dissertation is exploring the possibility that this finding on the effect of different types of effects of sports on consumers also extends to investors. That is, will the financial market also view dissimilarities between sports types? Hence, the question is: Does the type of sport play a role in the investors’ evaluation of the endorsement?

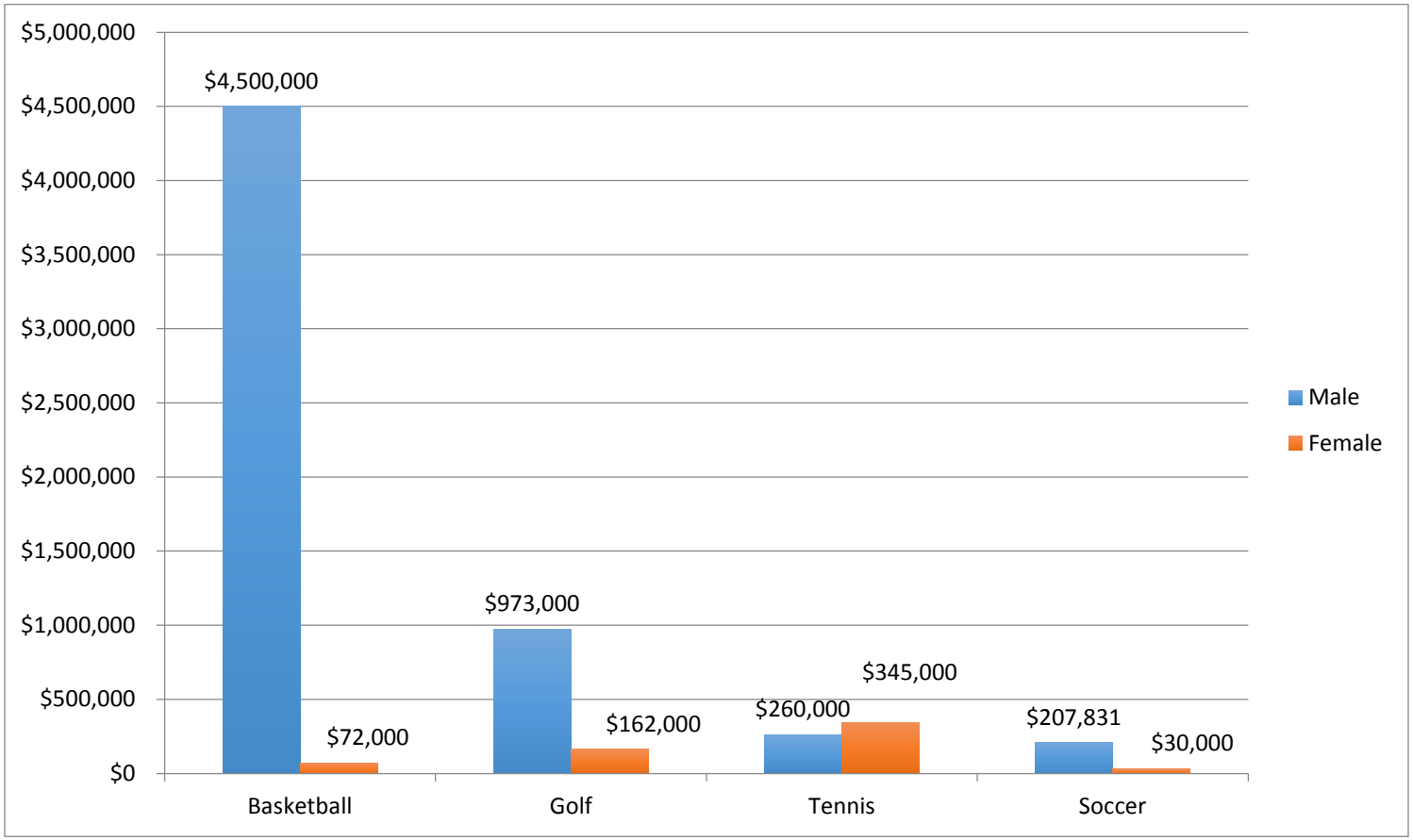
Generally speaking, sports can be classified as individual sports (e.g., golf and tennis) or team sports (e.g., basketball and football). Apart from their obvious differences, there are different dynamics that determine their success. An individual sport athlete constantly attempts to improve his/her individual performance every time, which depends on a high degree of self-discipline, self-reliance, and focus. On the other hand, a team sport athlete’s success is dependent on how the team plays together. Every player is expected to play his or her role for the success of the team as a whole. Is this reflected in the way investors evaluate an endorsement from athletes playing individual sports and team sports? In the extensive literature on athlete endorsements, only a very limited number of studies explored the differences between individual sports athletes and team sports athletes. A study by Lear, Runyan, and Whitaker (2009) found that what the

athlete's endorsed depended on the type of sport he or she played. In another study, Ding, Molchanov, and Stork (2011) found no significant differences. The studies, although a few, produced mixed results. Against this backdrop, this study addresses the following hypotheses:

> **H_4**: The endorsements of individuals-sport athletes have a stronger impact on firm value than team-sports athlete

Another interesting variable that merits attention is the gender of the athlete. Is there a difference between male athletes and female athletes in terms of the impact of their endorsements on firm value? In a news article in *Business insider* titled "Here's why it's fair that female athletes make less than men" the author explains that what separates men's sports from women's sports is revenue. And the difference is very large. According to a 2014 report by Adelphi University, on average female basketball players make only 1.6% of the salary earned by their male counterparts, and this pay gap isn't just limited to basketball (see figure 1).

[1]Figure 1: Average Pay: Male Athletes vs. Female Athletes



[1] *According to Adelphi University Sports Management, on average, female golfers earn only 16.6% of what male golfers earn. Even though in tennis female athletes on average make more than male athletes, the top paid female athlete makes less than 54% of what the top male athlete makes. These figures are accurate as of August 2014. Figures are from Adelphi University Sports Management.*

The disparity is mainly attributed to far less viewership and sponsorship compared to men's sports. In a news article in *The Guardian* titled "It's not just sports, all women's initiatives lack corporate sponsorships" the author agues that marketing practitioners believe that women's sports lack the branding impact that men's sports have. Yet, on an individual level some female athletes are still able to secure major endorsement deals. In a study by Boyd and Shank (2004) the gender of the athlete played a role in the effectiveness of the endorsement on consumers. What can be concluded from this discussion is that there is a difference between women's sports and men's sports in terms of sponsorship, viewership, and endorsements. Since, common practice dictates that male athlete's get far more endorsements than female athletes, one would expect that a female athlete endorsement announcement would garner more attention than a male athlete endorsement announcement. Thus, I propose the following hypotheses:

H_5: Male athlete endorsements have a lower impact on firm value than female athlete endorsements

Age of the athlete is an intriguing variable for marketing managers to consider when choosing an endorser. What role does the age of the athlete play? One would argue that younger athletes have more of a connection with younger consumers who make up a large portion of the athletic industry (i.e., athletic equipment, athletic apparel, athletic clothing, and athletic footwear, etc.). Unfortunately, research in this area is largely ignored. One study that looked at the age of the celebrity in determining the effectiveness

of the endorsement on consumers was by Ding, Molchanov, and Stork (2011), but no significant results were found that point to a connection between the age of the celebrity and the impact of the endorsement on firm value. Another study that looked at age of the endorser was by Hsu and McDonald (2002) and found that advertisers use celebrities of different age groups when targeting certain consumers, because they would be more effective. A study that was done by media agency MEC has found that the impact of celebrity endorsers was strongest with younger consumers (*WPP* 2009). This leads to the following argument:

> **H_6**: The younger the athlete is, the stronger the impact of the athlete's endorsement announcement on firm value.

Athletes endorse various types of products from sports-related products (i.e., athletic equipment, athletic apparel, etc.) to products unrelated to sports (i.e., credit cards, barbecue grills, airlines, etc.). In far less cases, athletes, and other celebrities, endorse products that are not only unrelated to their profession, but are considered harmful products like cigarettes. Such endorsements of harmful products are not the focus of this paper. Creating a match-up between the endorser and the endorsed product often leads to a more effective endorsement campaign as various studies have concluded ([2]Clark,

[2] Clark, Cornwell, and Pruitt (2009) examine sport sponsorship and find that, generally speaking, a link between the sport and the sponsor is positively related to the success of the sponsorship campaign.

Cornwell, and Pruitt 2009; [3] Cornwell, Pruitt, and Van Ness 2001; Kamins 1990). Since athletes are considered experts in their profession, their endorsement of sport-related products should be more effective than the endorsement of non-sport related products, due to their credibility (Koering and Boyd, 2009). Thus, the effectiveness of a congruence relationship between endorser and endorsed product should translate into increased firm value. Thus, I posit the following:

> **H_7**: Athlete endorsements of sports-related products have more impact on firm value than athlete endorsements of non-sports-related products.

[3] Cornwell, Pruitt, and Van Ness (2001) study corporate sponsorship of sporting events and find that a connection between the sponsor and the sponsored sporting event lead to significant financial gains.

CHAPTER III

Data and Methodology

3.1 Data

3.1.1 Endorsements

The first step is to identify what athlete's endorsed what products. A laborious and tedious task involved collecting data on all endorsements between athletes from all types of sports and all types of products belonging to firms of all types of industries. Various keywords were used in this task (i.e. Stephen Curry endorsers Apple, Apple signs with Stephen Curry, Apple announces Stephen Curry, Stephen Curry's contract with Apple, Stephen Curry and Apple, etc.) An initial number for the data collected was 360 endorsements. The next step involved filtering out the brands that didn't belong to publicly traded firms or weren't traded on the US Stock Market. This resulted in a remaining 240 endorsements.

3.1.2 The Event Date

The real challenge was in identifying the correct event date. The event date is the day the announcement of an endorsement contract is first made public through any media outlet, be it social media, or any online or print media. If the announcement took place on a weekend or after trading hours, then the event date is assumed to be the first day of

trading opportunity following the event. Any announcements of contract extensions are discarded, as their effect would most likely be smaller than new endorsement contracts (Ding, Molchanov, Stork 2011).

A thorough and extensive media search was conducted to obtain a database from numerous sources. These sources include, [1]*Sports Business Daily*, Google Search, Google News, The Wall Street Journal, social media, company websites, and Forbes Magazine. Any endorsement where the exact announcement date cannot be obtained or was from an unreliable source was omitted. The data from the initial source were confirmed using [2]LexisNexis Academic. Furthermore, LexisNexis Academic was used to perform a search for any leakage or firm-specific events from 10 days prior to 10 days after the announcement date, resulting in a robust data set with maximum accuracy. The use of this extensive media search distinguishes this current study from other existing studies that relied on printed media, which has its limitations especially in today's era of Twitter, as firms are increasingly using this online social medium for their press releases.

In order to measure only the effect of the announcements, I exclude any data where there have been multiple announcements by the firm on the same day (whether it is related to endorsements or any other significant announcements) within a 21 day window of + or – 10 days. This resulted in the final sample size of 130 endorsements involving athletes and publicly traded firms.

---

[1] *SportsBusiness Daily* is a website which draws information from multiple business, sports, and news sources.

[2] LexisNexis Academic is an online academic research database with comprehensive news content and business information.

3.1.3 Firm Specific Data

Profitability is measured based on stock market valuations of firms listed on The New York Stock Exchange (NYSE) and the NASDAQ. Following standard practice, daily stock returns are obtained from the University of Chicago's Center for Research in Security Prices (CRSP). Furthermore, data on firms' annual revenue is obtained via company websites or the NASDAQ.

3.2 Methodology

3.2.1 Normal and Abnormal Returns

Normal returns are returns that would be expected if the event did not take place. To examine if a certain event has an effect on stock prices, the abnormal returns have to be measured. This is accomplished by examining the change in stock price compared to the expected stock price, if no event had taken place, after adjusting for general market movements.

In order to model the normal returns, a market model approach is used. This approach relates the return of any stock to the return of the overall market portfolio. The market portfolio is calculated based on the University of Chicago's Center for Research

in Security Prices (CRSP) Equal Weighted Index. In other words, the abnormal return is calculated by subtracting the expected return from the actual return.

Thus, for each announcement *i* and period *t*:

$$AR_{i.t} = r_{i,t} - E\left[r_{i,t} \mid X_t\right] \quad (3.1)$$

Where $AR_{i,t}$ is the abnormal return for firm i at time t, $r_{i,t}$ is the actual returns, and $E\left[r_{i,t} \mid X_t\right]$ is the conditional expected returns. All of the empirical calculations are performed using the EVENTUS event study program. This program has become the standard in event study analysis in many fields of business research (Clark and Cornwell 2002).

3.2.2 Event Study

The rational for using event study methodology in examining the impact of athlete endorsements on shareholder value is due to the difficulty in isolating the effect of the athlete endorsement announcement (event) from all other possible factors that could affect the stock returns of a firm. Thus, even though it is difficult to measure the direct effect of such an announcement on a firm's future profits, an event study makes it possible to investigate whether or not shareholders think it is a prudent strategy, due to its potential to connect marketing strategies to changes in shareholder value. I use an event study methodology in my assessment of the impact of celebrity endorsements on shareholder value by analyzing how athlete endorsement announcements affect the stock

returns of the firms. Event studies are used to identify the valuation effects of marketing decisions (Mathur, Mathur, and Rangan 1997). In the marketing academic literature, event studies have been used to study the effect of new product introductions (Chaney, Devinney, and Winer 1991), online channel additions (Geyskens, Gielens, and Dekimpe 2002), brand extensions (Lane and Jacboson 1995), a change in a company's name (Horsky and Swyngedouw 1987), product recalls (Jarrell and Peltzman 1985), NASCAR sponsorship (Pruitt, Cornwell, and Clark 2004), new product pre-announcements (Sorescu, Shankar, and Kushwaha 2007), celebrity endorsements (Agrawal and Kamakura 1995; Elberse 2007; Louie, Kulik, and Jacobson 2001; Mathur, Mathur, and Rangan 1997), and product placements in movies (Karniouchina, Uslay, and Erenburg 2011).

Event study research, which was developed in finance, is highly multidisciplinary and is used in various disciplines including law, technology, management, politics, accounting, and marketing. It is primarily used to "measure the magnitude of the effect that an unanticipated event has on the expected profitability and risk of a portfolio of firms associated with that event" (Agrawal and Kamakura 1995, p.57). In the context of this study, the unanticipated event is the announcement of athlete endorsements. The theory underlying event study methodology is the Efficient Market Hypothesis, which states that financial markets are efficient because the stock prices adjust very rapidly to new information and that the stock price of a firm reflects all known information about the firm's future earnings potential (Fama 1970). As new information becomes available, investors react immediately by buying or selling stock.

Thus, event studies are used to measure the financial market's reaction to an unanticipated announcement of an event. According to the Efficient Market Hypothesis, "abnormal returns occur when the market perceives that the firm's announcement or 'event' will have a positive (or negative) impact on the firm's future cash flows, resulting in immediate stock price increases (decreases)" (Johnston 2007, p.2). In addition to the Efficient Market Hypothesis, extensive literature on this topic has also concluded that stock prices react to new information in the same fashion that the Efficient Market Hypothesis claims (Aaker and Jacobson 1994).

As previously mentioned, athlete endorsement contracts can cost tens of millions of dollars, and since they are made publicly and can garner large coverage by the media, such an announcement is considered a significant event and investors will react immediately. Some studies use sales to examine the impact of marketing activities, but sales, as with other accounting-based measures, are not good indicators of firm performance because they are subject to manipulation by management, whereas stock prices are not subject to such manipulation, but rather reflect the time and risk discounted present value of all future cash flows (McWilliams and Segal 1997).

3.2.3 Event Study Assumptions

In using an event study methodology, I will be making three main assumptions. First, I am assuming that the market is efficient. This implies that stock prices capture all known and relevant information, thus any knew information would be quickly and accurately incorporated into stock prices (McWilliams and Siegal 1997). Some studies found that it takes only 15 minutes for investors to react to a firm announcement (Dann, Mayers, and Raab 1977). The second assumption is that the event is unexpected. The firm publicly announces the event and the market has no prior knowledge of this event. Abnormal returns are thus a result of the market reacting to this new and unexpected event. The third and final assumption is that I have isolated any confounding effects that might interfere with the effect of an event. This includes isolating any other significant announcements by the firm. In order to control for any confounding events, a short event window is required, as a long window would make it difficult to isolate such events.

3.3.3 Event Window

I define the event (*time 0*) as the endorsement announcement. For the assumptions to hold, an event window (the investigation period) needs to be specified, which is as short as possible. The justification for this is that it is difficult to control for confounding events in long windows. Thus, an event window should be short enough to exclude confounding events but long enough to include the significant event under consideration (McWilliams and Siegel 1997). Consistent with prior [3]work, and because the type of

[3] Agrawal and Kamakura in their prominent 1995 paper titled: "The Economic Worth of Celebrity Endorsers: An Event Study Analysis", use a window of (-10, +10) around the event day.

event being examined herein (athlete endorsements) does not warrant a long event window, an event window of 10 days before the event through 10 days after the event is examined.

3.3.4 Estimation Period

As opposed to the event window, which focuses on the days when information related to the event might be released, the estimation period focuses on the normal trading days (Johnston 2007). It is important to set an estimation period in order to minimize any concerns related to information leakage (Chen, Ganesan, and Liu 2009). An estimation period ends several days before the event date. Following the recommendation by Elbere and Verleun (2011), an estimation period of 240 days $t=[-250, -10]$ is used.

3.3.5 The Measurement of the Key Variables

Firm size ($REVENUE_j$) is defined as the logarithm of a firm's annual sales revenue of the fiscal year prior to the endorsement announcement.

Age of the athlete (AGE_j) is the age of the athlete at the time of the endorsement.

Gender of the athlete ($MALE_j$) equals 1 for male athletes and zero for female athletes.

Stature of the athlete ($RANK_j$). This variable reflects the stature of an individual athlete, expressed as a ranking, in the season prior to the endorsement date. Lower values are indicators of higher statures. In order to test the second hypothesis, the athlete ranking in [4]Sportspro Media is used. It ranks athletes from any type of sport based on their marketing potential. More specifically, this ranking is based on the "value for the money, age of the athlete, home market, charisma of the athlete, the willingness to be marketed, and the crossover appeal" (*Sportspro Media* 2017). For every single endorsement, I looked up the athlete's ranking for that year the endorsement is announced. In the case the athlete is not ranked, the endorsement is omitted. As a result, 74 observations where athletes were ranked were recorded.

Number of Endorsements ($No.\ of\ endorsements_j$) reflects the number of endorsements an individual athlete has at the time the announcement of the new endorsement was made. Again, Sportspro Media was used to collect this information. Other sources were also utilized, such as the Google search engine as well as *Sports Business Daily*. For every observation the information on the number of endorsement the athlete has prior to the new endorsement was searched for, and when such information was not available, the observation was omitted. This resulted in 74 observations.

Type of sport ($TEAM_j$) is defined as the type of sport the athlete plays, whether it is a team sport (i.e., basketball, football, soccer, etc.) or an individual sport (i.e., golf, tennis, boxing etc.) Team equals one for Team sports and zero for Individual Sport.

[4] Sportspro Media identifies itself as a "leading international media company for the sports industry in print, digital and events." (*Sportspro Media* 2017).

Type of product ($SPORT_j$) is defined as the type of product, which the athlete is endorsing. It can be a Sports related product or a non-sports related product. Sports equals 1 for sports related products and zero for non-sports related products.

CHAPTER IV

Results

4.1 Data Description

The objective of the study is to assess the profitability of using athlete endorsers as an advertising strategy. A sample of [1]130 events of endorsements from different athletes from year 2003 to 2016 was used and analyzed for this study (see Table 4). All statistical tests were done using STATA at 5% level of significance, hence, the decision rule is to reject the null hypothesis if p-value is less than 0.05, otherwise, fail to reject the null hypothesis.

Table 5 presents the summary statistics for all the explanatory variables in the regression analysis. Average sales revenue of the firms in the sample is $33 billion, 72.3% of the athletes are male (see Figure 2), average athlete is 24.4 years old (see Figure 3) with rank 23.4 (see Table 6). Average athlete has 4.26 endorsements (see Table 7). On average, 61.5% of the products are sports products (see Figure 4) and 57.6% of the athletes play a team sport (see Figure 5).

[1] For each of the 130 endorsements, we have 21 abnormal returns (-10 days, day 0, and +10 days) calculated using the market model as explained in the data section.

Table 4: Frequency Distribution of Endorsements by year

Endorsement year	Freq.	Percentage	Cum.
2003	3	2%	0.023076923
2004	3	2%	0.046153846
2005	3	2%	0.069230769
2006	2	2%	0.084615385
2007	5	4%	0.123076923
2008	3	2%	0.146153846
2009	4	3%	0.176923077
2010	11	8%	0.261538462
2011	13	10%	0.361538462
2012	12	9%	0.453846154
2013	13	10%	0.553846154
2014	16	12%	0.676923077
2015	23	18%	0.853846154
2016	19	15%	1
total	130	100%	

Table 5: Summary Statistics for Explanatory Variables in Regression Analysis

Variable	N	Mean	Std. Dev.	Min	25th Pctl.	Median	75th Pctl.	Max
Revenue	130	$ 33,000	$ 63,800	$ 43.4	$ 1,830	$ 8,590	$ 34,500	$ 482,000
Male	130	0.72	0.44	0	0	1	1	1
Age	74	24.40	3.92	18	22	24	26	42
Rank	74	23.45	18.16	1	8	16.5	39	59
Number of endorsement	130	4.27	2.42	1	2	4	6	10
Team	130	0.57	0.49	0	0	1	1	1
Sports	130	0.61	0.48	0	0	1	1	1

male=1 for Male athletes and zero for female athletes.
team=1 for Team sports and zero for Individual sports
sports=1 if product type is sports and zero if non-sports.
Revenue is in millions USD

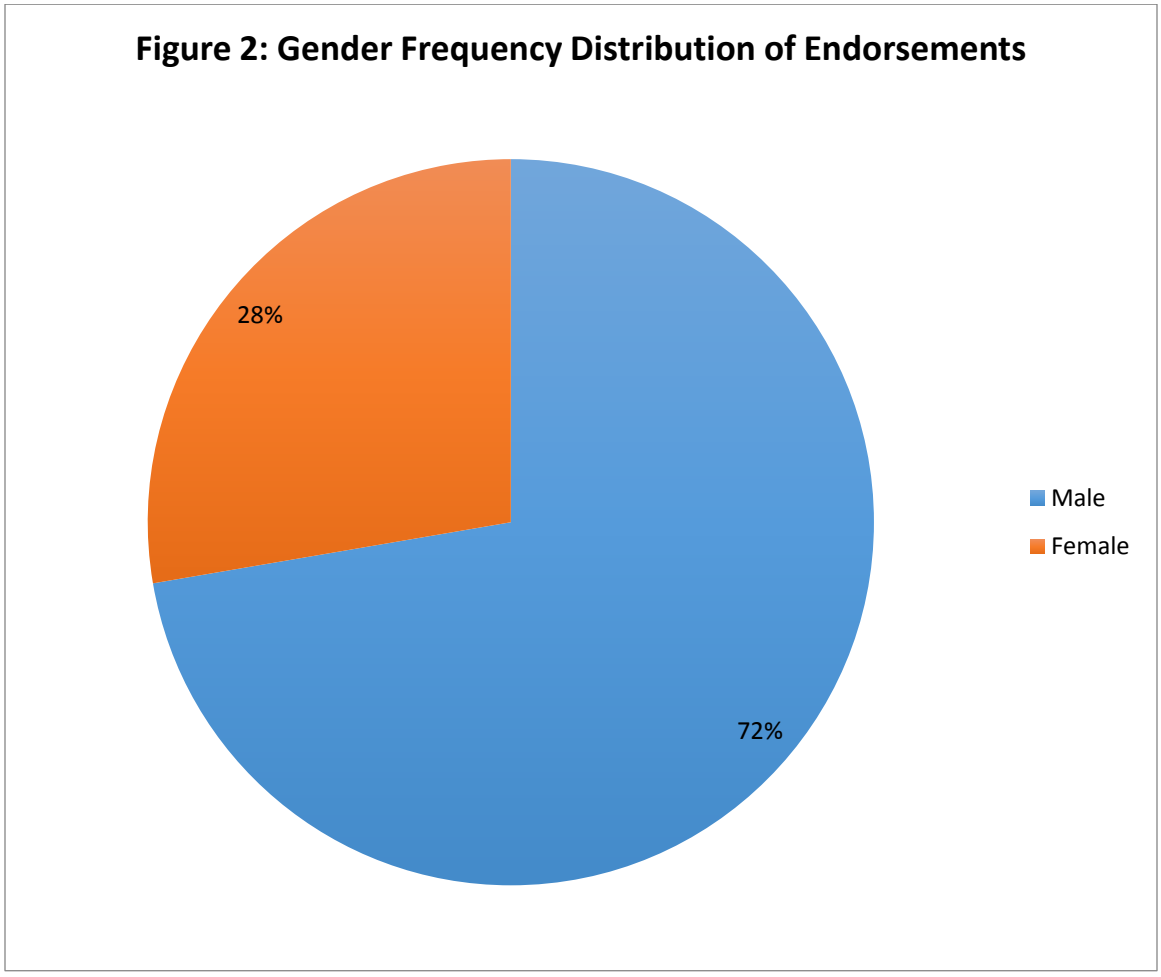


Figure 2: Gender Frequency Distribution of Endorsements
28%
72%
Male
Female

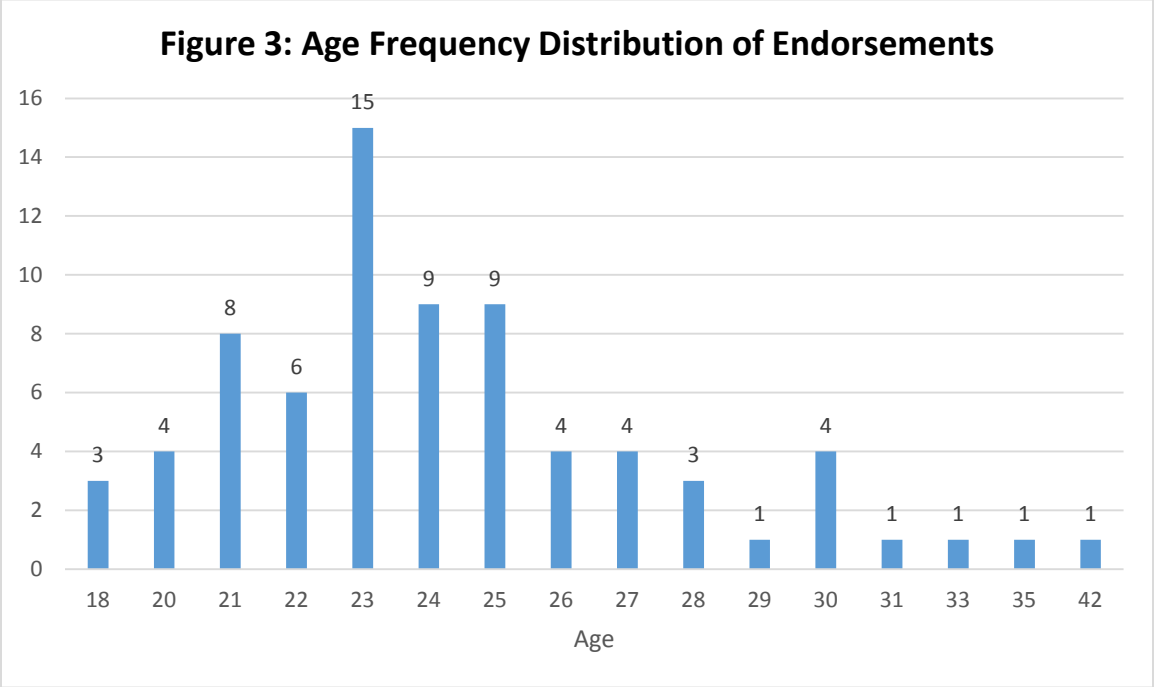


Figure 3: Age Frequency Distribution of Endorsements
16
14
12
10
8
6
4
2
0
3
4
8
6
15
9
9
4
4
3
1
4
1
1
1
1
18
20
21
22
23
24
25
26
27
28
29
30
31
33
35
42
Age

Figure 4: Product Type Frequency Distribution of Endorsements

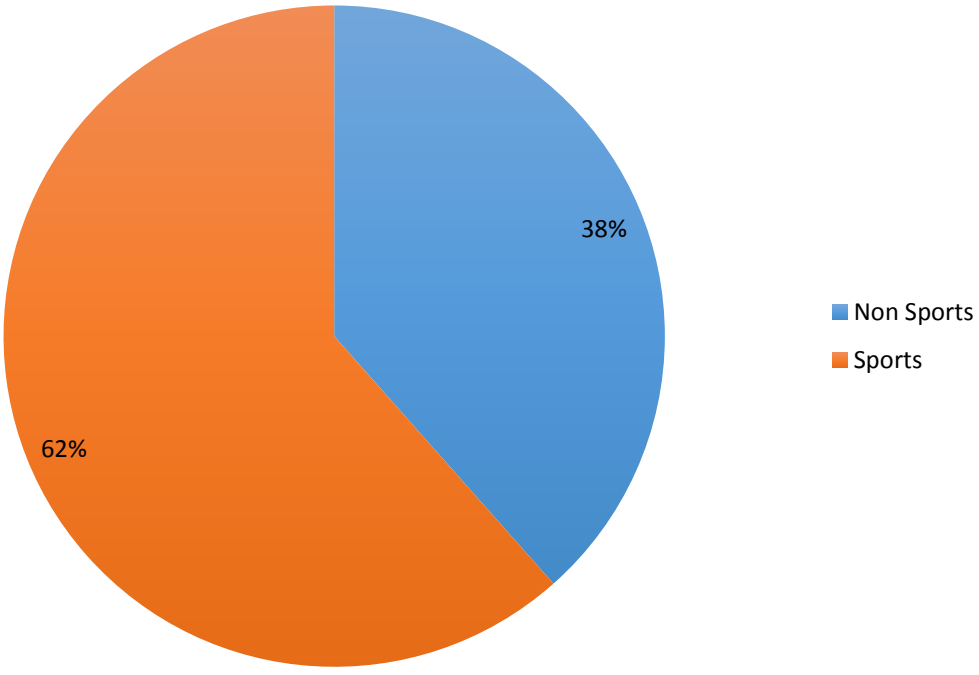


Table 6: Rank Frequency Distribution of Endorsements

Rank	Freq.	Percent	Cum.
1	3	4%	4.05
2	3	4%	8.1
3	3	4%	12.15
4	2	3%	14.86
5	1	1%	16.21
6	1	1%	17.56
7	4	5%	22.96
8	2	3%	25.66
9	2	3%	28.36
10	3	4%	32.41
11	2	3%	35.11
12	3	4%	39.16
13	3	4%	43.22
14	2	3%	45.92
15	1	1%	47.27
16	2	3%	49.97
17	1	1%	51.32
19	1	1%	52.67
21	1	1%	54.02
22	1	1%	55.37
23	2	3%	58.07
24	1	1%	59.42
25	1	1%	60.77
26	1	1%	60.84
27	1	1%	62.19
28	1	1%	63.54
29	1	1%	64.89
30	1	1%	66.24

Table 6: Rank Frequency Distribution of Endorsements (cont.)

Rank	Freq.	Percent	Cum.
31	1	1%	67.59
32	1	1%	68.94
33	1	1%	70.29
35	1	1%	71.64
36	2	3%	74.34
39	1	1%	75.69
42	1	1%	77.04
44	3	4%	82.44
45	1	1%	83.79
46	1	1%	85.14
49	2	3%	87.85
51	1	1%	89.2
52	1	1%	90.55
53	1	1%	91.9
55	1	1%	93.25
56	2	3%	95.95
58	2	3%	98.65
59	1	1%	100
Total	74	100%	

Table 7: Number of Endorsements Frequency Distribution

Number of endorsements	Freq.	Percent	Cum.
1	11	15%	14.92
2	9	12%	27.07
3	11	15%	41.93
4	13	18%	59.49
5	8	11%	70.29
6	5	7%	77.04
7	10	14%	90.55
8	3	4%	94.6
9	2	3%	97.3
10	2	3%	100
Total	74	100%	

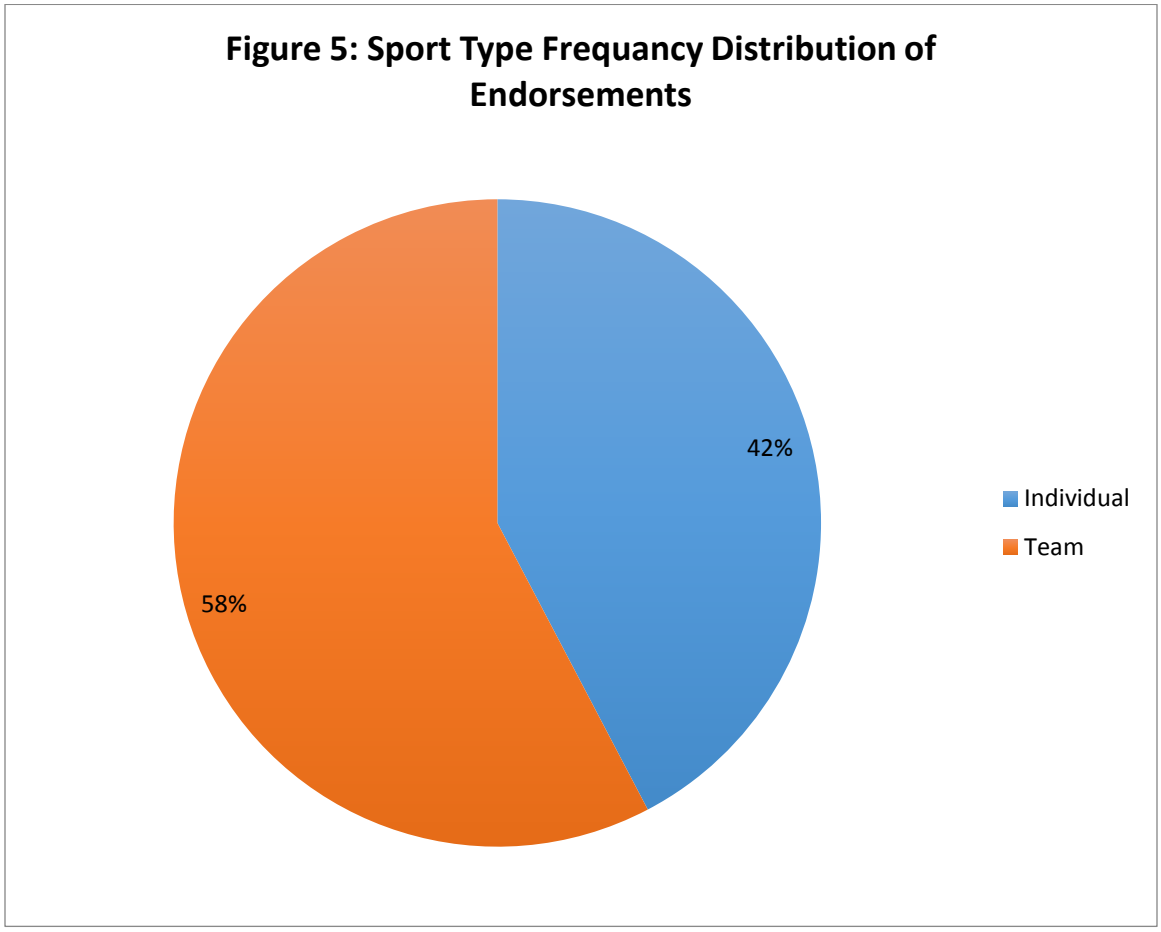


Figure 5: Sport Type Frequancy Distribution of Endorsements
42%
58%
Individual
Team

Table 8: CAR Summary Statistics for Industry in Regression Analysis

Industry	N	mean	sd	min	p25	Mean	p75	max
Auto	2	-0.05284	0.055591	-0.10776	-0.10776	-0.05284	0.00209	0.00209
Consumer healthcare	1	-0.05555	0	-0.05555	-0.05555	-0.05555	-0.05555	-0.05555
Drug Related Products	1	-0.15982	0	-0.15982	-0.15982	-0.15982	-0.15982	-0.15982
Drug Stores	1	-0.17441	0	-0.17441	-0.17441	-0.17441	-0.17441	-0.17441
Fast Food	2	0.049316	0.002894	0.046457	0.046457	0.049316	0.052175	0.052175
Financial	3	-0.01279	0.035049	-0.05421	-0.05421	-0.01502	0.030873	0.030873
Food and Beverage	16	0.020886	0.038745	-0.04715	-0.00355	0.028171	0.039066	0.117241
Medical Appliances & Equipment	1	0.061054	0	0.061054	0.061054	0.061054	0.061054	0.061054
Multimedia & Graphics Software	3	-0.07187	0.053876	-0.13593	-0.13593	-0.07458	-0.00509	-0.00509
Oil and Gas	1	-0.00853	0	-0.00853	-0.00853	-0.00853	-0.00853	-0.00853
Personal Products	12	0.020782	0.057553	-0.06486	-0.02192	0.008316	0.049298	0.140724
Processed & Packaged Goods	3	0.024505	0.033715	-0.02118	-0.02118	0.036731	0.057964	0.057964
Property & Casualty Insurance	3	0.037603	0.003798	0.034231	0.034231	0.035717	0.042862	0.042862
Restaurants	7	-0.01821	0.06191	-0.10602	-0.08992	-0.01261	0.042747	0.065897
Retail	1	-0.01394	0	-0.01394	-0.01394	-0.01394	-0.01394	-0.01394
Specialty Retail	1	-0.01796	0	-0.01796	-0.01796	-0.01796	-0.01796	-0.01796
Sporting Goods	9	0.032573	0.073487	-0.0677	-0.05063	0.067385	0.096711	0.113882
Tech	4	-0.0887	0.134585	-0.31154	-0.19136	-0.03688	0.013968	0.030496
Textile Apparel Clothing Footwear	56	0.01721	0.096342	-0.18497	-0.04499	0.021533	0.058981	0.380264
Wireless Communications	3	-0.04772	0.138357	-0.23212	-0.23212	-0.00799	0.096966	0.096966
Total	130	0.005933	0.086743	-0.31154	-0.04026	0.013152	0.049655	0.380264

Table 8 presents cumulative abnormal returns by industry. CAR is positive, that is there is an increase in firm value effect of endorsement announcement, for industries like Textile Apparel Clothing Footwear, Food and Beverage, Personal Products, and Sporting Goods with higher number of observations. Appendix A 7 shows the frequency distribution by industry. Several closely related industries were combined (i.e., Textile, Apparel, Clothing, and Footwear).

One of the key underlying features of the efficient market hypothesis is that any new information needs to be reflected in stock prices very rapidly. Endorsements of an athlete is a "new information" for market participants, and hence should affect the stock price of the endorsing firm since future cash flows of the business will be affected as a result of the new endorsement. Market price, and hence the market value of the firm will increase in response to a "positive news", which I argue that endorsing an athlete affects the business positively, leading to increases in market value. To capture this effect, I employed event study methodology. Intuitively, we can capture the "announcement effect of the endorsement" by comparing actual return around the announcement to the one predicted by the market model (i.e., single factor index model). We can define the abnormal return in response to the endorsement as follows:

$$AR_{i.t} = r_{i,t} - E\left[r_{i,t} \mid X_t\right] \tag{4.1}$$

Where AR is the abnormal return of the firm i at time t, $r_{i,t}$ is the actual return, and $E[r_{it} \mid X_t]$ is the conditional expected return. For estimation purposes, I use the market model as follows

$$E\left[r_{i,t} \mid X_t\right] = \alpha + \beta_i r_{m,t} \tag{4.2}$$

where $r_{m,t}$ is the return on S&P500 index.

So, Abnormal Return becomes

$$AR_{i.t} = r_{i,t} - [\alpha + \beta_i r_{SP500,t}] \tag{4.3}$$

To get Cumulative Abnormal Return, we sum abnormal returns over the event window. We use two different event windows for robustness: 3-day (-1, 0, +1) and 21-day (-10, 0, +10) event windows.

$$CAR_i = \sum_{t=1}^{n} AR_{i.t} \tag{4.4}$$

4.2 Findings

First, the findings for the cumulative abnormal returns for the endorsement announcements around the event date are presented followed by the regression results, which address the hypotheses presented in this paper.

4.2.1 Cumulative Abnormal Returns

In hypothesis H_1, I stated that athlete endorsements increase firm value. Table 9 reports the cumulative abnormal returns across a 21-day window (-10 days to +10 days).

[1]Table 9: Market Reaction to Endorsement Announcement (21-day window)

Variable	N	Mean	sd	Min	p25	Median	p75	Max
CAR	130	0.005933	0.086743	-0.31154	-0.04026	0.013152	0.049655	0.380264

As Table 9 reveals, the mean cumulative abnormal return over a 21-day window (-10 days to +10 days) around the endorsement date is 0.59%. The median cumulative abnormal return over 21-day window (-10 days to +10 days) around the endorsement date is also positive at 1.31%, meaning that there is a highly positive endorsement announcement effect and increase in firm value.

For robustness, a 3-day event window was also analyzed. Table 10 presents the mean cumulative abnormal return over a 3-day window (-1 days to +1 days) around the endorsement date is 0.24%. In addition, the median cumulative abnormal return over a 3-day window (-1 days to +1 days) around the endorsement date is 0.15%, meaning that

[1] The table displays cumulative abnormal return (CAR) to the announcement of endorsements. Days (-10 days to +10 days) are the 21-day returns around the day of the announcement. It includes day 0, which is the date of the announcement and 10 days prior to day 0 (-10) and 10 days after day 0 (+10).

there is a positive endorsement announcement effect and increase in firm value around event date.

[2]Table 10: Market Reaction to Endorsement Announcement (3-day-window)

Variable	N	Mean	sd	Min	p25	Median	p75	Max
CAR	130	0.00242	0.035084	-0.10904	-0.0126	0.001482	0.013168	0.219414

The findings in Table 9 and Table 10 support the hypothesis H_1 that athlete endorsements enhance firm value. The mean cumulative return for the 21-day window (0.59%) is [3]larger than that found in any of the event windows by Agrawal and Kamakura (1995).

Additionally, I conducted an additional robustness checks by varying time windows. As table 11 displays, the highest CARs were (-10, +10), (-1, +10), and (+1, +5), respectively. The lowest CARs were (-10, -2), (-2, 0), and (-1, 0), respectively. A common theme emerges here, in that high [4]CARs are mostly for windows, which include post endorsement announcement days. At the same time, the low CARs are mostly for windows which only include pre endorsement announcement days and 0 days as well. This might signal that the market reacts more after the information of the endorsement

[2]The table displays cumulative abnormal return (CAR) to the announcement of endorsements. Days (-1 days to +1 days) are the 3-day return around the day of the announcement. It includes day 0, which is the date of the announcement and 1 days prior to day 0 (-1) and 1 day after day 0 (+1).

[3] Agrawal and Kamakura (1995) showed a significant CAR with a value of 0.54%.

[4] Even though time interval (-10, +10) includes 10 preannouncement days, most of the abnormal returns accumulated after day 0, i.e. after the announcement date.

has been verified by the firms, via an announcement by firms and it’s not just information which is purely speculative and related on leaks.

Table 11: CARs of Various Time Windows

Time Interval	Variable	N	MEAN %	sd	Min	p25	Median	p75	Max
(-10, +10)	CAR	130	**0.0060**	0.0867	-0.3115	-0.0386	0.0110	0.0495	0.3803
(-10, -2)	CAR	130	0.0010	0.0538	-0.1590	-0.0240	0.0001	0.0287	0.1583
(-5, +5)	CAR	130	0.0031	0.0670	-0.1714	-0.0250	0.0042	0.0335	0.3350
(-5, -2)	CAR	130	-0.0020	0.0385	-0.1414	-0.0188	-0.0045	0.0133	0.1665
(-2, 0)	CAR	130	0.0012	0.0337	-0.1659	-0.0130	0.0024	0.0167	0.1527
(-1, 0)	CAR	130	0.0018	0.0233	-0.3115	-0.0386	0.0013	0.0113	0.0920
(0, +1)	CAR	130	0.0019	0.0307	-0.0785	-0.0088	0.0025	0.0086	0.2501
(-1, +1)	CAR	130	0.0024	0.0350	-0.1090	-0.0113	0.0014	0.0131	0.2194
(+1, +5)	CAR	130	0.0032	0.0468	-0.1171	-0.0210	0.0028	0.0216	0.2220
(+1, +10)	CAR	130	0.0031	0.0581	-0.2451	-0.0201	0.0071	0.0268	0.2278
(-1, +10)	CAR	130	0.0050	0.0581	-0.2027	-0.0227	0.0084	0.0327	0.2443

[1]4.2.2 Regression Analysis

In hypothesis H_2, I proposed that the impact on firm value would be higher for athletes with higher stature, because higher stature athletes tend to be better known and customers value endorsement of such athletes more. I use the ranking of the athlete as a measure of stature. To test this hypothesis, I use the following empirical model

$$CAR_i = \alpha_i + \beta_{1i} rank_i + \beta_{2i} \ln(firm\ size)_i + \varepsilon_i \quad (4.5)$$

where *rank* is athlete's rank and *ln(firm size)* is natural logarithm of annual firm revenue. The key variable of interest is "rank". The model controls for firm size.

The results in Table 12 show that Rank is positive and that t-value is 2.14 > 1.96 critical value so it is significant at 5%. This translates into higher rank is positively correlated with CAR (firm value). This finding lends support for hypothesis H_2, that athletes with a higher stature have more impact on firm value.

[1] All models are estimated using pooled OLS and heteroscedasticity consistent robust standard errors.

Table 12: Results for Hypothesis H_2

					Number of obs =	**74**
					R-squared =	0.0046
					Root MSE =	0.0828
CAR	**Coef.**	**Robust Std. Err.**	**t**	**p>t**	**[95% Conf**	**Interval]**
Rank	0.0003052	0. 0001425	2.14	0.035	0.0015049	0.0021153
Log (revenue)	9.92e-06	0. 0093058	0.00	1	-0.118231	0.1182508
Constant	-0.0095105	0. 2310988	-0.04	0.968	-2.945899	2.926878

In Hypothesis H_3, I argued that the number of existing endorsements an athlete has at the time of the new endorsement effects firm value. More specifically, I hypothesized that as the number of endorsements an athlete has at the time of the endorsement increases, the effect on firm value also increases but to a certain point then the effect on firm value drops, thus having an inverted U-shaped relationship. To test for the nonlinear effect, I estimate the following model controlling for firm size and athlete's rank.

$$CAR_i = \alpha_i + \beta_{1i}\, No\ of\ endorsements_i + \beta_{2i} No\ of\ endorsements_i^2 + \beta_{3i} rank_i + \beta_{4i} \ln(firm\ size)_i + \varepsilon_i \quad (4.7)$$

The reason I control for athlete's rank is that it allows for better focus on the coefficient for number of endorsements because they tend to be closely related. Intuitively, we would expect that the higher an athlete is ranked, the more endorsement opportunities he or she would get.

Table 13: Results for Hypothesis H_3

Number of obs	=	130
R-squared	=	0.0168
Root MSE	=	0.0877

CAR	Coef.	Robust Std. Err.	t	p>t	[95% Conf.	Interval]
No. of endorsement	0.0233593	0.0076779	3.04	0.002	-0.0741973	0.1209159
No. of endorsements sq	-0.0017838	0.0002687	-6.64	0.000	-0.0051978	0.0016302
Log (revenue)	-0.0014108	0.0015579	-0.91	0.364	-0.0212056	0.018384
Rank	0.0011061	0.0007775	1.42	0.158	-0.0087736	0.0109858
Constant	-0.0491731	0.0040035	-12.28	0.000	-0.1000428	0.0016966

I find support for H_3. Table 13 shows that number of endorsements squared is negative and that t-value is -6.64 > 2.33 critical value so it is significant at 5%. This implies that CAR increases at a decreasing rate before eventually decreasing (for large values of number of endorsements) as the number of endorsements the athlete has at the time of the new endorsement increases, thus an inverted U-shaped relationship exists.

Additionally, I am interested in identifying the maximum for inverted U effect. To this end, an additional test was conducted in order to determine the maximum point for the inverted U effect. I calculate the optimum number of endorsements (the number where the effect is maximum). According to the plotted curve in Figure 6 and Table 14, the number of endorsements peak at 6.8 endorsements and then it starts dropping.

Figure 6: Inverted U-shaped relationship between CAR and Number of Endorsements

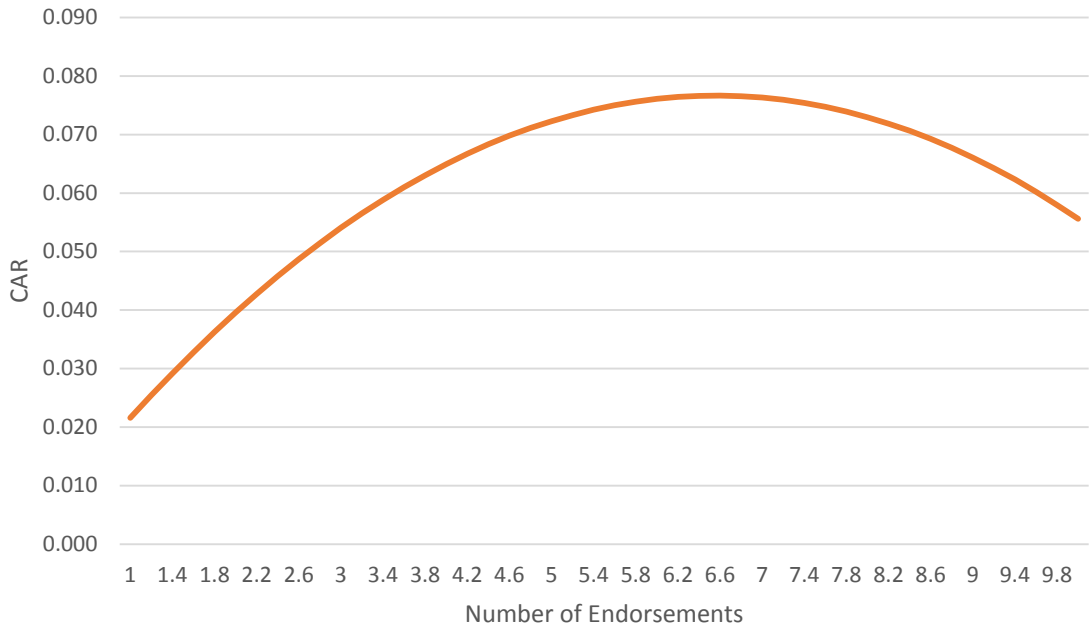


Table 14: Inverted U-Shaped relationship between CAR and Number of Endorsements

no. of endsmnt	CAR
1	0.022
1.2	0.025
1.4	0.029
1.6	0.033
1.8	0.036
2	0.040
2.2	0.043
2.4	0.046
2.6	0.049
2.8	0.051
3	0.054
3.2	0.057
3.4	0.059
3.6	0.061
3.8	0.063
4	0.065
4.2	0.067
4.4	0.068
4.6	0.070
4.8	0.071
5	0.072
5.2	0.073
5.4	0.074

Table 14: Inverted U-Shaped relationship between CAR and Number of Endorsements (cont.)

no. of endsmnt	CAR
5.6	0.075
5.8	0.076
6	0.076
6.2	0.076
6.4	0.077
6.6	0.077
6.8*	0.077*
7	0.076
7.2	0.076
7.4	0.075
7.6	0.075
7.8	0.074
8	0.073
8.2	0.072
8.4	0.071
8.6	0.069
8.8	0.068
9	0.066
9.2	0.064
9.4	0.062
9.6	0.060
9.8	0.058
10	0.056

To test hypotheses H_4, which address the type of sport (individual sport or team sport) the athlete plays and the effect his or her endorsement has on firm value, I estimate the following model

$$CAR_i = \alpha_i + \beta_{1i}\, Team_i + \beta_{2i} \ln(firm\ size)_i + \ \varepsilon_i \qquad (4.8)$$

Where *team* is a dummy variable that takes the value of 1 for team sports and zero for individual sports.

I find support for H_4. As table 15 shows, *Team* is negative and t-value is -6.64 > 2.33 critical value so it is significant at 5%. There is significantly different effect between team and individual sports endorsements on firm value meaning if the endorsement is by an athlete who plays a team sport, then the abnormal returns of the firm will go down by 0.0075. Thus, the endorsement of a team sport athlete has a lower impact on firm value compared to individual sport athlete.

Table 15: Results for Hypotheses H_4

Number of obs =	130
R-squared =	0.0027
Root MSE =	0.08666

CAR	Coef.	Robust Std. Err.	t	p>t	[95% Conf.	Interval]
Team	-0.0075028	0.0011261	-6.66	0.000	-0.0218116	0.0068059
Log (revenue)	-0.0015967	-0.0008182	-1.95	0.053	-0.0119928	0.0087994
Constant	0.0466869	0.0235709	1.98	0.049	-0.2528097	0.3461835

In hypotheses H_5, I argued that female athletes' endorsement announcements will have a higher impact on firm value than male athlete endorsement announcements. To test this hypothesis, I estimate the following model

$$CAR_i = \alpha_i + \beta_{1i}\, Male_i + \beta_{2i}\ln(firm\ size)_i + \varepsilon_i \quad (4.9)$$

where *male* is a dummy variable that takes the value of 1 for male athletes and zero for female athletes.

As Table 16 shows, *Male* is negative and t-value is -2.29 > 1.96 critical value so it is significant at 5%, meaning that there is a significantly different effect between Male and female endorsements on firm value. Endorsement of a female athlete has higher impact on firm value compared to a male athlete, thus I find support for H_5.

Table 16: Results for Hypotheses H_5

Number of obs	= 130
R-squared	= 0.0068
Root MSE	= 0.08745

CAR	Coef.	Robust Std. Err.	t	p>t	[95% Conf.	Interval]
Male	-0.0148488	0.0064904	-2.29	0.023	-0.0973175	0.0676198
Log (revenue)	-0.0012972	0.0069129	-0.19	0.849	-0.0891338	0.0865395
Constant	0.0462612	0.1653336	0.28	0.779	-2.054502	2.147024

In hypothesis H_6, I stated that the younger the athlete is, the stronger the impact of the athlete's endorsement announcement on firm value. Additionally, I was interested in determining if the impact of an athlete's age on firm value is different for male and female athletes. To test for hypothesis H_6, and also for the interaction between age and gender of the athlete, I included an interaction term between age and gender of the athlete and estimated the following model

$$CAR_i = \alpha_i + \beta_{1i}\, Male_i + \beta_{2i}\, Age_i + \beta_{3i} Male * Age_i + \beta_{4i} \ln(firm\ size)_i + \varepsilon_i \quad (4.11)$$

where *age* is how old the athlete is and *Male*Age* is an interaction term between Gender of an Athlete and his/her age.

Table 17 displays the result for hypothesis H_6. *Age* is negative and t-value is -6.17 > 2.33 critical value so it is significant at 5%, meaning that if age goes up by one unit, then the abnormal return goes down by 0.00353. Thus, the younger an athlete who received an endorsement is the higher is the impact on the firm value. Hypothesis H_6 is supported.

Additionally, as presented in table 17, the interaction term between *Male* and *Age* is positive and t-value is 3.52 > 2.33 critical value so it is significant at 5%.. This means that younger female athletes have higher impact on firm value than younger male athletes i.e. coefficient for age becomes -0.00044 (-0.00353 + 0.00309) for male athletes and -0.00353 for female athletes, referring to a larger impact of age on firm value for female athletes compared to male athletes.

Table 17: Results for Hypothesis H_6 And Interaction Between Gender and Age

Number of obs =	74
R-squared =	0.0228
Root MSE =	0.08322

CAR	Coef.	Robust Std. Err.	t	p>t	[95% Conf.	Interval]
Male	-0.1025416	0.0395935	-2.59	0.011	-0.6056245	-0.4005413
Age	-0.0035329	0.0005722	-6.17	0.000	-0.0108028	-0.003737
Male_age	0.0030923	0.0008796	3.52	0.000	-0.0080842	0.0142687
Log (revenue)	0.0005043	0.0098885	0.05	0.960	-0.1251416	0.1261503
Constant	0.0938472	0.2436993	0.39	0.697	-3.002646	3.19034

In hypothesis H_7, I argued that endorsements of sports-related products have more impact on firm value than endorsements of non-sports-related products. To test this hypothesis, I estimate the following model

$$CAR_i = \alpha_i + \beta_{1i}\, Sports_i + \beta_{2i}\ln(firm\ size)_i + \ \varepsilon_i \qquad (4.12)$$

where *Sports* is a dummy variable that takes the value of 1 if product type is sports and zero for non-sport product types.

As table 18 reveals, *Sports* is positive and that t-value is 3.76 > 2.33 critical value so it is significant at least at 5%, meaning that the impact on firm value is much higher if product type is sports-related compared to non-sport-related product type, thus lending support for hypothesis H_7.

Table 18: Results for Hypothesis H_7

Number of obs	130
R-squared =	0.0197
Root MSE =	0.08688

CAR	Coef.	Robust Std. Err.	t	p>t	[95% Conf.	Interval]
Sports	0.0250937	0.006669	3.76	0.000	-0.0596444	0.1098319
Log (revenue)	0.0001192	0.0074667	0.02	0.984	-0.0947541	0.0949924
Constant	-0.012228	0.1744395	-0.07	0.944	-2.228692	2.204236

Chapter V

SUMMARY, IMPLICATIONS, LIMITATIONS, AND FUTURE RESEARCH

5.1 Summary

This research investigates the financial market response to a popular and costly marketing investment strategy. The marketing literature has addressed the use of celebrity endorsements and how consumers and investors react to this marketing strategy. However, the literature has revealed mixed findings as to the effectiveness of this popular marketing strategy. I aim to contribute to the literature by examining how athlete endorsements impact firm value. My focus is on the specific role that the three aspects, i.e. the endorser, the product, and the firm have in determining the impact of the endorsement announcement on firm value.

I find that the stock market, on average, rewards firms that engage in endorsement deals. For robustness, I examined a larger window (21-day) and a smaller window (3-day) and found both results to be positive and in favor of a strong market reaction to the endorsements. Likewise, the market seems to give higher rewards to firms who associate their brands with endorsers of a higher stature. This link could be explained by the fact that usually such endorsers bring more media attention to the brand, thereby, resulting in a relatively wider exposure for their products. This connection refutes the notion that celebrities with higher stature carry with them higher risk because any scandal surrounding such celebrities would be magnified.

Additionally, I examined how the number of endorsements the athlete has at the time of new endorsement impacts the investors' reactions to endorsement announcements. This aspect of the impact of the amount of endorsement deals accepted by an athlete on investors is an important issue that has not received any critical attention. My study concludes that that investors value endorsements of athletes with more endorsements. Moreover, further examination shows that this increase in firm value is at a decreasing rate before eventually dropping as the number of endorsements increase. This finding indicates that investors value endorsements with athletes who are successful enough to already have endorsed other products before, but endorsements by athletes who already have a large number of endorsements are not viewed favorably. This could be due to the reason that too many endorsements by a single athlete could tarnish his or her credibility and trustworthiness.

Another element that is largely overlooked in the literature is the disparity between the impact of different types of sports in athlete endorsement announcements. Athletes either play an individual sport or belong to a team of players. Evident from the research I've provided, investors react stronger to endorsements of athletes from individual sports, indicating that investors favor athletes with no affiliation to a team and other team members. This revelation may imply that investors find athletes in individual sports to be more manageable and their influence more predictable than team athletes. I find that investors react stronger to an endorsement by a female athlete than one by a male athlete. This is noteworthy, since firms overwhelmingly sponsor male sports in

much higher numbers and with much larger sponsorship deals. This is due to the lower viewership and attendance of female sports. An explanation of this finding might be that investors see a market flooded with male endorsers, thus a female endorsement would be more effective than a male endorsement. Additionally, by enlisting a female athlete endorser, firms indicate that they are broadening their market segment to include female consumers.

Another contribution of this research is in its focus on a variable that is largely unexplored in the literature, which is age. I find that the financial market reacts more positively to endorsement deals of younger athletes than older athletes. An explanation for this finding is that younger endorsers are more relatable to a younger audience, whom are influenced by endorsements more than older audiences, which is a conclusion found in a study by media agency MEC (2009). So investors might be speculating that such a marketing strategy is more effective on younger consumers than older consumers. Another notable finding is that younger females endorsers have a larger impact on firm value than younger male endorsers. This finding is consistent with the previous finding that female endorsers have a stronger positive impact on firm value than their male counterparts.

Finally, I find that the endorsement of sport-related products have a larger positive impact on firm value than the endorsement of products unrelated to sports. This goes in line with the match-up hypothesis, which argues that congruency between the endorser and the endorsed product will have a larger impact on consumers than an

endorsement where there is no congruency. As with any other professionals, athletes are viewed as experts in their profession. So when they endorse products related to their profession their endorsement is viewed as more credible and trustworthy than if they endorsed products they are viewed to not have an expert opinion on.

5.2 Implications

5.2.1 Theoretical Implications

Product endorsement is an important marketing tool, which can be used to increase sales, increase product recall, or increase shareholder wealth. No matter what the purpose is, one thing is for sure, athlete endorsements can be extremely costly. This makes it all the more important to determine whether such a costly marketing strategy is worth the money being spent. Thus, marketing practitioners must explain the value behind their marketing and endorsement activities. Due to the importance of communicating the value of marketing activities to the firm's top management, there's a need for the integration of marketing metrics and financial measures (Doyle 2000; Rust et al. 2004). While there is a need for more research on marketing decisions and their financial consequences this research is a step in that direction.

The findings of this research will contribute to the literature on the effectiveness of celebrity endorsements, in general, and athlete endorsements in particular. This research will help in understanding what impact the number and type of endorsements an athlete has on the effect of the endorsement on firm value, consequently opening the way

for future studies into the effect of the number of endorsements by celebrities, in general, on firm value.

5.2.2 Managerial Implications

The results of the research questions presented in this research can be useful for marketing managers. As athlete endorsements are expensive, some athletes have a higher price tag than others. The difference mostly depends on the stature of the athlete. Thus, it would be advantageous for marketers to know whether they can get results that are impactful with athletes who would cost less to sign. Also, when attempting to embark on the complex journey of choosing a celebrity to represent their brand, knowing what characteristics to look for in an endorser would put the practitioners in a competitive advantage.

5.3 Limitations and Future Research

Event studies have several limitations. First, event studies are limited to publicly traded firms. That is, the findings are not generalizable to all firms. A solution to this issue is to expand the sample to include accounting measures of performance (i.e., ROI, sales, revenue, etc.). Second, most events don't have a true event date, which makes it very difficult to know exactly when the financial market incorporated such information into the stock price. One possible solution to this issue is to expand the event window,

which is the case in this research. Third, stock prices are noisy. Thus, for an event's effect to be truly isolated, it has to be significant enough to trigger a reaction from investors.

Future research could include the use of surveys of investment analysts to assess how investors react to various firm announcements and how they use such information in their assessment of net value. Future research could also explore if including the size of the endorsement in the announcement impacts how the financial market reacts. Celebrity endorsements are increasingly becoming more costly. It would be useful to learn if including such information will benefit the firm financially.

REFERENCES

Aaker, David and Jacobson, Robert (1994), "The Financial Information Content of Perceived Quality," *Journal of Marketing Research*, 31 (May), 191-201.

Adelphi University, (2014), "A look at male and female professional athlete salaries," (accessed January 10, 2017), [available at: https://sportsmanagement.adelphi.edu/resources/infographics/a-look-at-male-and-female-professional-athlete-salaries/].

Agrawal, Jagdish and Kamakura, Wagner (1995), "The Economic Worth of Celebrity Endorsers: An Event Study Analysis," *Journal of Marketing*, 59 (3), 56-62.

Albert, Noel, Ambroise, Laure, and Valette-Florence, Pierre, (2017). "Consumer, brand, celebrity: Which congruency produces effective celebrity endorsements?" *Journal of Business Research.*

Arzac, Enrique (1986), "Do Your Business Units Create Shareholder Value?" *Harvard Business Review*, 64 (1), 121-126.

Boyd, Thomas and Shank, Mathew (2004), "Athletes as product endorsers: The effect of gender and product relatedness." *Sport Marketing Quarterly*, 13(2), 82-93

Burnett, John, Menon, Anil and Smart, Denise (1993), "Sport Marketing: A New Ball Game With New Rules," *Journal of Advertising Research*, 33 (5), 21-36

Chaney, Paul, Devinney, Timothy, and Winer, Russell (1991), "The Impact of New Product Introductions on the Market Value of Firms," *The Journal of Business*, 64 (4), 573-610.

Chen, Yubo, Ganesan, Shankar, Liu, Yong (2009), "Does a Firm's Product-Recall Strategy Affect Its Financial Value? An Examination of Strategic Alternatives during Product-Harm Crises," *Journal of Marketing*, 73, 6, 214-226.

Choi, Sejung and Rifon, Nora (2007). "Who is the celebrity in advertising? Understanding dimensions of celebrity images." *Journal of Popular Culture*, 40(2), 304–325.

Clark, John, Cornwell, Bettina, and Pruitt, Stephen (2009). "The Impact of Title Event Sponsorship Announcements on Shareholder Wealth." *Marketing Letters*, 20(2), 169-182

Cornwell, Bettina, Pruitt, Stephen, and Van Ness, Robert (2001). "The Value of Winning in Motorsports: Sponsorship-linked Marketing." *Journal of Advertising Research*

Creswell, Julie (2008), "Nothing Sells Like Celebrity," (accessed November 15 2016), [available at: http://www.nytimes.com/2008/06/22/business/media/22celeb.html].

Dann, Larry, Mayers, David, and Raab, Robert (1977), "Trading rules, large blocks, and the speed of price adjustment," *Journal of Financial Economics* 4, 3-22.

Day, George and Fahey, Liam (1990), "Putting Strategy into Shareholder Value Analysis," *Harvard Business Review*, 68(2), 156-162.

Doyle, Peter (2000), "Value-Based Marketing." *New York: John Wiley & Sons*.

Elberse, Anita (2007), "The Power of Stars: Do Star Actors Drive the Success of Movies?" *Journal of Marketing*, 71(4), 102–120.

Elberse, Anita and Verleun, Jeroen. (2012). "The Economic Value of Celebrity Endorsements". *Journal of Advertising Research*, 52 (2), 149-165.

Erdogan, B. Zafer (1999), "Celebrity Endorsement: A Literature Review," *Journal of Marketing Management*, 15(4), 291-314.

Erdogan, B. Zafer, Baker, Michael and Tagg, Stephen (2001), "Selecting Celebrity Endorsers: The Practitioner's Perspective," *Journal of Advertising Research*, 41(3), 39-48.

Fama, Eugene (1970), "Efficient Capital Markets: A Review of Theory and Empirical Work," *Journal of Finance*, 25 (2), 383–417.

Ferro, Shane (2015), "Here's why it's fair that female athletes make less than men," (accessed January 9, 2017), [available at: http://www.businessinsider.com/womens-small-soccer-salaries-are-fair-2015-7].

Fizel, John, McNeil, Chris, and Smaby, Timothy (2008), "Athlete Endorsement Contracts: The Impact of Conventional Stars," *International Advances in Economic Research*, 14(2), 247-256.

Farrell, Kathleen, Karels, Gordan, Montfort, Kenneth, and McClatchey, Christine (2000), "Celebrity Performance and Endorsement Value: The Case of Tiger Woods". *Managerial Finance*, 26 (7), 1-15.

Forbes magazine, (2012), "The World's 100 Highest-Paid Athletes 2012" (accessed June 7, 2017), [available at: http://www.forbes.com/pictures/ehkm45efkfl/the-worlds-100-highest-paid-athletes/ - 59c4e6fc3430].

Friedman, Hershey and Friedman, Linda (1979), "Endorser Effectiveness by Product Type," *Journal of Advertising Research*, 19 (5), 63-71.

Geyskens, Inge, Gielens, Katrijn, and Dekimpe, Marnik (2002), "The Market Valuation of Internet Channel Additions," *Journal of Marketing*, 66 (April), 102–119.

Horsky, Dan and Swyngedouw, Partick (1987), "Does It Pay to Change Your Company's Name? A Stock Market Perspective," *Marketing Science*, 6 (4), 320-35.

Jarrell, Gregg, and Peltzman, Sam 1985. "The impact of product recalls on the wealth of sellers." *Journal of Political Economy*, 93: 512–536.

Johnston, Margaret (2007). "A review of the application of event studies in marketing." *Academy of Marketing Science Review*, 11(4), 1–31.

Kamins, Michael (1990), "An Investigation into the 'Match-Up' Hypothesis in Celebrity Advertising: When Beauty Is Only Skin Deep," *Journal of Advertising*, 19 (1), 4-13

Kamins, Michael, Brand, Meribeth, Hoeke, Stuart, and Moe, John (1989), "Two-Sided Versus One-Sided Celebrity Endorsements: The Impact on Advertising Effectiveness and Credibility," *Journal of advertising*, 18 (2), 4-10.

Karniouchina, Ekaterina, Uslay Can, and Grigori, Erenburg (2011) "Do marketing media have life cycles? The case of placement in movies." *Journal of Marketing* 75(May):27–48.

Kish, Matthew (2014), "Would Under Armour Need To Disclose a $325 Million Endorsement Deal with Kevin Durant?" (accessed October 7, 2017), [available at: http://www.bizjournals.com/portland/blog/threads_and_laces/2014/08/under-armour-disclose-325-million-kevin-durant-dea.html].

Koernig, Stephen and Boyd, Thomas (2009). "To catch a tiger or let him go: The match-up effect and athlete endorsers for sport and non-sport brands." *Sport Marketing Quarterly*, 18(1), 15-37

Lane, Vicki and Robert Jacobson (1995), "Stock Market Reactions to Brand Extension Announcements: The Effects of Brand Attitude and Familiarity," *Journal of Marketing*, 59 (1), 63-77.

Lear, Karen, Runyan, Rodney, and Whitaker, William (2009). "Sports celebrity endorsements in retail products advertising." *International Journal of Retail & Distribution Management*, 37(4), 308–321

Louie, Therese, Kulik, Robert, and Jacabson, Robert (2001), "When Bad Things Happen to the Endorsers of Good Products," *Marketing Letters* 12 (1), 13-23.

MacInnis, Deborah (2011) "A Framework for Conceptual Contributions in Marketing", *Journal of Marketing* 75(4): 136–54.

Martin, James (1996) "Is the athlete's sport important when picking an athlete to endorse a nonsport product?" *Journal of Consumer Marketing*, Vol. 13 Issue: 6, pp.28-43.

Mathur, Lynette, Mathur, Ike, and Rangan, Nanda (1997), "The Wealth Effects Associated with a Celebrity Endorser: The Michael Jordan Phenomenon," *Journal of Advertising Research,* 37 (3), 67-74.

McCormick, Karla, (2016), "Celebrity endorsements: influence of a product-endorser match on Millennial attitudes and purchase intentions". *Journal of retailing and consumer services*

.

McCracken, Grant (1989), "Who is the Celebrity Endorser?" *The Journal of Consumer Research,* 16(3), 310-321.

McWilliams, Abagail and Siegel, Donald (1997), "Event Studies in Management Research: Theoretical and Empirical Issues," *Academy of Management Journal*, 40 (2), 626-57.

Minter, Harriet, (2015), "It's not just sports, all women's initiatives lack corporate sponsorship," (accessed December 1, 2017), [available at: https://www.theguardian.com/women-in-leadership/2015/jul/01/its-not-just-sports-all-womens-initiatives-lack-corporate-sponsorship].

Mowen, John, and Brown, Stephen (1981), "On Explaining and Predicting the Effectiveness of Celebrity Endorsers. In Monroe, K. W. (Ed.) *Advances in Consumer Research.* Ed., 8, 437-441.

Ohanian, Roobina (1990), "Construction and Validation of a Scale to Measure Celebrity Endorser's Perceived Expertise, Trustworthiness and Attractiveness," *Journal of Advertising*, 19(3), 39-52.

Osinga Ernst C., Peter S.H. Leeflang, Shuba Srinivasan and Jaap E. Wieringa (2010), "Why Do Firms Invest in Consumer Advertising with Limited Sales Response? A Shareholder Perspective," *Journal of Marketing*

Petty, Richard, Cacioppo, John, and Schumann, David (1983), "Central and Peripheral Routes to Advertising Effectiveness: The Moderating Role of Involvement," *Journal of Consumer Research*, 10 (2), 135-146.

Pruitt, Stephen, Cornwell, Bettina, and Clark, John (2004). "The NASCAR Phenomenon: Auto Racing Sponsorships and Shareholder Wealth." *Journal of Advertising Research* 44 (3): 281-296.

Rust, Roland T., Tim Ambler, Gregory S. Carpenter, V. Kumar, and Rajendra K. Srivastava (2004), "Measuring Marketing Productivity: Current Knowledge and Future Directions," *Journal of Marketing*, 68 (October), 76–89.

Shuart, Joshua (2007), "Heroes In Sport: Assessing Celebrity Endorser Effectiveness," *International Journal of Sports Marketing and Sponsorship*, 8(2), 11-25.

Sloan, P., & Freeman, L. (1988), "Advertisers Willing to Share Their Stars. *Advertising Age*," (March 21).

Sorescu, Alina, Shankar, Venkatesh, and Kushwaha, Tarun (2007), "New Product Preannouncements and Shareholder Value: Don't Make Promises You Can't Keep," *Journal of Marketing Research*, 44(3), 468-489.

Sportspro Media (2017), "50 most marketable athletes" (accessed September 4, 2017), [available at: http://www.sportspromedia.com/].

Srinivasan, Shuba and D.M. Hanssens (2009), "Marketing and Firm Value: Metrics, Methods, Findings, and Future Directions," *Journal of Marketing Research*, 46 (June), 293–312.

Srivastava, Rajecdra K., Tasadduq A., Shervani, and Liam Fahey (1998), "Market-based Assets and Shareholder Value: A Framework for Analysis," *Journal of Marketing*, 62 (1), 2-18.

Stock, Kyle (2014), "Jay-Z Gives Nike a Deadline for Kevin Durant" (accessed October 10 2015), [available at: https://www.bloomberg.com/news/articles/2014-08-22/jay-z-gives-nike-a-deadline-for-kevin-durant]

Thwaites, D (1995), "Professional Football Sponsorship - Profitable or Profligate?" *International Journal of Advertising*, 14 (2), 149-164.

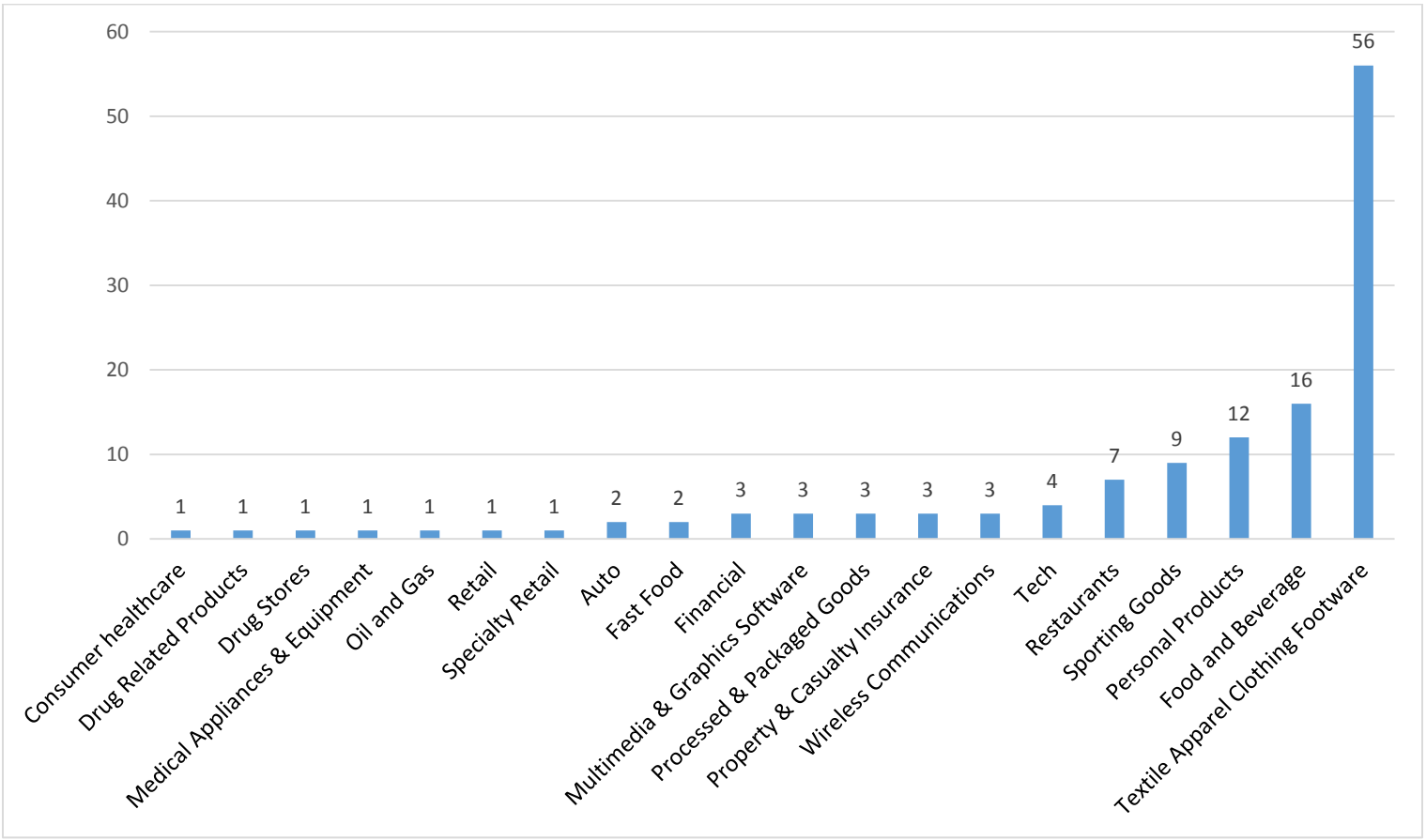
Tripp, C., T. D. Jensen, and L. Carlson. (1994), "The effects of Multiple Product Endorsements by Celebrities' on Consumers' Attitudes and Intentions." *Journal of Consumer Research*, 20(4), 535-547.

Woods, Laura (2016) “5 Olympic Athletes With Insanely Big Endorsement Deals (accessed August 9, 2017) [available at: http://time.com/money/4459824/2016-rio-olympics-endorsement-deals/].

WPP (2009) “Celebrity endorsers have more impact on younger consumers” (accessed September 08, 2017) [available at: http://www.wpp.com/wpp/press/2009/nov/17/celebrity-endorsers-have-more-impact-on-younger/#].

Xiong, Guiyang and Bharadwaj, Sundar (2013), “Asymmetric Roles of Advertising and Marketing Capability in Financial Returns to News: Turning Bad into Good and Good into Great,” *Journal of Marketing Research*, 50 (December), 706–24.

Appendix A: Industry Frequency Distribution of Endorsements



Appendix B: Summary of all hypotheses - CAR as dependent variable

CAR Regressions

	(1) Rank	(2) Endors _sq	(3) Team	(4) Gender	(5) Age_gender	(6) Sports	(7) All
Rank	0.00031**						0.00089***
	(2.14)						(159.07)
No. of endorsement							0.01956
							(1.36)
No. of endorsement 2		0.02336***					
		(3.04)					
No. of endorsement sq2		-0.00178***					
		(-6.64)					
Rank2		0.00111					
		(1.42)					
Team			-0.00750***				-0.00438
			(-6.66)				(-1.22)
Male				-0.01485**	-0.10254***		-0.09650*
				(-2.29)	(-2.59)		(-1.84)
Age					-0.00353***		-0.00238***
					(-6.17)		(-6.98)
Male_age					0.00309***		0.00248*
					(3.52)		(1.66)
Sports						0.02509***	0.03098***
						(3.76)	(2.66)
No. of endorsement_sq							-0.00129
							(-0.82)
Log (revenue)	0.00001	-0.00141	-0.00160	-0.00130	0.00050	0.00012	0.00058
	(0.00)	(-0.91)	(-1.95)	(-0.19)	(0.05)	(0.02)	(0.05)
Constant	-0.00951	-0.04917***	0.04669	0.04626	0.09385	-0.01223	-0.01557
	(-0.04)	(-12.28)	(1.98)	(0.28)	(0.39)	(-0.07)	(-0.06)
N	74	130	130	130	74	130	74
R^2	0.005	0.017	0.003	0.007	0.023	0.020	0.072

t statistics in parentheses
* 1.645<t<1.96 ** 1.96< t < 2.33, *** t > 2.33

Appendix C: Correlations

	log_rev	no_endorsement	rank	team	male	age	sports
log_rev	1						
no_endorsement	0.1721*	1					
rank	-0.0349	-0.7889*	1				
team	-0.0813*	-0.0452	0.1798*	1			
male	0.0380*	0.2221*	-0.1212*	0.5139*	1		
age	0.0187	0.029	-0.1055*	-0.1403*	-0.0466	1	
sports	-0.2351*	-0.1610*	0.2122*	0.2191*	0.1468*	-0.1279*	1

* indicates 5% significance

Appendix D: Firms with Athlete Endorsements in the Sample

Company	Frequency	Company	Frequency	Company	Frequency
Under Armour Inc.	21	Berkshire Hathaway Inc.	2	GNC Holdings Inc.	1
Nike Inc.	19	General Motors Company	2	Wal-Mart Stores, Inc.	1
Pepsico Inc.	9	Sprint	1	Apple Inc	1
The Procter & Gamble Co.	9	General Mills, Inc.	1	Exxon Mobil Corp	1
Callaway Golf Co	9	Abbott Laboratories	1	Workday, Inc.	1
Skechers U.S.A., Inc.	9	Usana Health Sciences Inc.	1	Avon Products Inc.	1
Dunkin Brands Group Inc.	5	AT&T Inc.	1	JP Morgan Chase	1
Ralph Lauren Corporation	4	American Express Company	1	Intel Corporation	1
Coca Cola Co	4	Staples Inc.	1	Cheesecake Factory Inc	1
Electronic Arts Inc.	3	Sonic Corp.	1	Johnson & Johnson	1

Kellogg Company	2	Papa John’s Intl Inc.	1	Allstate Corp	1
VF Corporation	2	McDonald's	1	Jamba Inc.	1
Monster Beverage Co.	2	iGo	1	Visa Inc.	1
Herbalife LTD	2	Iconix Brand Group Inc	1	T-Mobile US, Inc.	1
				Total	130