

WHEN ARE SUPER BOWL ADVERTISINGS SUPER? AN EMPIRICAL ANALYSIS OF THE
ECONOMIC IMPACT OF SUPER BOWL ADVERTISING

by

JIN-WOO KIM

Presented to the Faculty of the Graduate School of
The University of Texas at Arlington in Partial Fulfillment
of the Requirements
for the Degree of

DOCTOR OF PHILOSOPHY

THE UNIVERSITY OF TEXAS AT ARLINGTON

August 2011

Copyright © by JIN-WOO KIM 2011

All Rights Reserved

ACKNOWLEDGEMENTS

I first and foremost thank God for all the blessings.

I would like to thank my committee chair, Dr. Traci Freling for her great support and encouragement throughout the PhD program. She always showed me her positive feedback to my research and dissertation. Her kind words and prayer made it possible for me to accomplish fruitful performance.

I would also like to express my great appreciation to my other committee members: Dr. Douglas Grisaffe, Dr. Zhiyong Yang, Dr. Michael Richarme, and Dr. Edmund Prater for their valuable feedback and assistance. I have been really blessed to have them as my committee members, and it was such an honor to have had the chance to know them all. Thanks also go to our Marketing department as a whole who have been very supportive and helpful throughout.

Special thanks go to Dr. Chonko. He is an advisor, a mentor, and a teacher to me. I cannot measure his help and support in words. Whenever I had problems, he was there to guide me and give me hope in solving them.

I want to express my sincere thanks to my family: my wife So-Young, my daughter Minju, and my son Sean. They have been an energy source and support to me throughout. My dear parents prayed for me each and every day and I cannot find a good word expressing their love, support and affection. My parents-in-law also supported me wholeheartedly with their pray.

June 28, 2011

ABSTRACT

WHEN ARE SUPER BOWL ADVERTISINGS SUPER? AN EMPIRICAL ANALYSIS OF THE
ECONOMIC IMPACT OF SUPER BOWL ADVERTISING

Jin-Woo Kim, PhD

The University of Texas at Arlington, 2011

Supervising Professor: Traci H. Freling

This dissertation investigates the relationship between Super Bowl advertising and advertisers' market valuation. The first essay identifies several factors that influence the financial rewards of this media-placement strategy. Specifically, I examine the impact of each ad's featured characters and appeals, and the product benefits promoted, on abnormal stock returns for sponsoring companies that appear in Super Bowl ads. Event study results show that Super Bowl advertising from 2004 to 2008 is positively related to abnormal stock returns for advertisers. Cross-sectional regression analyses indicate that market value of Super Bowl advertisers is positively related to likeable characters, emotional appeals, and approach messaging. The combined use of likeable ad characters with either emotional ad appeals or approach messages is also positively associated with firm valuation. The interplay between *ad characters*, *emotional appeals*, and the *approach/avoidance messaging* in a given Super Bowl ad determines its relative effectiveness. The most successful Super Bowl ads appear to be approach-oriented with likeable ad characters, or emotionally-based with likeable ad characters. Leaving out any of these key ingredients can result in a less positive impact. In fact, certain

incongruous combinations (e.g., ads featuring rational appeals with likeable characters, or likeable characters with avoidance messaging) may negatively affect the recipe

The second essay examines the relationship between advertising efficiency and the market valuation of Super Bowl advertisers. First, stock market reactions to Super Bowl advertising are tracked. Event study results show that Super Bowl advertising from 2005 to 2010 is positively related to abnormal stock returns for advertisers. Next, the impact of advertising efficiency on the financial rewards of this media-placement strategy is examined. Data Envelopment Analysis (DEA) is used to assess advertising executional efficiency. Four advertising executional factors were considered as DEA inputs: (1) advertising expense, (2) advertising length (seconds), (3) frequency (count) and, (4) number of brands promoted. Two types of advertising effectiveness were included as DEA outputs: (1) Ad Meter ratings; and (2) Nielsen ratings. Cross-sectional regression analyses indicate that advertising efficiency is positively associated with cumulative abnormal stock returns of Super Bowl advertisers. These findings suggest that efficient conversion of advertising inputs to advertising outputs matters in generating positive abnormal returns. Along with advertising efficiency, brand reputation is found to have positive impact on Super Bowl advertisers' financial performance. A negative interaction between advertising efficiency and brand reputation is observed contrary to expectation.

Theoretically, this dissertation extends the advertising-finance interface by explaining the relationship between Super Bowl advertising and advertisers' performance. While prior research has explored annual sales, profits, Tobin's Q, and analyst recommendation as indicators of firms' financial performance of advertising, the current study is the first to link advertising characteristics and efficiency to short term abnormal stock returns.

From a practitioner's perspective, advertisers also should think twice about allocating so much money for a single advertising exposure. Simply pouring the large amount of the advertising expenditure cannot guarantee big financial reward. Therefore, advertisers must

consider how to efficiently convert advertising effort and resource to desirable advertising outcome. Poor efficiency in generating positive advertising outcomes discourages most advertisers from being rewarded by stock market.

From an investor's perspective, individuals attempt to obtain accurate and appropriate information when making investment decisions, eventually resulting in a sound investment. However, stock market movement does not always explain the dynamics of shareholder valuations. Given this, considering marketing and financial information simultaneously investors can assort when they make investment decisions. Investors' decision making should be based not only on prior stock market performance but also on a company's advertising characteristics and efficiency. In this sense, information about the marketing-finance interface offers new investment criteria, leading to more deliberate investment.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	iii
ABSTRACT	iv
LIST OF ILLUSTRATIONS.....	x
LIST OF TABLES	xi
Chapter	Page
1. INTRODUCTION TO THE DISSERTATION.....	1
2. ESSAY 1: ADVERTISING CHARACTERISTICS AND THEIR INFLUENCES ON FINANCIAL PERFORMANCE.....	4
2.1 Introduction.....	4
2.2 Conceptual Development.....	5
2.2.1 Advertising Characters Featured	8
2.2.2 Advertising Appeals Used	9
2.2.3 Product Benefits Promoted	11
2.2.4 The Congruency of Ads Character, Appeal and Messaging.....	11
2.3 Method	14
2.3.1 Content Analysis and Ad Coding	14
2.3.2 Event Study	16
2.3.3 Variable Definition	16
2.3.3.1 Dependent Variable	16
2.3.3.2 Independent Variables	17
2.3.3.3 Control Variables.....	19
2.4 Results	20
2.4.1 Event Study Result.....	20

2.4.2 Cross-Sectional Regression.....	22
2.5 Discussion and Implications	25
2.5.1 Discussion	25
2.5.2 Implications	26
3. ESSAY 2: ADVERTISING EFFICIENCY AND ITS IMPACT ON FINANCIAL PERFORMANCE.....	27
3.1 Introduction.....	27
3.2 Conceptual Development.....	29
3.2.1 Advertising Efficiency	30
3.2.2 Brand Reputation	31
3.2.3 Interaction between Advertising Efficiency and Brand Reputation	33
3.3 Methodology and Data	33
3.3.1 Data Envelopment Analysis (DEA)	34
3.3.2 Event Study	35
3.3.3 Data.....	35
3.4 Results and Discussion.....	37
3.4.1 DEA Results	37
3.4.2 Event Study Result.....	37
3.4.3 Cross-Sectional Analysis Result	42
3.5 Summary and Implications.....	45
3.5.1 Summary.....	45
3.5.2 Contribution and Implications.....	47
4. CONCLUSION TO THE DISSERTATION.....	49
4.1 Summary	49
4.2 Future Research.....	50

APPENDIX

A. DETAILS ON EVENT STUDY52

B. DETAILS ON DATA ENVELOPMENT ANALYSIS.....54

REFERENCES.....57

BIOGRAPHICAL INFORMATION73

LIST OF ILLUSTRATIONS

Figure	Page
1.1 Research Gap and Importance	3
2.1 Research Framework for the First Essay	8
3.1 Research Framework for the Second Essay	30

LIST OF TABLES

Table	Page
2.1 Coding Scheme and Summary Statistics.....	15
2.2 Variable Definition and Descriptive Statistics.....	18
2.3 Daily Average Abnormal Return of Super Bowl Advertisers (2004-2008)	20
2.4 CAARs for Super Bowl Advertisers (2004-2008)	21
2.5 Cross Sectional Regression Results (DV=SCAR in percentage over days -3 to 1)	23
3.1 DEA Inputs and Outputs	35
3.2 Variable Operationalization	36
3.3 Descriptive Statistics and Correlations.....	38
3.4 Advertising Efficiency Score.....	39
3.5 CAARs for Super Bowl Advertisers (2005-2010)	41
3.6 Cross Sectional Regression Results (DV=SCAR in percentage over days 1 to 1)	43
3.7 Cross Sectional Regression Results (IV=Advertising Efficiency Level)	46

CHAPTER 1

INTRODUCTION

In late 2006 Under Armour initiated an advertising campaign called “The New Prototype” to help launch its Under Wear Performance Footwear line. This thirteen-month endeavor resulted in a dark and intense 60-second television ad set against a bleak, urban backdrop, featuring nearly two dozen high profile athletes along with other typical consumers, all wearing Under Armour shoes while engaging in grueling workouts. The spot initially aired during the 2008 Super Bowl, costing Under Armour approximately \$5.4 million for media expenses and consuming almost one-third of the company’s annual advertising budget. Consumer attitudes toward the ad were extremely unfavorable, landing the spot in the worst five of all ads aired during the 2008 Super Bowl on *USAToday’s* Ad Meter rankings (Battista, 2009). The ad also failed to impress investors—Under Armour’s stock fell more than 35% following the broadcast, reducing market capitalization by more than \$700 million (Mullman, 2009). Under Armour’s experience has led many to ponder the wisdom of investing so much money to air a single ad, instead of buying multiple ads in different media outlets that would provide several weeks or even months of exposure. This example underscores a question raised by financial analysts and advertising pundits alike: Is Super Bowl advertising worth the expense?

Because of its popularity, the Super Bowl is routinely among the top rated television programs, with about half of Americans watching the game and seeing the embedded ads (Nielsen, 2009). Moreover research suggests that Super Bowl viewers watch the ads as much as—if not more than—the game itself (Beasley, Shank, and Ball, 1998). In 2010, ads appearing in the Super Bowl were seen in over 200 countries, and by more than 100 million viewers in the U.S. alone (Rash, 2010). However, this exposure comes with a steep price tag: last year each 30-second Super Bowl spot cost between \$2.5 million and \$3 million. Naturally, Super Bowl

advertisers count on media coverage and word-of-mouth communications surrounding their advertisements and products to provide return on investment that extends well beyond the game's viewership to justify purchasing the most expensive advertising real estate of the year (Yelkur, Tomkovick, and Traczyk, 2004). However, such a substantial advertising investment arguably creates expectations of more favorable consumer responses and greater financial rewards. Motivated by this gap, this dissertation investigates the relationship between Super Bowl advertising and firms' financial performance by answering these two basic questions.

1. Do all Super Bowl advertisers reap the benefits associated with Super Bowl advertising?
2. Which firms benefit most from Super Bowl advertising? What makes the differences?

This dissertation links advertising characteristics and efficiency to financial performance (See Figure 1.1). The first essay identifies several advertising factors that influence the financial rewards of this media-placement strategy. Specifically, I examine the impact of each ad's featured characters and appeals, and the product benefits promoted, on abnormal stock returns for sponsoring companies that appear in Super Bowl ads. Event study results show that Super Bowl advertising from 2004 to 2008 is positively related to abnormal stock returns for advertisers. Cross-sectional regression analyses indicate that market value of Super Bowl advertisers is positively related to likeable characters, emotional appeals, and approach messaging. The combined use of likeable ad characters with either emotional ad appeals or approach messages is also positively associated with firm valuation.

The second essay examines the relationship between advertising efficiency and the market valuation of Super Bowl advertisers. First, stock market reactions to Super Bowl advertising are tracked. Event study results show that Super Bowl advertising from 2005 to 2010 is positively related to abnormal stock returns for advertisers. Next, the impact of advertising efficiency on the financial rewards of this media-placement strategy is examined.

Data Envelopment Analysis (DEA) is used to assess advertising executional efficiency. Four advertising executional factors were considered as DEA inputs: (1) advertising expense, (2) advertising length (seconds), (3) frequency (count) and, (4) number of brands promoted. Two types of advertising effectiveness were included as DEA outputs: (1) Ad Meter ratings; and (2) Nielsen ratings. Cross-sectional regression analyses indicate that advertising efficiency is positively associated with cumulative abnormal stock returns of Super Bowl advertisers. These findings suggest that efficient conversion of advertising inputs to advertising outputs matters in generating positive abnormal returns.

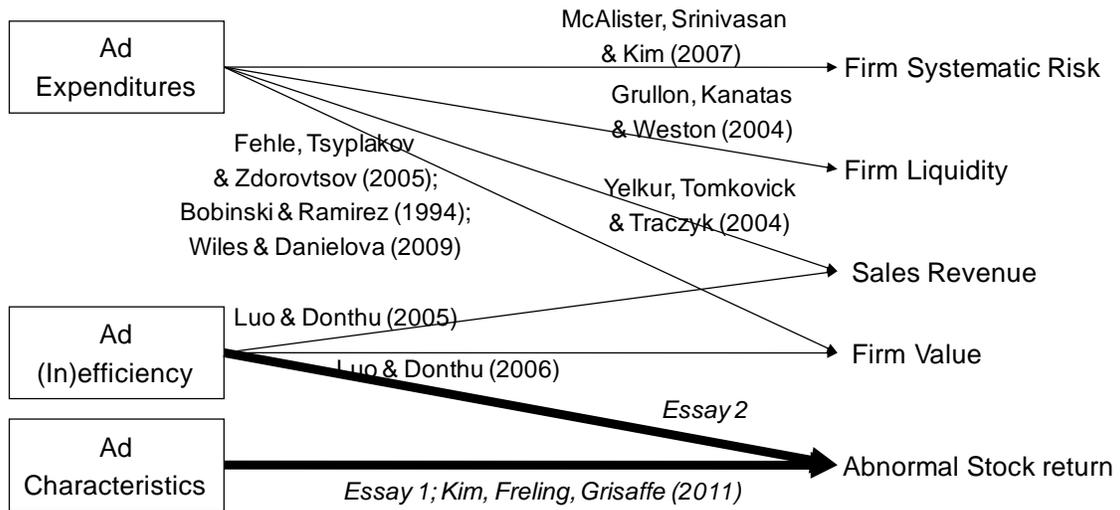


Figure 1.1 Research Gap and Importance

CHAPTER 2

ESSAY 1: ADVERTISING CHARACTERISTICS AND ITS INFLUENCE ON FINANCIAL PERFORMANCE

2.1 Introduction

Research exploring Super Bowl advertising bifurcates along two paths: one rooted in consumer psychology and behavior and the other focusing on the association between advertising and financial performance. Consumer researchers have examined consumer responses to Super Bowl advertising at the individual level, demonstrating that it is generally more interesting (Yelkur, Tomkovick, and Traczyk, 2004), memorable (Bloom, 1998; Freeman, 1999), and buzz-worthy (Siefert et al. 2009) than the average fare, and is associated with more favorable purchase intentions (Russell, Fortunato, Valencia, and Burns, 2005) and higher sales (Meenaghan, 1991). However, this work—largely comprised of content analyses and experiments—cannot explain how these individual-level responses translate into firm-level financial rewards for the company sponsoring Super Bowl advertising.

Other researchers have attempted to explore the financial impact of Super Bowl advertising—but these studies do not fully consider important consumer psychological variables, and have produced equivocal results. Kim and Morris's (2003) Super Bowl event study finds no relationship between ad likeability or frequency and stock market responses, and concludes that investors do not assess a company's value on the basis of intangibles like advertising. Similarly, in their event study, Fehle, Tsyplakov, and Zdorovtsov (2005) document significant positive abnormal returns for recognizable companies advertising during the Super Bowl, but not unrecognized firms, surmising that investors perceive this "money burning" strategy to be ineffective and wasteful for companies that viewers cannot easily identify. In contrast, Chang, Jiang, and Kim's (2009) event study suggests that "liked" Super Bowl

commercials coincide with higher stock returns. In a departure from these three studies, I relate specific characteristics of Super Bowl ads to firm-level financial performance. In doing so, I hope to provide advertisers with prescriptive advice on how to structure Super Bowl ads in order to maximize their return on this costly investment.

The current research, then, takes a comprehensive and integrative approach by injecting consumer psychology into the marketing-finance interface to enhance understanding about the effectiveness of Super Bowl advertising. First, I discuss how investors view Super Bowl advertising and I develop hypotheses about how specific advertising characteristics will be associated with higher stock market prices for firms advertising during the Super Bowl. Next, I empirically investigate the relationship between advertising and financial performance for Super Bowl ads. I also examine the impact of ad characteristics on abnormal stock returns for Super Bowl advertisers. Following a presentation of key results, the manuscript concludes with a discussion of research findings and implications for advertisers considering Super Bowl advertising.

2.2 Conceptual Development

To determine the prudence of advertising during the Super Bowl, it is useful to examine the mounting evidence that suggests advertising influences investor decision-making (Karrh, 2004), and impacts the financial performance of firms (Luo and Donthu, 2005; McAlister, Srinivasan, and Kim, 2007). Such findings contradict classical economic theory, which assumes investors are rational and informed decision-makers who utilize all available relevant information and disregard irrelevant information and nondiagnostic factors in their evaluations (c.f., Colander, Holt, and Rosser, 2004). Information provided through advertising is available, but largely regarded as irrelevant and redundant because such information should already be reflected in current returns and share prices (Karrh, 2004). Interestingly, it seems as though individuals making investment decisions tend to focus on a subset of available information due to limitations in their attention, memory, and processing capacity (Hirshleifer, 2001). In fact,

investors often fail to act economically rational, instead resorting to the implementation of common choice heuristics and rules-of-thumb (Grinblatt and Keloharju, 2000; Simon, 1956).

A major advertising event like the Super Bowl is likely to trigger use of two common heuristics: the *availability heuristic* and the *saliency heuristic* (Kahneman and Tversky, 1973). With the *availability heuristic*, individuals judge an event's importance by the ease with which relevant instances come to mind (Baumeister and Bushman, 2008), with instances of large-scale events being more memorable and retrievable from memory more quickly than instances of smaller-scale events. Consistent with this notion, research suggests that viewers pay closer attention to Super Bowl advertising than to ads broadcast during regular prime-time programs (Buck, 1992; Jensen, 1998), and that these ads generate higher interest (Yelkur, Tomkovick, and Traczyk, 2004) and recall (Bloom, 1998; Freeman, 1999). Thus, information appearing in a Super Bowl ad should be easier to recall than other information an audience member might consider in a subsequent investment decision, and more likely to be used in that context.

The Super Bowl is also likely to activate a *saliency heuristic*, because it is significantly different from other advertising vehicles. When an information signal—like a Super Bowl ad— attracts attention or creates images and associations that facilitate recall, this information is more likely to be utilized in decision-making. Indeed, when half of Super Bowl viewers admit to watching the game just to see the ads (Neff, 2005), and one-quarter indicate they think the commercials are the most important aspect of the Super Bowl (National Retail Federation, 2010), the Super Bowl has become known as a showcase for exceptional, entertaining advertising (Beasley, Shank, and Ball, 1998)—and an important information signal. While a Super Bowl ad is only one signal in a subset of information an individual might consider in an investment decision, research suggests that *cue competition* is likely to occur (e.g., Kruschke and Johansen, 1999). The presence of available, salient cues diminishes the effects of cues that are less accessible and salient, and the presence of irrelevant cues reduces subjects' utilization of relevant ones. Thus, because a Super Bowl ad is a more salient, available cue than

other relevant information, the ad is likely to influence ensuing investment decisions of audience members.

There is some research substantiating the notion that individuals approach investment decisions this way, in a similar manner to how they make other consumption choices—with a “bounded rationality” (Simon, 1996) characterized by cognitive shortcuts and a susceptibility to the available, salient, but possibly irrelevant information presented in advertising (Chauvin and Hershey, 1993; Mathur and Mathur, 1995). Hence, understanding consumer responses to Super Bowl advertising is imperative because it provides insight into subsequent investment decisions and overall stock market reactions. Therefore, in the current research I treat investors as consumers and use their evaluations of Super Bowl ads as audience members to understand and predict resulting stock market movement.

While most research on Super Bowl advertising suggests it has a positive impact on consumer evaluations and thus investor reactions, I believe these relationships are influenced by characteristics of the ads and advertised products. I build on the many studies investigating the likeability of Super Bowl ads and consumer responses to them (c.f., Beasley, Shank, and Ball, 1998; McAllister, 2001; Tomkovick, Yelkur, and Christians, 2001) by systematically examining three factors that have been shown to impact how consumers evaluate Super Bowl ads: *ad character(s)* featured; type of *advertising appeal(s)* used; and, *product benefit(s)* promoted (see Figure 2.1).

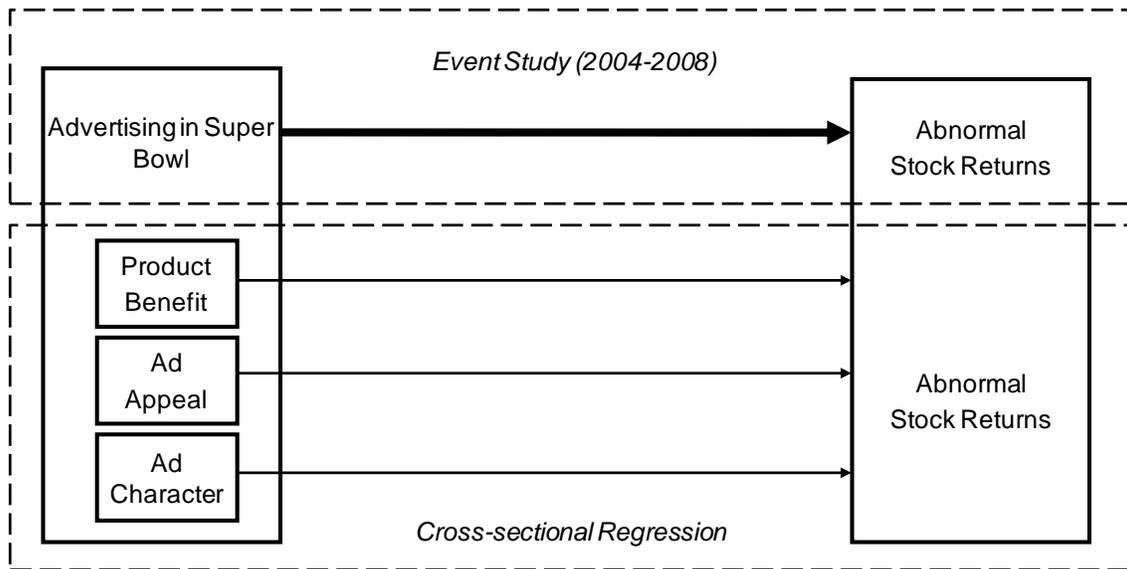


Figure 2.1 Research Framework for the First Essay

2.2.1 Advertising Characters Featured

It is likely that ad characters and spokespersons appearing in Super Bowl advertising will affect consumer (investor) reactions (Gotlieb and Sarel, 1992; Ohanian, 1990). In fact, the idea that characteristics of message communicators (i.e., sources) can enhance or impair the persuasive impact of a message is an enduring theme of persuasion research in social psychology (Hovland, Janis, and Kelley, 1953; McGuire, 1969). The source credibility model (Hovland, Janis, and Kelley, 1953) suggests that sources exhibiting greater expertise and trustworthiness should be perceived as more credible and confer relatively greater persuasion. Similarly, the source attractiveness model (McGuire, 1969) suggests that the effectiveness of a message depends on the attractiveness (i.e., familiarity, likeability, and similarity) of the source. According to these source models, Super Bowl ads featuring sources that are more credible and/or attractive should elicit relatively more favorable responses among consumers (investors).

Research on source effects in advertising indicates that different types of ad characters may possess credibility and attractiveness (Garretson and Burton, 2005), some potentially

heightening consumer attention to ads and inspiring consumers to emulate the spokesperson (Ohanian, 1990). For example, work by Amos, Holmes, and, Strutton (2008) suggests that, in general, a celebrity spokesperson should convey trustworthiness, expertise, and attractiveness and thus positively influence consumers' brand attitudes, ad attitudes, and purchase intentions. Other research demonstrates that consumers also regard animals (Horovitz, 2006; Lancendorfer, Atkin, and Reece, 2008), children (Horovitz, 2006; Vahedra, 1996), and animated spokescharacters (Callcott and Lee, 1994; Garretson and Niedrich, 2004) as trustworthy and likeable ad characters. Given this, I expect to find greater liking for Super Bowl ads featuring likeable, credible sources, which should also be associated with more favorable stock market returns.

H1: Likeable ad characters are positively related to the worth of Super Bowl advertising.

2.2.2 Advertising Appeals Used

Consumer (investor) reactions to a given Super Bowl ad are also likely to depend on the type of advertising appeal employed. The nature of advertising appeals has been examined extensively in the marketing and advertising literature (Stafford and Day, 1995; Turley and Kelley, 1997). Most of this work characterizes ad appeals as either *rational* or *emotional*, a dichotomy likely predicated upon Copeland's (1924) assertion that consumers buy products for rational or emotional reasons. *Rational* advertising is based on fundamental information processing models of decision-making, which assume consumers make logical and rational decisions. Ads employing rational appeals provide meaningful facts and persuasive arguments about a brand's attributes (Cutler, Thomas, and Rao, 2000). Such ads might include claims about a product's quality, value, or performance (Kotler and Armstrong, 1994). *Emotional* advertising attempts to move the consumer emotionally toward greater product acceptance (Cutler, Thomas, and Rao, 2000), by making the consumer feel good about the product or

creating a likable brand (Albers-Miller and Stafford, 1999). Such ads typically focus on evoking humor, romance, arousal, surprise, and other positive feelings (Kelley and Turley, 2004).

Research indicates the relative effectiveness of rational versus emotional advertising appeals varies according to context (Petty and Wegener, 1998). Consistent with research on the mood congruency/accessibility hypothesis (Goldberg and Gorn, 1987), which suggests the tenor of a television ad should match the program in which it appears, Super Bowl advertising effectiveness is likely to be mediated by its special viewing environment. There are unique social conventions which characterize the viewing context of the Super Bowl, most notably the “communal ritual” of watching the game and evaluating the ads together in a party environment (Turner, 1997). Interestingly, the Super Bowl has become the largest social gathering revolving around a television program (McAllister, 2001), and the largest at-home party event of the year with an average of 17 individuals watching the game together (Phillips, 2006). In this high-arousal, festive atmosphere, where viewers watch the game and the advertising for enjoyment (Beasley, Shank, and Ball, 1998; Newell, Henderson, and Wu, 2001), Super Bowl ads that reflect this tone and employ positive, emotional ad appeals should be more effective.

Thus, Super Bowl ads featuring emotional appeals such as humor, (Gulas and Weinberger, 2006), sex, (Dahl, Sengupta, and Vohs, 2009), and surprise endings, (Horovitz, 2006) should be more persuasive among consumers (investors). Conversely, because the Super Bowl is not programming that viewers watch to obtain serious information (Kelley and Turley, 2004), rational ad appeals—such as those featuring straight announcements and quality claims—should be less effective (Park and Young, 1986) and lead to less favorable stock market returns.

H2: Emotional appeals are positively related to the worth of Super Bowl advertising.

2.2.3 Product Benefits Promoted

Like any marketing strategy, advertisements appearing in the Super Bowl may be designed to elicit different behavioral responses among consumers based on the type of benefits promoted (i.e., whether an ads induces audience members to engage in *approach behaviors* or *avoidance behaviors*) (Wells, 1986). This categorization scheme draws on theory in two areas: (1) *optimal stimulation theory*, which suggests individuals are likely to select positive stimuli and situations and avoid negative ones (Petrie, 1967); and, (2) the *immediacy principle*, which holds that individuals are attracted to people and objects that are likeable, favorable, and preferable, while they avoid environmental elements they do not like, evaluate favorably, or prefer (Mehrabian, 1971). *Approach* messages (e.g., promoting movies, beer, snack food, and new cars) emphasize benefits consumers enjoy using and evaluate positively. In contrast, *avoidance* messages (e.g., promoting prescription drugs, unemployment services, hygiene products, and insurance policies) evoke negative feelings about the associated product benefits and problems they address.

Because approach messages should attract consumers and elicit favorable feelings and behaviors, I expect Super Bowl ads promoting products with approach benefits to be associated with more favorable stock market returns. Conversely, I expect Super Bowl ads featuring avoidance messages, which repel consumers and evoke negative feelings and behaviors, to be associated with less favorable stock market returns.

H3: Approach messaging is positively related to the worth of Super Bowl advertising.

2.2.4 The Congruency of Ad Character, Appeal and Messaging

Longstanding models of advertising processing assume viewers attend to *many* elements of an ad, including its words, music, scenery, and claims (see MacInnis and Jaworski, 1989, for review). Consistent with this, it is likely that—rather than considering how likeable ad characters, emotional ad appeals, and approach messages each affect the stock market

performance of Super Bowl advertisers in isolation—consumers (investors) should simultaneously take into account multiple elements of the Super Bowl ads they watch. Thus, I integrate the theory and research on *ad character(s)*, *advertising appeal(s)*, and *product benefit(s)* and consider the interplay among these elements to better understand their joint impact on investor decision-making.

Any one Super Bowl ad represents a combination of effects associated with likeable ad characters, emotional appeals, and approach messages, which, when taken together, could have an overall impact—positive or negative—that is stronger than that associated with any one of the elements in isolation. The nature of that combined impact is likely to depend on whether the elements work together or oppose one another. I draw upon research on (in) congruence in advertising to better understand these important interactive effects. A large body of work suggests that presenting congruent information increases advertising effectiveness in terms of memory (Barsalou, 1982; Sengupta et al., 1997) and attitudes (Kahle and Homer, 1985; Kamins, 1990). The idea is that congruent advertising elements work together synergistically, so that the combined effects of two positive, congruent elements reinforce one another and outperform an ad with only one positive, element. The combined effects of three positive, congruent elements should be even more favorably perceived than a message with two. Evidence from Super Bowl advertising supports this assertion. For example, in 2008 E*Trade promoted financial services (an approach product) using a humorous (emotional appeal) talking baby (likeable ad character) in its Super Bowl spot. Similarly, Coca-Cola effectively advertised its flagship brand (approach product) during the same Super Bowl by showing parade balloons (animated characters) playfully battle for a giant inflated Coke over New York City (emotional appeal). Both of these ads landed in the top ten *AdMeter* rankings that year, and their sponsors experienced favorable stock market reactions following the Super Bowl.

While expectations about Super Bowl ads like these—that are “doubly positive” or “triply positive” in terms of congruence—are fairly intuitive, predicting what will happen when Super

Bowl ads feature incongruent ad elements is less straightforward. Reflecting back upon the unfavorable Under Armour Super Bowl ad described in the opening scenario provides some insight into how consumers (investors) react to mixed messages. This spot featured an approach message that promoted athletic shoes, but its dark, serious tone (negative emotional appeal) and the absence of recognizable, likeable ad characters seemed to override the allure that approach benefits usually convey. This example suggests that Super Bowl ads featuring incongruent messages will not fare as well as those with strong, positive, congruent information.

Mandler's (1982) schema incongruity theory permits even more specific predictions about how individuals will evaluate mixed Super Bowl ads. According to Mandler (1982), an individual processing incongruent information will be guided by his or her schema (i.e., frame of reference), and s/he may attempt to resolve the incongruity if processing motivation and ability are sufficient. Successful resolution of incongruent information can ultimately enhance ad effectiveness. However, Alba and Hutchinson (1987) assert that many factors can impair processing motivation and ability, and thus dissuade individuals from attempting to resolve message incongruity. One factor that stifles an individual's motivation and/or ability to resolve incongruent information is *mood*. Research suggests that mood influences the nature, course, and quality of cognitive resources (Lee and Schumann, 2004). In particular, a positive, happy mood reduces deliberate, careful processing of information (Asuncion and Lam, 1995; Mackie et al, 1992), because it consumes cognitive resources and thus interferes with extensive information processing. The entertaining nature of the Super Bowl game and ads, and the cheerful environment in they are watched (Beasley, Shank, and Ball, 1998; Newell, Henderson, and Wu, 2001) is likely to induce positive moods among viewers (investors)—meaning that viewers will not likely attempt to resolve the incongruity in mixed Super Bowl advertising messages they see, and will simply respond more negatively to such messages. For this reason, I expect for Super Bowl ads possessing positive, congruent information to be more effective among consumers (investors) than those with incongruent, mixed messages.

H4a: The combined use of likeable ad characters and emotional appeals is positively related to the worth of Super Bowl advertising.

H4b: The combined use of likeable ad characters and approach messaging is positively related to the worth of Super Bowl advertising.

H4c: The combined use of emotional appeals and approach messaging is positively related to the worth of Super Bowl advertising.

H4d: The combined use of likeable ad characters, emotional appeals and approach messaging is positively related to the worth of Super Bowl advertising.

2.3 Method

In order to investigate the impact of these ad characteristics on advertisers' financial performance, I applied three steps including content analysis (ad level), event study (firm level), and cross-sectional regression analysis.

2.3.1 Content Analysis and Ad Coding

I accessed Super Bowl advertisements from 2004 to 2008 available on Spike.com, retrieving a total of 285 brand-level observations for 68 firms across five consecutive Super Bowls. Because my aim was to pair ads with data on the stock market prices of their respective companies, I excluded Super Bowl commercials sponsored by non-publicly traded U.S. companies, firms listed in foreign stock markets, and non-commercial organizations (e.g., Office of National Drug Control Policy).

Two independent coders carefully reviewed each of the 285 advertisements and subjectively coded details about each ad's ad character(s), ad appeal(s) and product benefit(s). First, I coded for the presence of *likeable ad character(s)* featured in each ad (i.e., a celebrity, an athlete, a baby/child, an animal, or an animated character). The *product benefits* promoted in each ad were coded using a binary scheme (1 = Yes, 0 = No). Specifically, coders detailed

whether an ad promoted an approach benefit (i.e., something positive or utilitarian to be gained through product usage) or an avoidance benefit (i.e., something negative to be avoided through product usage). Finally, *ad appeals* were coded in a similar manner, specifying whether an ad featured given types of emotional appeals (i.e., humor, sex appeal, or surprise endings) or types of rational appeals (i.e., a quality claim or straight announcement). Inter-rater agreement was high (95%) and discrepancies were resolved through discussion. The coding scheme, along with examples and ad-level summary statistics, appear in Table 2.1.

Table 2.1 Coding Scheme and Summary Statistics

Variable	Example	Frequency	Proportion
Ad Characters			
Celebrities	Justin Timberlake in Pepsi ad	109	39%
Athletics	Derek Jeter in Gatorade G2 ad	41	15%
Animals	Clydesdale horses in Budweiser ad	59	21%
Babies/Children	Baby boy in E-Trade ad	24	9%
Animated Characters	Cartoon panda in Salesgenie.com ad	21	8%
Ad Appeals			
<u>Emotional Appeals</u>			
Humor Appeals	Ex-GOP senator Bill Frist and Democrat James Carville bond in Coke ad	178	64%
Surprise Endings	Carlos Mencia teaches the language of love in Budweiser ad	75	27%
Sex Appeals	Sexy women appears in Godaddy.com ad	93	33%
<u>Rational Appeals</u>			
Quality Claims	“Never ending refreshment and superior drinkability” claim in Budweiser ad	112	40%
Straight Announcements	“Be aware of spontaneous” claim in Hershey Ice Cubes ad	180	65%
Product Benefits			
Approach Benefit(s)	Cadillac in GM ad	222	79%

2.3.2 Event Study

To tie coded ad characteristics to stock performance I applied an event study methodology. I calculated expected shareholder returns for the companies in my sample over an estimation window of 230 trading days ending 46 days prior to the Super Bowl event. The advertisements aired during the Super Bowl can be viewed on Internet web sites such as YouTube as early as one month before the Super Bowl. Several Super Bowl advertisers intentionally reveal their advertising prior to the event (Nail, 2007) (e.g., see Play-Action advertisers, Pregame Warmup Brands, and The Kickoff Squad) in an effort to generate media buzz, facilitate audience discourse, and encourage positive word-of-mouth (McAllister, 1999).

According to the official schedule of the National Football League (NFL), the regular football season begins the first week of September and ends the first week of January. After the regular season, post-game and division championships follow for four weeks, leading up to the Super Bowl on the first Sunday of February. Given that media coverage of Super Bowl advertising winners and losers lasts for several weeks after the game, I observed each advertiser's market valuation 30 days prior to, and 30 days after, the Super Bowl.

2.3.3 Variable Definition

2.3.3.1 Dependent Variable

I investigate abnormal stock returns of Super Bowl advertisers, predicting expected shareholder returns using a market model. After obtaining the cumulative stock returns from the event study, I computed cumulative average abnormal returns (CAARs). The daily stock price and market indices were obtained from the Wharton Research Data Service (WRDS) at the University of Pennsylvania. The data origin was the Center for Research in Security Price (CRSP) at the University of Chicago. Based on portfolio test statistics on CAARs, I focus on the [-3,1] event window (five business days of trading involving three days prior to official airing of Super Bowl ads, and two trading days immediately following the airing of ads). During this time period, Super Bowl advertising results in an average 0.8% increase in advertisers' stock prices.

The portfolio test statistics using bootstrap ($t = 1.732, p < 0.001$) and generalized statistics ($Z = 2.265, p < 0.05$) support positive returns for Super Bowl advertisers in this five-day window. The 0.8% abnormal returns in my data are comparable to the 0.7% increase in CAARs over five days associated with product placements (Wiles and Danielova, 2009).

2.3.3.2 Independent Variables (Ad-related characteristics)

Because the event study methodology involves firm-level measures companies are the unit of analysis, while the previously described ad coding is at the individual ad level. Since any company could have multiple ads, sometimes involving different brands and product items, the ad-level measures had to be rolled up into firm-level variables to match the unit of analysis for the cumulative abnormal returns (CARs) dependent variable (See Appendix). In converting ad-level variables into firm-level values, the objective was to construct measures that established a firm's place on a continuum for each independent variable of interest (Malhotra 2010). Descriptive statistics for my dependent variable, independent variables and control variables are reported in Table 2.2.

To compute firm-level measurements for the likeable characters variable, I summated the binary likable character codes across all of a company's ads in a given year. Higher values on this variable meant higher numbers of likeable ad characters used across the firm's ads. Counts were kept of the number of ads and brands involved for any given firm, anticipating the importance of taking this into account in subsequent firm-level modeling (i.e., as control variables described later).

A "net" scoring method was used to place firms on a continuum for emotional versus rational appeals. Across all of a firm's ads for a given year, net emotional appeals is the total number of emotional appeal codes minus the total number of rational appeal codes. Across multiple ads, firms with ads solely using emotional appeals would have a positive score, whereas firms with ads solely using rational appeals would have a negative score. For firms

with a mix of emotional and rational codes, the net score would reflect whether, on balance, a company tended to use more emotional or rational appeals in their ads.

Table 2.2 Variable Definition and Descriptive Statistics

Variable	Definition	Minimum	Maximum	Mean(SD)
Dependent Variable				
Standardized Cumulative Abnormal Returns (SCARs)	Cumulative abnormal returns (CARs) divided by the standard deviation of the cumulative abnormal returns adjusted for forecast error	-3.32%	3.14%	.25(1.07)
Independent Variables				
Likable Characters	Number of instances of likable characters	0	12	1.78(2.26)
Net Emotional	Number of emotional appeal ads- Number of rational appeal ads	-4	10	.47(2.32)
Net Approach	Number of approach appeal ads-Number of avoidance appeal ads	-3	9	1.27(2.29)
Ad Controls				
Number of Brands	Number of brands promoted	1.00	6.00	1.34 (.76)
Multiple Ads	Binary (1=Yes, 0=No)	.00	1.00	.47 (.50)
Firm Controls				
Ln(Sales)	Natural logarithm of sales of previous year	3.83	12.24	9.78 (1.63)
Ln(Employee)	Natural logarithm of number of employees of previous year	-1.08	6.08	4.09 (1.63)
DotCom	Binary (1=Yes, 0= o)	.00	1.00	.10 (.30)
Service	Binary (1=Yes, 0= No)	.00	1.00	.20 (.40)

To scale firms on a continuum of approach messaging, I also constructed a firm-level “net” approach score. Across all of a firm’s ads for a given year, net approach is the total number of approach codes minus the total number of avoidance codes. Firms with all approach messages would have a positive score, whereas firms with all avoidance codes would have a negative score. For firms with a mix of approach and avoidance codes, the net score would

reflect whether, on balance, a company tended to use more approach or avoidance messaging in their ads.

Finally, regarding the elements of Hypothesis 4, I created interaction terms to represent multiplicative effects for combinations of likable ad characters, net approach and net emotional appeals. With three independent variables, there are three possible two-way interactions corresponding to H4a, H4b, and H4c, and one possible three-way interaction corresponding to H4d. Following Jaccard and Turrisi (2003), I first created centered versions of each continuous variable, and then computed product terms to represent respective interactions. The specific computed two-way interaction terms were: Likable Characters x Emotional Appeal; Likable Characters x Approach Benefit; and Emotional Appeal x Approach Benefit. The computed three-way interaction term was Likable Characters x Emotional Appeal x Approach Benefit. All of the firm-level main effects and interaction terms were used as independent variables to predict the firm-level [-3,1] CARs dependent variable.

2.3.3.3 Control Variables

Since ad-level characteristics were combined across multiple ads to create the firm-level independent variables, all else equal, the more ads a firm showed in any given Super Bowl, the higher the values on the combined firm-level measures. Thus I specified several control variables to account for this. First, any firm could show a single ad or multiple ads. If multiple ads were aired, they could represent one brand or two or more brands. Further, any given brand could have multiple ad airings. For example, during the 2004 Super Bowl Anheuser-Busch aired nine commercials for two brands, Budweiser and Bud Light. Thus Anheuser-Busch had multiple ads as opposed to a single ad, representing two different brands, with nine total ads. Control measures describing a firm's particular mix of ad placements were captured in these variables. In addition, four dummy variables were included as controls representing my five years of data. These were intended to control for time-specific factors that

might influence the effectiveness of an advertiser's ads in any given year such as weather, game intensity, or team popularity.

I also included several firm-level control variables. Each firm's sales and number of employees were obtained from Compustat. I also coded the nature of the offering marketed by each firm as either a service (e.g., CareerBuilder) or a product (e.g., Gatorade). I also categorized whether each sponsoring firm was a dotcom or brick-and-mortar organization.

2.4 Results

2.4.1 Event Study Result

Table 2.3 shows the daily average abnormal returns for 12 days—from five days prior to the Super Bowl to six days after the game—and indicates that Super Bowl advertisers have significantly positive abnormal returns immediately following the Super Bowl. Specifically, there are positive unexpected returns three days before and one day after Super Bowl. Negative abnormal returns were observed five days and four days prior to Super Bowl, but there are consistent positive returns after the event day through six days after the event.

Table 2.3 Daily Average Abnormal Return of Super Bowl Advertisers

Day	Average Abnormal Return	Positive: Negative	Portfolio Time Series t	Generalized Z
-5	-0.27%	55:66	-1.331	-0.646
-4	-0.53%	43:78	-2.575**	-2.829***
-3	0.44%	78:43	2.147**	3.538****
-2	0.26%	66:55	1.274	1.355
-1	-0.10%	50:71	-0.468	-1.556
0	-0.18%	56:65	-0.865	-0.464
1	0.37%	63:58	1.785*	0.809
2	0.20%	68:53	0.959	1.719*
3	0.20%	67:54	0.975	1.537
4	0.09%	64:57	0.456	0.991
5	0.10%	59:62	0.487	0.082
6	0.04%	69:52	0.196	1.901*

* Significant at the 10% level

** Significant at the 5% level

*** Significant at the 1% level

**** Significant at the 0.1% level

Table 2.4 displays the cumulative average abnormal returns (CAARs) and test statistics in various event windows. Based on portfolio test statistics, I present CAARs for windows of [-3,1], [-3,3], [-3,5], [1,5] and [-20,-1], paying special attention to the [-3,1] window. During this time period, Super Bowl advertising results in an average 0.8% increase in advertisers' stock prices from three days before to one day after the Super Bowl. The portfolio test statistics using bootstrap ($t = 1.732$, $p < 0.001$) and generalized statistics ($Z = 2.265$, $p < 0.05$) further support the robustness of Super Bowl advertisers' positive returns.

Table 2.4 CAARs for Super Bowl Advertisers

Event Window	CAAR	Portfolio t-statistics	Portfolio t-statistics (Bootstrap)	Positive: Negative	Generalized Z-statistics
(-3,-1)	0.61%	1.705*	1.705***	65:56	1.173
(-3,+1)	0.80%	1.732*	1.732****	71:50	2.265**
(-3,+3)	1.20%	2.195**	2.195****	75:46	2.992***
(-3,+5)	1.39%	2.250**	2.250****	78:43	3.538****
(+1,+1)	0.37%	1.785*	1.785****	63:58	0.809
(+1,+7)	1.02%	1.875*	1.875****	71:50	2.265**
(0,+3)	0.59%	1.427	1.427***	79:42	3.720****
(-20,-1)	-2.20%	-2.387**	-2.387***	40:81	-3.375****
(+1,+5)	0.96%	2.085**	2.085****	70:51	2.083**
(-1,+1)	0.09%	0.261	0.261	66:55	1.355
(0,+20)	0.52%	0.545	0.545	61:60	0.445
(+1,+2)	0.57%	1.941*	1.941***	76:45	3.174****

* Significant at the 10% level
** Significant at the 5% level
*** Significant at the 1% level
**** Significant at the 0.1% level

The 0.8% abnormal returns in the [-3,1] event window are comparable to the 0.7% increase in CAARs over five days associated with product placement (Wiles and Danielova, 2009). Aggregated CAARs shows that financial rewards associated with Super Bowl advertising can last for up to 10 days, beginning three days prior to the event and concluding the sixth day after the event. Given that CAARs are consistently positive right after the Super Bowl, it follows that Super Bowl advertising can influence consumers and improve a firm's financial

performance for at least one full week following the game. This finding suggests Super Bowl advertising appeals to consumers *and* attracts the attention and interest of investors as well (Fehle, Tsyplakov, and Zdorovtsov 2005).

2.4.2 Cross-Sectional Regression

Having prepared all variables for analysis, I employed regression modeling to test the impact of ad characteristics on Super Bowl advertisers' abnormal returns for the [-3,1] event window. I used standardized cumulative abnormal returns (SCARs) as the dependent variable to mitigate heteroscedascity (Wiles and Danielova, 2009). Eligible cases for analysis were those with complete firm-level information on all variables of interest (n=103). I followed general regression diagnostic procedures outlined in Hair et al. (2010), resulting in the identification and removal of four outliers. The final regression model was estimated by entering blocks of variables in two steps.

First, all control variables were entered. At this initial step, the control variables showed a statistically significant initial relationship with standardized cumulative abnormal returns in the [-3,1] event window ($F_{(11,87)} = 2.33, p < .05; R^2 = 0.23, Adjusted R^2 = 0.13$). In the second step, with the control variables already entered, the independent variables of substantive interest were then entered along with all of their possible two-way and three-way interaction terms. An *F*-test for the change in R^2 at step two was significant ($F\ change_{(7,80)} = 4.32, p < .001$), producing a statistically significant final model with all control variables, main effects and interactions included ($F_{(18,80)} = 3.48, p < .001; R^2 = 0.44, Adjusted R^2 = 0.31$). Regression parameter estimates, *t*-tests and *p*-values are shown in Table 2.5, along with zero order correlations for each predictor with the dependent variable.

Table 2.5 Cross Sectional Regression Results (DV=SCAR in percentage over days -3 to 1)

	Bivariate Correlation (r)	Regression Parameter (b)	t-value	p-value
Intercept		.246	.353	.725
Main Effects Ad Characteristics				
H1: Likable Characters	.292	.172	2.203	.030**
H2: Emotional Appeals	.264	.139	2.119	.037**
H3: Approach Benefits	-.011	-.145	-1.603	.113
Ad Characteristic Interactions				
H4a: Likeable * Emotional	.205	.046	1.927	.057*
H4b: Likeable * Approach	.132	.037	1.793	.077*
H4c: Emotional * Approach	.134	.014	.551	.583
H4d: Likeable * Emotional * Approach	.151	-.011	-2.060	.043 ^a
Ad Controls				
Number of brands	.181	.051	.279	.781
Multiple Ads	.094	.601	2.035	.045**
Ad Frequency	.048	-.319	-2.110	.038 ^a
Year_2008	.179	.874	3.040	.003***
Year_2007	-.222	-.358	-1.168	.246
Year_2006	-.010	.353	1.238	.220
Year_2004	.260	.583	1.801	.075*
Firm Controls				
Ln(Sales)	.030	-.086	-.771	.443
Ln(Employee)	.071	.078	.718	.475
DotCom	.057	-.276	-.556	.580
Service	.050	.320	1.070	.288
	N	99		
	R2	.439***		
	Adjusted R2	.313		
	F-value(18,80)	3.481		
	F-probability	<.001		

Significant at the 10% level, ** Significant at the 5% level, *** Significant at the 1% level,
a) size of bivariate correlation and sign reversal indicate supression effect

Regarding main effects for my three independent variables of interest, after accounting for control variables, both likable characters and emotional appeals showed statistically significant positive predictive relationships with standardized abnormal returns. These results support hypotheses H1 and H2. H3 was not supported, as the approach messaging variable was not statistically significant. However, all three main effect tests need to be qualified by the presence of two statistically significant two-way interactions involving all three independent variables of interest. The Likable Characters x Emotional Appeal interaction was statistically significant, as was Likable Characters x Approach Benefit interaction, supporting hypotheses H4a and H4b. In each case the positive sign of the interaction term indicates an “augmenting” or “enhancing” form of moderation. Specifically, the positive effect of likeable characters is synergistically magnified with increased levels of both emotional and approach messaging. The two-way interaction of Approach Benefit x Emotional Appeal corresponding to H4c was not supported. Regarding the lack of support for H4c and H3 and, I note the possibility of limited variability in the approach measure as a potential contributing factor since nearly 80% of my coded Super Bowl ads used approach messaging (Table 2.1). The approach measure only played a significant role in the supported two-way Likeable Characters x Approach Benefit interaction of H4b.

Finally, regarding Hypothesis 4d, the statistical test of the three-way interaction was statistically significant; however, the sign of the effect was negative. Further investigation of this apparent paradox points to a particular type of mathematical artifact rather than a substantively meaningful finding. Specifically, when a predictor in a regression shows a specific mix of mathematical conditions, a sign reversal occurs in the regression parameter signaling the presence of a “classical suppression effect” (Cohen et al., 2003; Friedman and Wall, 2005). The conditions producing classical suppression are: (a) relatively low correlation with the dependent variable; (b) stronger correlations with other predictors in the model, but not necessarily multicollinearity; and (c) the occurrence of a sign reversal from the low positive bivariate

correlation with the dependent variable to a significant negative estimated regression parameter (Cohen et al. 2003; Friedman and Wall, 2005). These exact conditions were involved in my three-way interaction. Based on the literature on suppression effects, I therefore treat the finding as not substantively meaningful, and fail to provide support for H4d. In summary, I found meaningful synergistic effects for two of three “doubly positive” ad characteristic combinations, but no additional synergy accruing under the “triply positive” condition.

2.5 Discussion and Implications

2.5.1 Discussion

In this study, I investigate the relationship between Super Bowl advertising and advertisers' market value using an event study, incorporating important ad-related variables that could impact financial performance. My results demonstrate that Super Bowl advertising from 2004 to 2008 is positively related to abnormal stock returns for advertisers, suggesting that advertising in the world's most expensive vehicle may be worth it. Further, this finding supports my initial theorizing and suggests investors, like ordinary household consumers, may behave irrationally and be susceptible to non-rational aspects in available, salient advertisements—like those appearing in the Super Bowl (Karrh, 2004).

My work identifies explicit mechanisms by which advertising may influence investor responses, and suggests that investor decision-making is more responsive to Super Bowl ads featuring specific ad elements. I confirm that likeable ad characters improve the effectiveness of Super Bowl ads (Amos, Holmes, and, Strutton 2008; Horovitz, 2006; Vahedra, 1996), with respect to financial market performance. Consistent with my expectations and prior research (Tomkovick, Yelkur, and Christians, 2001; Woltman Elpers, Mukherjee, and Hoyer, 2004), I also found emotional appeals in Super Bowl advertising has a positive impact on advertisers' financial performance. Finally, approach messaging is associated with favorable stock market reactions. Similar arguments have been offered previously with respect to emotional appeals

(e.g., Dahl, Sengupta, and Vohs, 2009; Sengupta and Dahl, 2008) and approach messaging (Petrie, 1967; Mehrabian, 1971), but never in a direct link to firms' market performance.

2.5.2 Implications

While this research verifies that individual elements of Super Bowl advertising can positively impact firms' financial performance, perhaps a more important insight is that these effects are qualified in various combinations, indicating that all Super Bowl ads are *not* created equal with respect to their influence on advertisers' market performance! My results clearly suggest that the interplay between *ad characters*, *emotional appeals*, and the *approach/avoidance messaging* in a given Super Bowl ad determines its relative effectiveness. The most successful Super Bowl ads appear to be approach-oriented with likeable ad characters, or emotionally-based with likeable ad characters. Leaving out any of these key ingredients can result in a less positive impact.

In fact, certain incongruous combinations (e.g., ads featuring rational appeals with likeable characters, or likeable characters with avoidance messaging) may negatively affect the recipe. The interaction effects I discovered shed new light on the success of Super Bowl ads like Coca-Cola in 2008—which effectively promoted an approach product (carbonated cola beverage) using humor (emotional appeal) by showing parade balloons (animated characters) playfully battling over a giant inflated Coke float over New York City. My findings also aid understanding of the failure of Under Armour's 2008 Super Bowl spot, which promoted an approach product (athletic shoes) and featured positive ad characters (athletes)—but failed to incorporate a pleasant emotional appeal, opting instead for a straight announcement (rational appeal) delivered in an ominous timbre.

CHAPTER 3

ESSAY 2: ADVERTISING EFFICIENCY AND ITS IMPACT ON ADVERTISERS' FINANCIAL PERFORMANCE

3.1 Introduction

Over the past decade, the Super Bowl has garnered an average television rating of 41.66, and has been the top network primetime telecast each year (Nielsen, 2009). This is astounding in today's media environment, which is characterized by digital video recording, zipping through recorded ads, zapping during commercial breaks of live television, a proliferation of cable and satellite channels, and increasing advertising clutter (Bellamy, 1998; Elliott, 2003; Kelley and Turley, 2004; McAllister, 1999). With live viewership dwindling and dispersing across an increasing number of available media options, and diminishing network television ratings, the Super Bowl stands out as a premiere sports event that consistently delivers large audiences.

Unlike other prime time television programs, the Super Bowl attracts a large number of viewers under 35 years of age, and a substantial concentration of males (Jensen, 1998; Tomkovick, Yelkur, and Christians, 2001). In 2008, 45.8 million males watched the Super Bowl, reflecting a 42.9 television rating among men (Nielsen, 2009). Further, compared to other highly rated television programs—especially other televised football games and sporting events—the Super Bowl has also been effective at reaching female television viewers (Beasley, Shank, and Ball, 1998; Turner, 1997). Almost 38.8 million women watched the Super Bowl in 2008, representing a 32.9 television rating and greater viewership female women than reported for the Academy Awards (Nielsen, 2009). Given that women control 60% of U.S. wealth and make or influence 80% of consumer purchase decisions (Peter and Olson, 2008), this makes the Super

Bowl an attractive advertising vehicle. Interestingly, half of Super Bowl viewers indicate they watch the game just to see the ads (Neff, 2005) and one-quarter (24.3%) think the commercials are the most important part of the Super Bowl (National Retail Federation, 2010).

Motivated by the benefits of Super Bowl advertising, consumer researchers have examined consumer responses to Super Bowl advertising at the individual level and several event studies have also examined the impact of Super Bowl advertising on stock market activity in recent years. Kim and Morris (2003) found significantly different stock price performance relative to prior evaluation periods for companies advertising during the Super Bowl. Similarly, Fehle, Tsyplakov, and Zdorovtsov (2005) found significantly positive abnormal returns for firms which advertised during the Super Bowl and were readily identifiable in the ads they aired. Finally, Chang, Jiang, and Kim (2009) found that firms airing well-liked Super Bowl ads commanded higher stock market prices in the days following the game. Each of these three studies used USA Today's Ad Meter ratings as a proxy for consumer attitudes toward Super Bowl ads in an effort to determine if ad likeability influences investor trading activity. Kim, Freling and Grisaffe (2011) explore the financial impact of specific product benefits, ad appeals, and ad characters featured in Super Bowl ads on subsequent trading activity.

Despite advances in my knowledge about Super Bowl effectiveness, little attention has been paid to examine how Super Bowl advertising expense and efficiency are related to financial performance. In fact, Super Bowl advertisers must also consider issues such as costs, exposure frequency, and image risks that accompany Super Bowl advertising. A primary concern is the escalating expense associated with Super Bowl advertising. To illustrate this issue, the average cost of a 30-second Super Bowl spot has increased 7,900%, from \$37, 500 in 1967 to \$3,000,000 in 2009 and \$2,700,000 in 2010. Even given the large number of viewers watching the game and the ads, today's rates are regarded as exorbitant by advertisers and consumers alike. In fact, recent survey data suggests many consumers (21.4%) wish

advertisers would not spend so much money on Super Bowl commercials and would instead pass savings on to shoppers (National Retail Federation, 2010).

The purpose of this study is to investigate the relationship between Super Bowl advertising efficiency and its financial outcomes using event study. Prior research on Super Bowl advertising's financial performance has focused on firm capacity (Fehle, Tsyplakov, and Zdorovtsov, 2005), customers' evaluation ratings, and the impact of specific advertising characteristics' on stock market reactions (Kim, Freling and Grisaffe, 2011), but the current study seeks to explain how Super Bowl advertising translates into financial rewards for the company sponsoring that advertising.

Toward that end, I first discuss on how investors view Super Bowl advertising and develop three hypotheses relating advertising efficiency and brand reputation to advertisers' financial performance. Data Envelopment Analysis (DEA) is utilized to determine advertising efficiency by integrating the advertising inputs and outputs. Then, the relationship between advertising efficiency and financial performance for Super Bowl advertisings is empirically investigated. Following a presentation of key results, the manuscript concludes with a discussion of research findings and implications for advertisers considering Super Bowl advertising.

3.2 Conceptual Development

Following a call for more financial accountability in marketing (Rust, Ambler, Carpenter, Kumar, and Srivastava, 2004), research has explored the financial impact of marketing activities including advertising, customer satisfaction, new product development, corporate social responsibility, and brand equity (Srinivasan and Hanssens, 2009). Prior research suggests that advertising is positively related to firms' financial performance (sales, firm value, systematic risk, liquidity).

There is mounting evidence that advertising influences investor decision-making (Karrh, 2004), and impacts the financial performance of firms (Luo and Donthu, 2001; Luo and Donthu,

2005; McAlister, Srinivasan, and Kim, 2007; Grullon, Kanatas, and Weston, 2004). Luo and Donthu empirically demonstrated that efficiency in marketing can improve a firm's financial rewards (Luo and Donthu, 2004; Luo and Donthu 2006). Based on these research findings, I systematically study two major factors that have been shown to impact how investors interpret and evaluate Super Bowl ads: *advertising efficiency*, *brand reputation*, and the *interaction* between these two factors (see Figure 3.1).

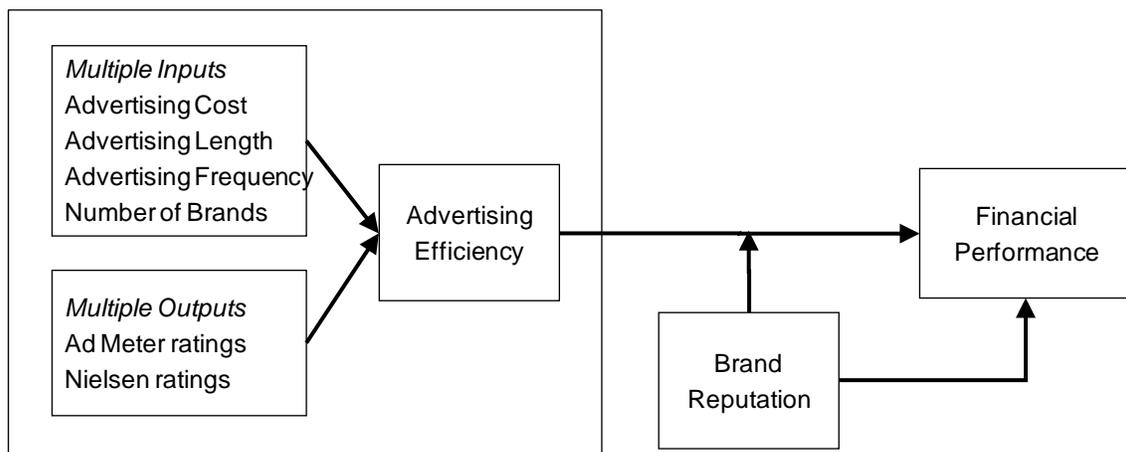


Figure 3.1 Research Framework for the Second Essay

3.2.1 Advertising Efficiency

The relationship between advertising and sales has been examined using mathematical modeling, which demonstrates a positive impact of advertising on sales according to advertising-sales functions (Tellis and Weiss, 1995; Paton, 2002; Hansen, Hansen and Gronholt, 2002; Hsu, Darrat, Zhong and Abosedra, 2002). Just as companies has realized that investors like consumers are a target audience of such high-profile advertising (Kim and Morris, 2003; Kim, Freling and Grisaffe, 2011), researchers affirm that advertising can enhance a firm's sales, stock trading volume, and stock market valuation (Luo and Donthu, 2005; McAlister, Srinivasan, and Kim, 2007; Bobinski and Ramirez 1994).

A firm's advertising and research and development (R&D) expenditures may affect a metric of interest to both finance executives and senior management, the firm's systematic risk (β). Relatively, less attention has been given to the relationship between important indicators of marketing strategy and systematic risk. A notable exception is provided by McAlister, Srinivasan and Kim (2007), who demonstrate that after accounting and finance factors related to systematic risk are controlled, increases in advertising/sales and R&D/sales lower a firm's systematic risk (McAlister, Srinivasan & Kim, 2007).

Luo and Donthu (2001) evaluate advertising efficiency and propose ways to boost advertising efficiency by applying DEA method. They compute the relative efficiency of 100 leading national advertisers in Advertising Age. Advertising expenses of print, broadcast, and outdoor advertising are considered advertising inputs while sales and operating income are treated as advertising outputs. Luo and Donthu (2005) compare DEA and Stochastic Frontier (SF) methods in assessing advertising media spending inefficiencies. Their results provide valuable information in assessing the adequacy of media spending, and show that 20% of advertising spending was found to be inefficient in generating sales revenue. Luo and Donthu (2006) also empirically examine whether marketing expenditure have a positive impact on shareholder value. This research suggests "more is the better" adage cannot be applied to marketing expenditure practices.

H₅: Advertising efficiency is positively associated with Super Bowl advertisers' financial performance.

3.2.2 Brand Reputation

Many favorable outcomes are also believed to be associated with Super Bowl advertising. The Super Bowl is widely regarded as an effective vehicle for launching new products (Yelkur, Tomkovick, and Traczyk, 2004), and for allowing less known companies to create brand awareness and break into national markets. The premise is that advertising during

the Super Bowl places the brand in front of a huge audience and might enable a company to rapidly impact a market before competitors can combat the effect (Dotterweich and Collins, 2005).

Others believe that Super Bowl ads generate higher interest (Yelkur, Tomkovick, and Traczyk, 2004), recall (Bloom, 1998; Freeman, 1999), intent to purchase (Russell, Fortunato, Valencia, and Burns, 2005), sales (Meenaghan, 1991), revenues (McCarthy, 2001), and market share (Bloom, 1998). Additionally, most researchers and practitioners agree the Super Bowl is the most visible advertising event of the year (Jin, 2003), and that, by association, companies that advertise during the game might experience increased market prestige and enhance their perceived importance and status among consumers (Beasley, Shank, and Ball, 1998).

I believe these reputational benefits should have a positive impact on a firm's financial performance, since brand is one of a firm's intangible assets. A cornucopia of research has explored the impact of a strong favorable brand on firm performance (c.f. Keller and Lehmann, 2006).

Researchers agree that brand equity provides value to customers by enhancing interpretation and processing of information, confidence in the purchase decision, and use satisfaction (Aaker, 1996). Brand equity is also thought to bring benefits to firms in the way of marketing efficiency and effectiveness, brand loyalty, price insensitivity, brand extendability, and competitive advantage. Prior research shows that the valuation of consumer goods companies and high-technology firms is based, in large part, on brand equity (Simon & Sullivan, 1993). Madden, Fehle and Fournier (2006) demonstrate that strong brands not only deliver greater stock returns compared to the benchmark portfolio, but also do so with lower risks using a well-known commercial brand equity metric, Interbrand. Mizik and Jacobson (2008) assess which brand asset metrics provide incremental information content to accounting performance measures in explaining stock return.

Based on these research findings, I expect for the brand equity, accruing to Super Bowl advertisers, to be associated with positive financial performance such as return and risks. Well-known brand names with greater brand equity should create high performance standards and unique images that cannot be imitated by competitors through Super Bowl advertising. In contrast, unknown companies, especially Internet ventures, have not experienced great success in parlaying Super Bowl advertising into greater brand awareness (Hastings, 2000). Brand value, a market-based asset should influence consumers' reactions to Super Bowl advertising, eventually improving financial performance.

H₆: Brand reputation is positively related to Super Bowl advertiser's financial performance.

3.2.3 Interaction between Advertising Efficiency and Brand Reputation

Brand popularity in conjunction with other marketing variables can influence market share by interacting with other intangible assets. Luo and Donthu (2006) found that the corporate reputation, financial integrity, and brand image will also play a moderating role between marketing credibility and shareholder value. Based on this finding, brand reputation will moderate the relationship between advertising efficiency and financial outcome. Therefore, there will be an interaction effect between advertising efficiency and brand reputation.

H₇: Advertising efficiency has a higher influence on financial performance in advertisers with higher (versus lower) brand reputation

3.3 Methodology and Data

The analysis in this application consists of three steps. First, to obtain an advertising efficiency score for each Super Bowl advertisers from 2005 to 2010, a DEA run was executed by DEA Excel Solver. DEA analysis estimates advertising productivity for all Super Bowl advertising sponsoring companies based on each advertiser's combination of inputs and outputs compared to those of others in the sample. To get the overall advertising efficiency of

each company, six years of data were combined as one dataset. So, the same advertiser from 2005 to 2010 was regarded one Decision Making Unit (DMU). Next, an event study was conducted to assess Super Bowl advertisers' financial performance in terms of stock market return. Finally, regression was used in order to test the main effects of advertising efficiency and brand reputation on each firm's financial performance. I also tested the moderation effect of advertising efficiency and brand reputation using regression modeling.

3.3.1 Data Envelopment Analysis

The DEA technique has become a useful management science tool, in which multiple inputs and multiple outputs can be involved simultaneously (Luo, 2004). DEA has been used to evaluate marketing's credibility (Luo and Donthu, 2006), retail productivity (Donthu and Yoo, 1998; Kamakura, Lenartowicz and Ratchford, 1996), sales force performance (Boles, Donthu, and Lohtia, 1995; Pilling, Donthu, and Henson, 1999), advertising efficiency (Luo and Donthu, 2001; Luo and Donthu, 2005; Mahajan, 1991), efficiency of supply chain processes (Reiner and Hofmann, 2006; Chen, Liang, and Yang, 2006) and operations efficiency (Ross and Droge, 2004; Kim and Richarme, 2009; Kim and Prater, 2011). This technique is one of the most popular management science tools used to determine a firm's efficiency level from multiple inputs and multiple outputs. In this DEA application, multiple advertising inputs and outputs are used in computing Super Bowl advertisers' efficiency as shown in Table 3.1. A detailed description of the DEA is presented in the Appendix B.

Ad Meter ratings and Nielsen viewership scores are considered as two advertising outputs. Ad Meter scores are collected from USATODAY website and Nielsen viewership data is gathered from Nielsenmedia.com. Advertising cost, frequency, total ad length and number of brands promoted in a single year of Super Bowl advertising for each firm were also treated as advertising inputs. For example, together Budweiser and Bud Light aired nine commercials during the 2005 Super Bowl. Accordingly, the coding scheme designates Anheuser-Busch as having two brands, advertising for a total of 5 minutes, and having a frequency of nine.

Advertising expense is a product of total advertising length and advertising cost per second. For Anheuser-Busch this same year, advertising expense was 24,000,000 dollar.

Table 3.1 DEA Inputs and Outputs

Variable	Definition and Data Source
Ad Outputs	
Ad_Meter	Ratings of Super Bowl ad from <i>USAToday</i> http://www.usatoday.com/money/advertising/admeter/
Ad_Nielsen	Viewership ratings of Super Bowl ad from <i>Nielsen</i> https://www.nielsenmedia.com/monitorplus http://blog.nielsen.com/nielsenwire/media_entertainment/doritos-super-bowl-spot-was-the-most-watched-ad-of-all-time/
Ad Inputs	
Ad expenditure	Total advertising costs
Frequency	Number of ads aired in a Super Bowl
Number of brands	Number of brands promoted in a Super Bowl
Total length	Total length of one company's advertising in a Super Bowl (seconds)

3.3.2 Event Study

This event study examines Super Bowl advertising from 2005 to 2010, calculating expected shareholder returns over an estimation window of 230 trading days that ends 46 days prior to the event. The same method with the first essay is used for the event study.

3.3.3 Data

Data on the stock market prices of firms advertising in the Super Bowl was collected on Wharton Research Data Services (WRDS) from 2005 to 2010, retrieving a total of 136 firm level observations, across six consecutive Super Bowls. Table 3.2 displays variable operationalization and data source.

The *advertising efficiency score* for each Super Bowl advertiser in my dataset was used as a primary predictor variable. I also created a binary variable *advertising efficiency level* by dividing the ad efficiency scores into a high level (1) and a low level (0) using the median split.

Brand reputation was served as another independent variable in the form of two categorical values. Interbrand Global 100 Brand List is the data source for this variable.

Table 3.2 Variable Operationalization

Variable	Operationalization
Standardized Cumulative Abnormal Returns (SCARs)	Cumulative abnormal returns (CARs) divided by the standard deviation of the cumulative abnormal returns adjusted for forecast error (from Event study)
Advertising Efficiency	A single composite score under consideration of multiple advertising inputs and multiple outputs (from DEA) <ul style="list-style-type: none"> • Efficiency score (metric data) • Efficiency level (median split, binary)
Brand Reputation	Binary variable (1 = Global 1000 brand, 0 = Non) http://www.interbrand.com/en/best-global-brands-2010.aspx
Firm Controls	
DotCom	Binary variable (1 = Yes, 0 = No); e.g., Cars.com
Service	Binary variable (1 = Yes, 0 = No); e.g., FedEx
Ad Controls	
Most_Liked	Binary variable (1= Top 10 popular advertising, 0 = No)
Least_Liked	Binary variable (1= Bottom 10 popular advertising, 0 = No)
Year Controls	Binary (1 = each year, 0 = No)

Ad Meter based “Most Liked” and “Least Liked” Super Bowl commercials were treated as a control variable in the current study using a binary scheme (1 = Yes, 0 = No). For example, if a Super Bowl advertiser has a “Most Liked” commercial, it was coded as ‘1’. Five year dummies were also included as time-specific control variables to determine if factors such as weather, game intensity, or team popularity had an impact on advertisers’ financial performance. The nature of the goods marketed by each firm advertising in the Super Bowl as either a service (e.g., CareerBuilder) or a product (e.g., Gatorade). In the same manner, each sponsoring firm was categorized as a dotcom or brick-and-mortar organization.

The current study investigates abnormal stock returns of Super Bowl advertisers, predicting expected shareholder returns using a market model. After obtaining the cumulative

stock returns from the event study, multivariate regression was used to estimate the CAARs (cumulative average abnormal returns) using my independent and control variables. The daily stock price and market indices are obtained from the Wharton Research Data Service (WRDS) at the University of Pennsylvania. The data origin is the Center for Research in Security Price (CRSP) at the University of Chicago. In particular, Standardized Cumulative Abnormal Returns (SCARs) is used as dependent variable, which is Cumulative abnormal returns (CARs) divided by the standard deviation of the cumulative abnormal returns adjusted for forecast error.

3.4 Results and Discussion

3.4.1 DEA Results

Descriptive statistics and correlations appear in Table 3.3, while Table 3.4 presents each advertiser's efficiency score. The mean advertising efficiency is 0.91. The least efficient company is CIBA (2005) with 0.705 advertising efficiency score, while fourteen Super Bowl advertisers were identified as maximally efficient with advertising efficiency score of 1.0 based on my input-oriented constant return to scale (CRS) DEA.

3.4.2. Event Study Result

In my discussion of results, all tests are based on two-tailed statistics. Table 3.5 displays the cumulative average abnormal returns (CAARs) and test statistics in various event windows. Based on portfolio test statistics, CAARs are presented for windows of [0,1], [0,0], [1,3] , and [1,5] , paying special attention to the [1,1] window. During this single day period, Super Bowl advertising results in an average 0.3% increase in advertisers' stock prices for one day right after the Super Bowl based on 'Market Model'. Other benchmark methods' results show that more than 0.33% was earned by Super Bowl advertisers from stock market. The portfolio test statistics using Patell Z ($Z = 3.414$, $p < 0.001$) and generalized statistics ($Z = 1.788$, $p < 0.10$) further supports the robustness of Super Bowl advertisers' positive returns.

Table 3.3 Descriptive Statistics and Correlations

	Descriptive		Correlations	SCAR (0,1)	SAR (1,1)	Efficiency Score	Efficiency Level	Brand Reputation	Service	DotCom	Most Liked	Least Liked	AD_Cost	AD _Length	AD_ Frequency	AD_Brand	AD_Meter
SCAR(0,1)	Mean	0.13	Pearson	1													
	SD	0.73	Significance														
SAR(1,1)	Mean	0.25	Pearson	0.480	1												
	SD	0.85	Significance	0.000													
Efficiency Score	Mean	0.91	Pearson	0.233	0.093	1											
	SD	0.07	Significance	0.011	0.315												
Efficiency Level	Mean	0.54	Pearson	0.232	0.078	0.841	1										
	SD	0.50	Significance	0.011	0.401	0.000											
Brand Reputation	Mean	0.31	Pearson	0.101	0.187	0.072	0.069	1									
	SD	0.47	Significance	0.260	0.035	0.427	0.447										
Service	Mean	0.50	Pearson	-0.016	-0.132	-0.028	0.009	-0.344	1								
	SD	0.50	Significance	0.857	0.143	0.758	0.923	0.000									
DotCom	Mean	0.15	Pearson	-0.025	-0.081	0.152	0.217	-0.237	0.419	1							
	SD	0.36	Significance	0.785	0.370	0.093	0.016	0.007	0.000								
MostLiked	Mean	0.18	Pearson	0.113	0.040	0.347	0.293	0.361	-0.196	-0.030	1						
	SD	0.39	Significance	0.205	0.653	0.000	0.001	0.000	0.026	0.735							
LeastLiked	Mean	0.18	Pearson	-0.115	-0.064	-0.247	-0.165	-0.095	-0.219	-0.022	-0.063	1					
	SD	0.38	Significance	0.199	0.473	0.006	0.068	0.280	0.013	0.803	0.475						
AD_Cost	Mean	6087398	Pearson	0.089	0.108	0.135	0.137	0.473	-0.271	-0.111	0.582	0.124	1				
	SD	6149450	Significance	0.336	0.242	0.137	0.131	0.000	0.002	0.223	0.000	0.170					
AD_Length	Mean	68.90	Pearson	0.071	0.097	0.123	0.125	0.469	-0.276	-0.115	0.581	0.141	0.995	1			
	SD	68.47	Significance	0.445	0.295	0.174	0.169	0.000	0.002	0.205	0.000	0.119	0.000				
AD_Frequency	Mean	1.98	Pearson	0.027	0.077	0.151	0.122	0.455	-0.255	-0.106	0.559	0.151	0.954	0.964	1		
	SD	1.83	Significance	0.773	0.402	0.096	0.179	0.000	0.004	0.245	0.000	0.095	0.000	0.000			
AD_Brand	Mean	1.35	Pearson	0.143	0.151	-0.055	-0.042	0.361	-0.231	-0.188	0.376	0.139	0.792	0.772	0.736	1	
	SD	0.80	Significance	0.120	0.101	0.545	0.641	0.000	0.010	0.038	0.000	0.126	0.000	0.000	0.000		
AD_Meter	Mean	12.66	Pearson	0.036	0.075	0.220	0.186	0.458	-0.245	-0.090	0.593	0.089	0.944	0.956	0.991	0.694	1
	SD	13.09	Significance	0.697	0.416	0.014	0.040	0.000	0.006	0.324	0.000	0.326	0.000	0.000	0.000	0.000	
AD_Nielsen	Mean	64.66	Pearson	0.041	0.077	0.213	0.172	0.460	-0.254	-0.094	0.557	0.157	0.949	0.956	0.992	0.725	0.984
	SD	58.50	Significance	0.658	0.404	0.018	0.057	0.000	0.005	0.302	0.000	0.084	0.000	0.000	0.000	0.000	0.000

Table 3.4 Advertising Efficiency Score

2010	Score	2009	Score	2008	Score
Emerald	1.000	Teleflora	0.928	Kraft Foods	1.000
Google	0.971	Denny's	0.960	Garmin	0.909
Roll INTL	0.957	Taco Bell	0.918	Taco Bell	0.916
Sketchers	1.000	Monster.com	0.981	T-Mobile	0.930
DODGE	0.977	E-Trade	0.987	E*TRADE	1.000
Dennys	1.000	Toyota	0.811	SalesGenie.com	0.844
taco bell	1.000	Paramount	0.905	Toyota	0.931
MONSTER WORLDWIDE	0.988	Cars.com	0.990	Paramount Pict	0.855
E-Trade	1.000	Bud Light	0.980	GlaxoSmithKlin	0.977
Paramount Pictures	0.935	Sony	0.881	Victoria's Sec	0.969
Cars.com	0.970	H&R Block	0.902	FedEx	1.000
Honda	1.000	CareerBuilder.com	0.988	Budweiser	0.991
INTEL	0.963	Castrol	0.992	Cars.com	0.935
Anheuser	0.968	Kellogg's Frosted Flakes	0.923	Sony Pictures	0.913
Levi Strauss	0.916	Walt Disney Studios	0.942	CareerBuilder.	0.883
Career Bulider	0.928	Doritos/Cheetos	0.827	Unilever	0.894
Unilever	0.950	GE	0.952	DISNEY WALT CO	0.929
Walt	0.966	Universal Studios	0.886	Procter & Gamb	0.980
MOTOROLA	0.997	Coca-Cola	0.954	Hershey's	0.885
CADBURY SCHWEPPEs	0.955			Pepsi-Cola	0.921
Frito-Lay	1.000			General Motors	0.867
Universal Park	0.904			Universal Pict	0.907
Coca-Cola	0.987			Coca-Cola	0.975
				Dell Computers	0.874

Table 3.4 - *Continued*

2007	Score	2006	Score	2005	Score
DIAMOND FOODS	0.972	FIDELITY NATIO	0.878	CIBA SPECIALTY	0.705
PRUDENTIAL FIN	0.899	DIAMOND FOODS	0.870	YUM BRANDS INC	1.000
GARMIN LTD	0.832	OVERSTOCK COM	0.850	TIME WARNER IN	0.804
ENERGIZER HOLD	0.926	YUM BRANDS INC	0.875	TOYOTA MOTOR C	0.832
BLOCKBUSTER IN	0.952	TIME WARNER IN	0.818	STAPLES INC	0.849
LIONS GATE ENT	0.826	OUTBACK STEAKH	0.873	VIACOM INCA	0.770
YUM BRANDS INC	0.984	TOYOTA MOTOR C	0.859	FEDEX CORP	0.852
DEUTSCHE TELEK	0.962	C B S CORP NEW	0.852	HONDA MOTOR LT	0.812
E TRADE FINANC	0.921	FEDEX CORP	0.962	BANK OF AMERIC	0.797
REVLON INCA	0.875	HONDA MOTOR LT	0.930	ANHEUSER BUSCH	1.000
INFOUSA INC NE	0.721	ANHEUSER BUSCH	0.992	SONY CORP	0.854
TOYOTA MOTOR C	0.891	STARWOOD HOTEL	0.988	LILLY ELI & CO	0.854
FEDEX CORP	0.936	GANNETT INC	0.990	GANNETT INC	1.000
HONDA MOTOR LT	0.867	SPRINT NEXTEL	0.982	MCDONALDS CORP	0.787
ANHEUSER BUSCH	1.000	UNILEVER PLC	0.933	UNILEVER N V	0.815
GANNETT INC	0.954	DISNEY WALT CO	0.720	DISNEY WALT CO	0.837
SPRINT NEXTEL	0.877	MOTOROLA INC	0.869	CADBURY SCHWEP	0.890
HEWLETT PACKAR	0.907	PROCTER & GAMB	0.870	PEPSICO INC	0.875
DISNEY WALT CO	0.925	BAYER A G	0.849	GENERAL MOTORS	0.821
PHILLIPS VAN H	0.880	PEPSICO INC	0.859		
PEPSICO INC	0.891	GENERAL MOTORS	0.858		
GENERAL MOTORS	0.779				
COCA COLA CO	0.979				

Table 3.5 CAARs for Super Bowl Advertisers (2005-2010)

Benchmark Method	Benchmark Model Days	Mean Cumulative Abnormal Return	Precision Weighted CAAR	Positive: Negative	Patell Z	Portfolio Time-Series (CDA) t	Generalized Sign Z
Market Model	1, 1	0.30%	0.40%	56%:44%)	3.414***	1.226	1.788\$
	0, 1	0.08%	0.22%	54%:46%	1.354	0.221	1.444
	1, 5	0.56%	0.63%	54%:46%	2.420*	1.005	1.273
Market Adjusted Return Model	1, 1	0.33%	0.51%	55%:45%)	3.222**	1.251	1.785\$
	0, 1	0.07%	0.26%	55%:45%)	1.161	0.174	1.785\$
	1, 5	0.64%	0.88%	54%:46%	2.464*	1.079	1.442
	1, 3	0.03%	0.28%	52%:48%	1.031	0.062	1.098
Comparison-Period Mean Adjusted Returns	1, 5	1.52%	1.13%	63%:37%>>>	2.693**	1.134	3.298***
	1, 3	0.52%	0.48%	57%:43%)	1.476	0.503	1.745\$
Unadjusted Raw Returns	1, 5	1.71%	1.41%	68%:32%>>>	3.378***	1.28	4.209***
	1, 3	0.64%	0.65%	64%:36%>>>	2.006*	0.616	3.351***

The symbols \$, *, **, and *** denote statistical significance at the 0.10, 0.05, 0.01 and 0.001 levels, respectively, using a two-tail test. The symbols (< or >) etc. correspond to \$, * and show the direction and generic one-tail significance of the generalized sign test.

3.4.3 Cross-Sectional Analysis Result

Using regression modeling, I tested the impact of the advertising efficiency score predictors and other control variables on Super Bowl advertisers' abnormal returns for the [0,1] (summarized in Table 3.6). In the regression models, standardized abnormal returns were used as the dependent variable in order to mitigate heteroscedascity (Wiles and Danielova, 2009).

Model 1 is not significant ($F_{(9, 118)} = 1.383$; $R^2 = 0.102$, $Adjusted R^2 = 0.028$). Two control variables included to test the impacts of positive and negative word of mouth are not related to SCAR (0,1). Result shows that Super Bowl advertisers' financial performance is positively associated with "Most Liked" ($b = 0.127$, $p = 0.478$) and negatively related to "Least Liked" rating ($beta = -0.139$, $p = 0.473$). Although parameters estimated have signs direction, in the expected, their impacts are found to be insignificant.

The introduction of the advertising efficiency score results in an insignificant Model 2 ($F_{(10, 118)} = 1.435$, $p = 0.175$; $R^2 = 0.117$, $Adjusted R^2 = 0.036$). Adding brand reputation and interaction term between advertising efficiency score and brand reputation to Model 2 fails to improve both coefficients of determination and model significance.

However, main effects and the interaction effect of advertising efficiency and brand reputation are significant in Model 3. Advertising efficiency score and brand reputation have a significant positive impact on Super Bowl advertisers' financial performance. Interestingly, the interaction between advertising efficiency and brand reputation is found to be negative. Therefore, I adopted the binary advertising efficiency level variable (high vs. low) as an alternative for hypotheses testing. Two separate cross-sectional regression analyses also permit us to test specific hypotheses and to examine the impact of advertising efficiency level and brand reputation.

Table 3.6 Cross Sectional Regression Results (DV=SCARs in percentage over days 0 to 1)

	Model 1			Model 2			Model 3		
	B	t-value	sig.	B	t-value	sig.	B	t-value	sig.
(Constant)	0.222	1.226	0.223	-0.017	-0.074	0.941	-0.139	-0.596	0.552
Firm Controls									
Service	-0.039	-0.248	0.804	-0.043	-0.279	0.780	-0.032	-0.202	0.840
DotCom	-0.097	-0.462	0.645	-0.150	-0.714	0.477	-0.190	-0.910	0.365
Time Controls									
Year2009	0.076	0.299	0.766	0.162	0.632	0.529	0.135	0.530	0.597
Year2008	0.275	1.227	0.222	0.369	1.615	0.109	0.368	1.645	0.103
Year2007	-0.266	-1.178	0.241	-0.136	-0.577	0.565	-0.130	-0.564	0.574
Year2006	-0.025	-0.106	0.916	0.124	0.497	0.621	0.133	0.541	0.590
Year2005	-0.360	-1.497	0.137	-0.159	-0.601	0.549	-0.194	-0.746	0.457
Ad Controls									
MostLiked	0.127	0.711	0.478	0.038	0.208	0.836	-0.006	-0.030	0.976
LeastLiked	-0.139	-0.720	0.473	-0.106	-0.550	0.584	-0.094	-0.494	0.622
Advertising Efficiency (H1): Score				1.750	1.345	0.182	2.768	1.948	0.054 *
Brand Reputation (H2)							3.540	1.735	0.086 *
Advertising Efficiency Score*Brand (H3)							-3.783	-1.697	0.093 *
N		119			119			119	
R2		0.102			0.117			0.143	
Adjusted R2		0.028			0.036			0.046	
F-Value		1.383			1.435			1.473	
F-Probability		0.204			0.175			0.146	

* significant at the 10% level, ** significant at the 5% level, ***significant at the 1% level

When advertising efficiency level is used as an independent variable in Model 4 and Model 5 (see Table 3.7). Model 4 fails to achieve significance ($F_{(10, 118)} = 1.574$; $R^2 = 0.127$, $Adjusted R^2 = 0.046$) and standardized abnormal returns are not positively or negatively related to control variables. However, adding brand reputation and the interaction term in Model 5 improves model fit and achieve significance, with notably higher values for R^2 and $Adjusted R^2$. Finally, advertising efficiency level, brand reputation and the interaction term are included in the model, the regression equation also results in a significant model ($F_{(12, 118)} = 1.903$, $p < .05$; $R^2 = 0.177$, $Adjusted R^2 = 0.084$) with improved predictability.

Hypothesis 5 predicted that high Super Bowl advertising efficiency level would be associated with higher financial performance. I find support for this hypothesis (SCAR [0,1]). In fact, advertising efficiency level is positively related to abnormal returns in Model 4 ($b = .285$, $p < 0.1$) and in Model 5 ($b = .504$, $p < 0.01$) respectively, suggesting that if a Super Bowl advertiser efficiently transfers its advertising inputs to favorable advertising outputs, that firm should experience higher financial rewards in the stock market.

Consistent with Hypothesis 6, the main effect of brand reputation is positively associated with Super Bowl advertisers' abnormal return ($b = .426$, $p < 0.05$). Investors, as predicted, appear to be sensitive to brand reputation when they make investment decisions immediately following Super Bowl events. As a mass communication tool, Super Bowl advertising is more effective and appropriate for advertisers who have a strong brand reputation and have accrued substantial customer-based brand equity.

Hypothesis 7 predicts a positive interaction effect between advertising efficiency and brand reputation. However, my regression result show a significantly negative interaction term ($b = -.682$, $p < 0.05$). Counter my expectations, the stock market tends to react negatively to high efficient Super Bowl advertisers who also have a strong high brand reputation.

Financial performance for one day (SAR [1, 1]) after the Super Bowl is adopted for further testing of hypotheses using Model 6, which is significant (Model 6, $F_{(12, 118)} = 2.115$, p

<.05; $R^2 = 0.193$, *Adjusted R*² = 0.102). Model 6 provides support for Hypothesis 1, which predicts higher SCARs for advertisers with high level of advertising efficiency. Consistent with the expectation, a high level of advertising efficiency ($b = .389$, $p < 0.1$) is positively associated with abnormal returns. Hypothesis 2 is also supported by Model 6 result. As predicted, brand reputation is positively related to abnormal returns ($b = .633$, $p < 0.05$). However, contrary to my expectations, Model 6 yields a negative interaction between advertising efficiency and brand reputation ($b = -.624$, $p < 0.1$).

3.5 Summary and Implications

3.5.1 Summary

The Super Bowl's audience reach and audience demographics, cultural visibility, social viewing context, viewer attentiveness, and potential impact on brand performance motivate many advertisers to consider it as an advertising vehicle. However, exposure frequency, and image risks provide a deterrent to this ad placement strategy.

Prior research on Super Bowl advertising suggests that advertising contextual variables such as ad frequency and USA Today's Ad Meter ratings influence investor responses (Fehle, Tsyplakov, and Zdorvtsov 2005). However, several recent studies advocate using an efficiency-based approach (Luo and Donthu, 2001; Luo and Donthu 2006), and warn against pouring large into Super Bowl advertising indiscriminately (Kim, Freling, and Grisaffe, 2011). My results coalesce with this research, and suggest focusing "doing things in the right manner" rather than "doing the right things."

Table 3.7 Cross Sectional Regression Results (IV=Advertising Efficiency Level)

	Model4 (DV=SCAR[0,1])			Model5 (DV=SCAR[0,1])			Model6 (DV=SAR[1,1])		
	B	t-value	sig.	B	t-value	sig.	B	t-value	sig.
(Constant)	-1.464	-1.156	0.250	-2.415	-1.764	0.081	-0.049	-0.181	0.857
Firm Controls									
Service	-0.036	-0.228	0.820	-0.023	-0.140	0.889	-0.240	-1.310	0.193
DotCom	-0.122	-0.579	0.564	-0.127	-0.600	0.550	-0.031	-0.129	0.898
Time Controls									
Year2009	0.163	0.624	0.534	0.103	0.390	0.697	0.257	0.869	0.387
Year2008	0.346	1.510	0.134	0.342	1.500	0.137	0.197	0.762	0.448
Year2007	-0.145	-0.599	0.550	-0.132	-0.549	0.584	-0.028	-0.106	0.916
Year2006	0.085	0.339	0.735	0.072	0.288	0.774	0.782	2.747	0.007
Year2005	-0.166	-0.593	0.554	-0.205	-0.736	0.463	-0.074	-0.246	0.806
Ad Controls									
MostLiked	0.043	0.230	0.819	0.059	0.304	0.761	-0.175	-0.812	0.419
LeastLiked	-0.082	-0.414	0.680	-0.047	-0.239	0.811	-0.194	-0.882	0.380
Advertising Efficiency (H1): Level	0.285	1.748	0.083 *	0.504	2.765	0.007 ***	0.389	1.842	0.068 **
Brand Reputation (H2)				0.426	2.001	0.048 **	0.633	2.571	0.012 **
Advertising Efficiency Level*Brand(H3)				-0.682	-2.496	0.014 **	-0.624	-1.972	0.051 *
N		119			119			119	
R2		0.127			0.177			0.193	
Adjusted R2		0.046			0.084			0.102	
F-Value		1.574			1.903			2.115	
F-Probability		0.124			0.042			0.022	

* significant at the 10% level, ** significant at the 5% level, ***significant at the 1% level

The current study examines how the stock market reacts to advertising efficiency in the context of Super Bowl advertising. An event study was conducted to estimate the abnormal stock returns of Super Bowl advertisers. Results demonstrate that Super Bowl advertising from 2005 to 2010 was positively related to sponsoring firms' abnormal stock returns, suggesting that advertising in the world's most expensive vehicle may be worth it. Next, DEA application was adopted to determine the capability of Super Bowl advertisers to convert advertising inputs into desirable outputs.

Cross-sectional regression analysis was applied to test the impact of advertising efficiency on Super Bowl advertisers' abnormal returns. Results show that advertising efficiency is positively associated with abnormal return, indicating that efficient conversion of advertising inputs to outputs positively influences investors. Along with advertising efficiency, brand reputation also has positive impact on stock return for Super Bowl advertisers. However, contrary to expectations, the relationship between advertising efficiency and abnormal returns for Super Bowl advertisers are negatively moderated by brand reputation.

3.5.2 Contributions and Implications

Theoretically, this study extends the advertising-finance interface by explaining the relationship between Super Bowl advertisers' performance and advertising efficiency. While prior research has explored annual sales, profits, Tobin's Q, and analyst recommendation as indicators of firms' financial performance of advertising (Luo and Donthu, 2006; Wang 2010), the current study is the first to link advertising efficiency to short term abnormal stock returns. Specifically, this study shows that the stock market reacts positively to high advertising efficiency of Super Bowl advertisers.

From a practitioner's perspective, advertisers also should think twice about allocating so much money for a single advertising exposure. Research suggests that a minimum of three ad exposures is required to exert a significant impact on purchase intentions (Tellis, 1997). In support of this assertion, recent survey results suggest only 7.1% of consumers believe a Super

Bowl ad has influenced them to buy products from the advertisers (National Retail Federation, 2010). Simply pouring the large amount of the advertising expenditure cannot guarantee big financial reward. Therefore, advertisers must consider how to efficiently convert advertising effort and resource to desirable advertising outcome. Poor efficiency in generating positive advertising outcomes discourages most advertisers from being rewarded by stock market.

From an investor's perspective, individuals attempt to obtain accurate and appropriate information when making investment decisions, eventually resulting in a sound investment. However, stock market movement does not always explain the dynamics of shareholder valuations. Given this, considering marketing and financial information simultaneously investors can assort when they make investment decisions. Investors' decision making should be based not only on prior stock market performance but also on a company's advertising efficiency and brand equity. In this sense, information about the marketing-finance interface offers new investment criteria, leading to more deliberate investment.

CHAPTER 4

CONCLUSION TO DISSERTATION

4.1 Summary

This dissertation investigates the relationship between Super Bowl advertising and advertisers' market valuation. The first essay identifies several factors that influence the financial rewards of this media-placement strategy. Specifically, I examine the impact of each ad's featured characters and appeals, and the product benefits promoted, on abnormal stock returns for sponsoring companies that appear in Super Bowl ads. Event study results show that Super Bowl advertising from 2004 to 2008 is positively related to abnormal stock returns for advertisers. Cross-sectional regression analyses indicate that market value of Super Bowl advertisers is positively related to likeable characters, emotional appeals, and approach messaging. The combined use of likeable ad characters with either emotional ad appeals or approach messages is also positively associated with firm valuation. The interplay between *ad characters, emotional appeals, and the approach/avoidance messaging* in a given Super Bowl ad determines its relative effectiveness. The most successful Super Bowl ads appear to be approach-oriented with likeable ad characters, or emotionally-based with likeable ad characters. Leaving out any of these key ingredients can result in a less positive impact. In fact, certain incongruous combinations (e.g., ads featuring rational appeals with likeable characters, or likeable characters with avoidance messaging) may negatively affect the recipe

The second essay examines the relationship between advertising efficiency and the market valuation of Super Bowl advertisers. First, stock market reactions to Super Bowl advertising are tracked. Event study results show that Super Bowl advertising from 2005 to 2010 is positively related to abnormal stock returns for advertisers. Next, the impact of advertising efficiency on the financial rewards of this media-placement strategy is examined.

Data Envelopment Analysis (DEA) is used to assess advertising executional efficiency. Four advertising executional factors were considered as DEA inputs: (1) advertising expense, (2) advertising length (seconds), (3) frequency (count) and, (4) number of brands promoted. Two types of advertising effectiveness were included as DEA outputs: (1) Ad Meter ratings; and (2) Nielsen ratings. Cross-sectional regression analyses indicate that advertising efficiency is positively associated with cumulative abnormal stock returns of Super Bowl advertisers. These findings suggest that efficient conversion of advertising inputs to advertising outputs matters in generating positive abnormal returns. Along with advertising efficiency, brand reputation is found to have positive impact on Super Bowl advertisers' financial performance. A negative interaction between advertising efficiency and brand reputation is observed contrary to expectation.

4.2 Future Research

Despite these contributions, my study has some limitations and leaves several questions to future research. Because this event study approach uses the CRSP database, companies that are not listed in the CRSP could not be included in my analyses. For example, Hyundai Motor Company, a newcomer to Super Bowl advertising, was not listed in the CRSP and thus was excluded. Further, this study measures financial rewards using stock market valuation, but future research might consider other dependent variables such as sales, Net Present Value (NPV), and hit rates or number of visits to a company's Internet website (Yaveroglu and Donthu, 2008), as Super Bowl advertising might facilitate the desire of consumer information search for specific companies advertised during the Super Bowl. With my study's unique focus on investor behavior, new metrics could also be tracked such as Internet traffic on investor sections of company websites, or on sites such as Yahoo Finance.

I take advertising repetition into account as an ad-related control variable, but did not consider advertising competition, which may interfere with recall and recognition of the brand name and advertising claims (Laroche, Cleveland, and Maravelakis, 2006; Tomkovick, Yelkur,

and Christians, 2001). Given that advertising competition might lead to memory intervention, it could negatively impact the financial performance of the company sponsoring advertising for a given product. Testing these expectations was beyond the scope of the present study, but this should be addressed in future research on Super Bowl advertising.

Finally, the fit between the Super Bowl venue and brands advertised during the game may be critical in assessing and predicting associated financial rewards. What happens when a brand or a company becomes strongly associated with a particular event, as Anheuser-Busch has become tied to the Super Bowl? An event like the Super Bowl may be characterized by a set of brand associations that become linked with brands advertised during the event (Keller, 1993), meaning that advertising effectiveness may depend on prior familiarity with both the advertising medium and the advertised brand. This advertising medium-brand relationship should reflect consumers' evaluations or perceptions of similarity between the Super Bowl and a given brand. Given my findings about the importance ad element congruities on firm financial performance, congruities between the event characteristics and a brand's image may also influence a firm's financial performance. Future research should take into consideration potential interactions between congruities in advertising context and content in predicting Super bowl ad impact on the market performance of advertising firms.

APPENDIX A
DETAILS ON EVENT STUDY REGRESSION EQUATION

The normal performance of stocks is estimated based on the following Ordinary Least Square (OLS) model:

$$R_{jt} = \alpha_j + \beta_j R_{mt} + e_{jt}$$

where R_{jt} is the observed daily return for company j on day t , α_j is the intercept, β_j is the regression coefficient for the company j , R_{mt} is the observed daily return on the market index on day t , and e_{jt} is the error term of the company j on the trading day t . In the regression equation model, a company's stock return is the dependent variable and the daily return on the market index is independent variable. Therefore, the model shows how a company's stock price has performed compared to the overall market conditions (Kim and Morris, 2003).

This study uses the CRSP Equally Weighted Return as the return on market index in place of R_{mt} because it reflects the performance of a weighted average portfolio of all stocks. The unexpected shareholder return, abnormal returns (AR), in event study can be calculated as follows (MacKinlay, 1997; Srinivasan and Hanssens, 2009):

$$AR_{jt} = R_{jt} - (a_j + b_j R_{mt})$$

where $(a_j + b_j R_{mt})$ is the predicted stock return on day t based on the company j 's regression equation and R_{jt} is the actual stock return of company j day t . Using this equation, the cumulative abnormal returns for the event period can be calculated by adding all the abnormal returns in the event period as follows:

$$CAR(T1, Ti) = \sum_{t=T1}^{Ti} AR_t$$

APPENDIX B
DETAILS ON DATA ENVELOPMENT ANALYSIS

Building on the ideas of Farrell (1957), the seminal work “Measuring the Efficiency of Decision-Making Units” by Charnes, Cooper & Rhodes (1978) applies linear programming to estimate an empirical production technology frontier for the first time (Farrell, 1957; Charnes, Cooper and Rhodes, 1978). Since then, there have been a large number of books and journal articles written on DEA or applying DEA to various sets of problems. In addition to comparing efficiency across DMUs within an organization, DEA has been used to compare efficiency across firms. There are several types of DEA methodologies, with the most basic being CCR based on Charnes, Cooper & Rhoades. However there are also more sophisticated DEA methodologies which address varying returns to scale, either CRS (constant returns to scale) or VRS (variable returns to scale) (Zhu, 2003).

Grounded in microeconomic theory, DEA efficiency provides guidelines and benchmarks for both public and private enterprises to achieve maximized desirable ends at minimized costs. DEA measurement has been used to evaluate and compare educational departments (schools, colleges and universities), health care (hospitals, clinics) prisons, agricultural production, banking, armed forces, sports, market research, transportation (highway maintenance), courts, benchmarking, index number construction and many other applications.

In addition, DEA optimizes on each individual observation and provides a ratio score to indicate the relative efficiency performance against the set of Pareto-efficient frontiers. An efficient observation is one for which no other observations, or linear combination of observations in the sample, generate as much as or more outputs given the level of inputs (or consume as much as or less inputs given the level of outputs). DEA is best characterized by the following (Luo, 2004):

- A focus on individual observations in contrast to populations average
- Production of single aggregate measure for each decision making unit (DMU) in terms of its input factors (independent variables) to produce desired outputs (dependent variables)
- Simultaneous use of multiple outputs and multiple inputs, where each is stated in different units of measurement
- Ability to adjust to exogenous variables

- Ability to incorporate categorical (dummy) variables
- No required specification or knowledge of a priori weights or prices for the inputs or outputs and value free
- No restrictions on the functional form of the production relationship
- Ability to accommodate judgment when desired
- Production of specific estimates for desired changes in inputs and/or outputs for projecting DMUs below the efficient frontier onto the efficient frontier
- Pareto optimal
- A focus on the revealed best-practice frontier rather than on the central tendency properties of frontier
- Satisfaction of strict equity criteria in the relative evaluation of each DMU
- Relationship with performance evaluation and benchmarking

The efficiency of one DMU1 can be obtained as a solution to maximize its efficiency subject to the efficiency of all DMUs being less than or equal to 1. The solution produces the weights which are most favorable to the DMU1 and provides a measure of efficiency for that DMU1. The solution produces the weights which are most favorable to the DMU1 and provides a measure of efficiency for the DMU1. The algebraic model is as follows (Kim 2009):

$$\begin{aligned} \text{Max } h_0 &= \frac{\sum_r \text{weight}_r \text{Output}_r \text{DMU}_1}{\sum_i \text{weight}_i \text{Input}_i \text{DMU}_1} \\ \text{subject to } & \frac{\sum_r \text{weight}_r \text{Output}_r \text{DMU}_j}{\sum_i \text{weight}_i \text{Input}_i \text{DMU}_j} \leq 1 \quad \text{for each DMU}_j, \\ & \text{weight}_r, \text{ weight}_i \geq \varepsilon \end{aligned}$$

REFERENCES

- Aaker, D. A. (1996), *Building Strong Brands*, New York, NY: The Free Press.
- Agrawal, J. and W.A. Kamakura. "The Economic Worth of Celebrity Endorsers: An Event Study Analysis." *Journal of Marketing* 59, 3 (1995): 56-62.
- Aiken, LS, and S.G. West. *Multiple Regression: Testing and Interpreting Interactions*. Thousand Oaks, CA: Sage, 1991.
- Alba, J.W. and J.W. Hutchinson. "Dimensions of Consumer Expertise." *Journal of Consumer Research* 13, March (1987): 411-54.
- Albers-Miller, N. and M. Royne Stafford. "An International Analysis of Emotional and Rational Appeals in Services vs. Goods Advertising." *Journal of Consumer Marketing* 16, 1 (1999): 42-57.
- Amos, C., G. Holmes, and D. Strutton. "Exploring the Relationship between Celebrity Endorser Effects and Advertising Effectiveness." *International Journal of Advertising* 27, 2 (2008): 209-34.
- Apostolopoulou, A., J. Clark, and J.M. Gladden. "From H-Town to Mo-Town: The Importance of Super Bowl Entertainment." *Sport Marketing Quarterly* 15, 4 (2006): 223-31.
- Asuncion, A.G. and W.F. Lam. "Affect and Impression Formation: Influence of Mood on Person Memory." *Journal of Experimental Social Psychology* 31 (1995): 437-64.

Barber, B.M. and J.D. Lyon. "Detecting Abnormal Operating Performance: The Empirical Power and Specification of Test-Statistics." *Journal of Financial Economics* 41 (1996): 359-99.

Barsalou, L.W. "Ideals, Central Tendency and Frequency of Instantiation as Determinants of Graded Structure." *Journal of Experimental Psychology: Learning, Memory and Cognition* 11, October (1982): 629-54.

Battista, S. "True Confessions of a Super Bowl Ad Virgin: LA Exec Offers Play-by-Play Behind Bold Brand Buy." *Advertising Age*, February 4, 2008.

Baumeister, R.F. and B.J. Bushman. *Social Psychology and Human Nature*. Belmont, CA: Thomson Higher Education, 2008.

Beasley, F.M., M.D. Shank, and R.W. Ball. "Do Super Bowl Viewers Watch the Commercials?" *Sport Marketing Quarterly* 7, 3 (1998): 33-40.

Binder, J.J. "The Event Study Methodology Since 1969." *Review of Quantitative Finance and Accounting* 11 (1998): 111-37.

Bloom, J.K. "Card Brands to Clash in the Super Bowl of Advertising." *American Banker* 163, 15 (1998): 15-6.

Bobinski Jr., G.S. and G.G. Ramirez. "Advertising to Investors: The Effect of Financial-Relation Advertising on Stock Volume and Price." *Journal of Advertising* 23, 4 (1994): 13-28.

Boles, J. S., N. Donthu, and R. Lohtia, "Salesperson evaluation using relative performance efficiency: The application of data envelopment analysis," *Journal of Personal Selling & Sales Management*, 15(3) 1995, 31-49.

Brown, S. J. and J. B. Warner. "Using Daily Stock Returns: The Case of Event Studies." *Journal of Financial Economics* 14, March (1985): 3-31.

Buck, R. "That Super-Watchin'", Super-American Funday." *AdWeek's Marketing Week*, January 13, 1992.

Callcott, M.F. and W.N. Lee. "A Content Analysis of Animation and Animated Spokes-Characters in Television Commercials." *Journal of Advertising* 23, 4 (1994): 1-12.

Chang, C., J. Jiang, and K.A.Kim. "A Test of the Representativeness Bias Effect on Stock Prices: A Study of Super Bowl Commercial Likeability." *Economics Letters* 103 (2009): 49-51.

Charnes, A., W. Cooper, and E. Rhodes, "Measuring the efficiency of decision making units," *European Journal of Operational Research*, 3(6), 1978: 429-444.

Chauvin, K.W. and M. Hirschey. "Advertising, R&D Expenditures, and the Market Value of the Firm." *Financial Management* 22, 4 (1993): 128-37.

Chen, Y., L. Liang, and F. Yang, "A DEA game model approach to supply chain efficiency," *Annals of Operations Research*, 145(1), 2006: 5-13.

Cohen, J, P. Cohen, S.G. West, and L.J. Aiken, L.J. *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences* (3rd Ed.). Mahwah, NJ: Lawrence Erlbaum Associates, 2003. 30

Colander, D., R.P.F.Holt, and B.J. Rosser, Jr. "The Changing Face of Mainstream Economics." *Review of Political Economy* 16, 4 (2004): 485-99.

Copeland, M.T. *Principles of Merchandising*, New York: Arno Press, 1924.

Cutler, B.D., E.G. Thomas, and S.R. Rao. "Informational/Transformational Advertising: Differences in Usage Across Media Types, Product Categories, and National Cultures." *Journal of International Consumer Marketing* 12, 3 (2000): 69-83.

Dahl, D. W., J. Sengupta, and K. D. Vohs. "Sex in Advertising: Gender Differences and the Role of Relationship Commitment." *Journal of Consumer Research* 36, 2 (2009): 215-31.

Donthu, N. and B. Yoo (1998), "Retail productivity assessment using data envelopment analysis," *Journal of Retailing*, 74(1): 89-105.

Dotterweich, D.R. and K.S. Collins. "The Practicality of Super Bowl Advertising for New Products and Companies." *Journal of Promotion Management* 11, 4 (2005): 19-31.

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

Elliot, S. "Advertising." *New York Times*, January 24, 1997.

Fama, E. F., L. Fisher, M. C. Jensen, and R. Roll. "The Adjustment of Stock Prices to New Program Context Information." *International Economic Review* 10, 1 (1969): 1-21.

Farrell, M. J., "The Measurement of Productive Efficiency," *Journal of the Royal Statistical Society Series A*, 120, 3, (1957): 253-281.

Fehle, F., S. Tsyplakov, and V. Zdorovtsov. "Can Companies Influence Investor Behaviour through Advertising? Super Bowl Commercials and Stock Returns." *European Financial Management* 11, 5 (2005): 625-47.

Freeman, M. "Media Wire." *Media Week* 9, 6 (1999): 4-6.

Friedman, L, and M. Wall. "Graphical Views of Suppression and Multicollinearity in Multiple Linear Regression." *The American Statistician*, 59, 2 (2005): 127-136.

Garretson, J.A. and S. Burton. "The Role of Spokescharacters as Advertisement and Package Cues in Integrated Marketing Communications." *Journal of Marketing* 64, 4 (2005): 118-132.

_____ and R.W. Niedrich. "Spokescharacters: Creating Character Trust and Positive Brand Attitudes." *Journal of Advertising* 33, 2 (2004): 25-36.

Golberg, M.E. and G.J. Gorn. "Happy and Sad TV Programs: How They Affect Reactions to Commercials." *Journal of Consumer Research* 14, 3 (1987): 387-403.

Gotlieb, J.B. and D. Sarel. "The Influence of Type of Advertising, Price, and Source Credibility on Perceived Quality." *Journal of the Academy of Marketing Science* 20, 3 (1992): 253-60.

Grinblatt, M. and M. Keloharju. "What Makes Investors Trade?" *Journal of Finance* 56, 2 (2001): 589-616.

Grullon, G., G. Kanatas, and J.P. Weston. "Advertising, Breadth of Ownership, and Liquidity." *Review of Financial Studies* 17, 2 (2004): 439-61.

Gulas, C. S. and M.G. Weinberger. *Humor in Advertising: A Comprehensive Analysis*. Armonk, NY: M.E. Sharpe, Inc., 2006.

Hansen, F., L.Y. Hansen and L. Gronholt. "Modelling Purchase as a Function of Advertising and Promotion." *International Journal of Advertising* 21, (2002): 115-35

Hair, J.F. Jr., W.C. Black, B.J. Babin, and R.E. Anderson. *Multivariate Data Analysis*, (7th Ed.). Upper Saddle River, NJ: Pearson, 2010.

Higgins, E. "Knowledge Activation: Accessibility, Applicability, and Salience." In *Social Psychology: Handbook of Basic Principles*, E.T. Higgins and A.W. Kruglanski, eds.: New York: Guilford, 1996.

Hirshleifer, D. "Investor Psychology and Asset Pricing." *Journal of Finance* 56, 4 (2001): 1533-97.

Horovitz, B. "Ten Rules to Make Ads Magical." *USAToday*, February 3, 2006.

Houston, M.B. and S.A. Johnson. "Buyer-Supplier Contracts Versus Joint Ventures: Determinants and Consequences of Transaction Structure." *Journal of Marketing Research* 37, 1 (2000): 1-15.

Hovland, C.I., I.L. Janis, and H.H. Kelley. *Communication and Persuasion: Psychological Studies of Opinion Change*. New Haven, CT: Yale University Press, 1953.

_____ and W. Weiss. "The Influence of Source Credibility on Communication Effectiveness." *Public Opinion Quarterly* 15, Winter (1951): 635-50.

Hsu, M.K., A.F. Darat, M. Zhong, and S.S. Abosedra. "Does Advertising Stimulate Sales or Mainly Deliver Signals? A Multivariate Analysis." *International Journal of Advertising* 21, (2002): 175-95.

Jaccard, J. and R. Turrisi. *Interaction Effects in Multiple Regression*. Thousand Oaks, CA: Sage Publications, 2003.

Jensen, J. "Movies Turn to Sporting Events to Sell Tickets." *Advertising Age*, May 11, 1998.

Jin, H.S. "Compounding Consumer Interest." *Journal of Advertising* 32, 4 (2003): 29-41.

_____ and X. Zhao. "Effects of Media Coverage on Advertised Brand Recall and Recognition." In *Proceedings of 1999 Conference of the American Academy of Advertising*, Marilyn S. Roberts, ed. Gainesville, FL: University of Florida, 1999.

Johnson, B. "\$100,000 a Second? See How the Super Bowl Got So Expensive: Ad Age Charts the Prices, Ratings and CPMs for Every Game," *Advertising Age*, January 27, 2009.

Kahle, L.R. and P.H. Homer. "Physical Attractiveness of the Celebrity Endorser: A Social Adaptation Perspective." *Psychology and Marketing* 11 (1985): 569-86.

Kahneman, D. and A. Tversky. "On the Psychology of Prediction." *Psychological Review* 80 32 (1973): 237-51.

Kamakura, W. A., T. Lenartowicz, and B. T. Ratchford, "Productivity Assessment of Multiple Retail Outlets," *Journal of Retailing*, 72, 4, (1996): 333-356.

Kamins, M.A. "An Investigation of the „Match-up“ Hypothesis in Celebrity Advertising: When Beauty May Be Only Skin Deep." *Journal of Advertising* 19, 1 (1990): 4-13.

Karrh, J.A. "Does Advertising Influence Investors? Evidence and Research Propositions." *Journal of Current Issues and Research in Advertising* 26, 2 (2004): 1-10.

Keller, K.L. "Conceptualizing, Measuring, and Managing Customer-based Brand Equity." *Journal of Marketing* 57, 1 (1993): 1-22.

Keller, K. L., and D. R. Lehmann, "Brands and Branding: Research Findings and Future Priorities," *Marketing Science*, 25, 6, (2006): 740-759.

Kelley, S.W and L. W. Turley. "The Effect of Content on Perceived Affect of Super Bowl Commercials." *Journal of Sport Management* 18, 4 (2004): 398-420.

Kent, R. J. and C.T. Allen. "Does Competitive Clutter in Television Advertising 'Interfere' with the Recall and Recognition of Brand Names and Ad Claims?" *Marketing Letters* 4, 2 (1993): 175-84.

Kim, C. K., and J. Y. Chung, "Brand Popularity, Country, Image and Market Share: An Empirical Study," *Journal of International Business Studies*, 28, 2, (1997): 361-386.

Kim, J. and J.D. Morris. "The Effect of Advertising on the Market Value of Firms: Empirical Evidence from the Super Bowl Ads." *Journal of Targeting, Measurement and Analysis for Marketing* 12, 1 (2003): 53-65.

Kim, J. W. and E. Prater, "Service Marketing Productivity and Firm Profit: Evidence from U.S. Domestic Airline Companies," *Services Marketing Quarterly*, 32, 3, (2011): 181-198.

Kim, J. W. and M. Richarme, "Applying the Service-Profit Chain to Internet Service Businesses," *Journal of Service Science and Management*, 2, 2, (2009): 96-106

Kim, J. W., T. H. Freling and D. Grisaffe, "When Are Super Bowl Advertising Really Super? An Event Study Analysis," *Journal of Advertising Research*, Accepted

Kotler, P. and G. Armstrong. *Principles of Marketing*, 6th ed. Englewood Cliffs, NJ: Prentice-Hall, 1994.

Kruschke, J.K. and M.K. Johansen. "A Model of Probabilistic Category Learning." *Journal of Experimental Psychology: Learning, Memory, and Cognition* 25, 5 (1999): 1083-1119.

Lancendorfer, K.M., J.L. Atkin, and B.B. Reece. "Animals in Advertising: Love Dogs? Love the Ad!," *Journal of Business Research* 61, 5 (2008): 384-91.

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

Laroche, M., M. Cleveland, and I. Maravelakis. "Competitive Advertising Interference and Ad Repetition Effects: Comparing High-share and Low-share Brands." *International Journal of Advertising* 25, 3 (2006): 271-307.

Lee, Eun-Ju, and David W. Schumann. "Processing Incongruity in Advertising: Combining Theoretical Approaches." *Marketing Theory* June (2004): 59-90.

Luo, X. (2004), "Data envelopment analysis: A management science tool for scientific marketing research," *Journal of Marketing Research*, 42, 3, (2004): 113-116.

_____ and N. Donthu. "Benchmarking Advertising Efficiency." *Journal of Advertising Research* 41, 6 (2001): 7-18.

_____ and _____. "Assessing Advertising Media Spending Inefficiencies in Generating Sales." *Journal of Business Research* 58, 1 (2005): 28-36.

_____ and _____, "Marketing's Credibility: A Longitudinal Investigation of Marketing Communication Productivity and Shareholder Value," *Journal of Marketing*, 70, 4 (2006): 70-91.

MacInnis, D.J. and B.J. Jaworski. "Toward an Integrated Framework of Information Processing from Advertisements." *Journal of Marketing*, 53, October (1989): 1-23.

MacKinlay, A. C. "Event Studies in Economics and Finance." *Journal of Economic Literature* 35, 1 (1997): 13-39.

Mackie, D.M, A.G. Asuncion, and F. Rosselli. "The Impact of Positive Affect on Persuasive Processes." In *Emotion and Social Behavior: Review of Personality and Social Psychology*, M.S. Clark, ed.: Newbury Park, CA: Sage, 1996.

Mahajan, J., "A data envelopment analytic model for assessing the relative efficiency of the selling function," *European Journal of Operational Research*, 53, 2 (1991): 189-205.

Malhotra, N.K. *Marketing Research: An Applied Orientation*, (6th Ed.). Upper Saddle River , NJ : Prentice-Hall, 2010.

Mandler, G. "The Structure of Value: Accounting for „Taste“." In *Affect and Cognition: The 17th Annual Carnegie Symposium on Cognition*, H. Margaret, S. Clarke, and S.T. Fiske, eds: Hillsdale: NJ: Lawrence Erlbaum, 1982.

Mathur, L.K. and I. Mathur. "The Effect of Advertising Slogan Changes on Market Value" *Journal of Advertising Research* 31, January (1995): 59-67.

McAllister, M.P. "Super Bowl Advertising as Commercial Celebration." *The Communication Review* 3, 4 (1999): 403-28.

McAlister, L., R. Srinivasan, and M.C. Kim. "Advertising, Research and Development, and Systematic Risk of the Firm." *Journal of Marketing* 71, 1 (2007): 35-48.

McCarthy, M. "Firms Pick Super Bowl as Prime Time for Kickoff Ads: Companies Like to Introduce Themselves to Viewers During Big Game." *USAToday*, January 2, 2001.

McGuire, W.J. "The Nature of Attitude and Attitude Change." In *Handbook of Social Psychology*, Vol. 3, Gardner Lindzey and Elliot Aronson, eds. Reading, MA: Addison-Wesley, 1969.

McClellan, S. "NBC Bowls Over Competition." *Broadcasting & Cable*, February 2, 1998.

Meenaghan, T. "The Role of Sponsorship in the Communication and Marketing Mix." *International Journal of Advertising* 10, (1991): 35-47.

Mehrabian, A. *Silent Messages*. Belmont, CA: Wadsworth, 1971.

Mizik, N., and R. Jacobson, "The Financial Value Impact of Brand Dimensions," *Journal of Marketing Research*, 45, 1 (2008): 15-32.

Mullman, J. "Under Armour Can't Live Up to Own Hype." *Advertising Age*, November 2, 2009.

Nail, J. "Visibility versus Surprise: Which Drives the Greatest Discussion of Super Bowl Advertisements?" *Journal of Advertising Research* 47, 4 (2007): 412-19.

National Retail Federation. "2010 Super Bowl Intentions and Actions Survey." *Retail Advertising and Marketing Association*, January, 28, 2010.

Neff, J. "Is a Super Bowl Ad Worth \$80,000 a Second?" *Advertising Age*, January 31, 2005.

Newell, S.J., K.V. Henderson, and B. Wu. "The Effects of Pleasure and Arousal on Recall of Advertisements during the Super Bowl" *Psychology & Marketing* 18, 11 (2001): 1135-53.

Nielsen, "The Nielsen Company's Guide to Super Bowl XLIII." New York: The Nielsen Company, January 23, 2009.

Ohanian, R. "Construction and Validation to Measure Celebrity Endorsers' Perceived Expertise, Trustworthiness, and Attractiveness." *Journal of Advertising* 19, 3 (1990): 39-52.

O'Reilly, N., M. Lyberger, L. McCarthy, B. Seguin, and J. Nadeau. "Mega-Special-Event Promotions and Intent to Purchase: A Longitudinal Analysis of the Super Bowl." *Journal of Sport Management* 22, (2008): 392-409.

Pappu, R., P. G. Quester, and R. W. Cooksey, "Country Image and Consumer-based Brand Equity: Relationships and Implications for International Marketing," *Journal of International Business Studies*, 38, 5 (2007): 726-745.

Park, C. W. and M. Young. "Consumer Response to Television Commercials: The Impact of Involvement and Background Music on Brand Attitude Formation." *Journal of Marketing Research* 23, January (1986): 11-24.

Paton, D. "Advertising, Quality, and Sales." *Applied Economics* 34, (2002): 431-8.

Pavelchak, M.A., J.H. Antil, and J.M. Munch. "The Super Bowl: An Investigation into the Relationship Among Program Context, Emotional Experience, and Ad Recall." *Journal of Consumer Research* 15, 3 (1988): 360-7.

Pedersen, P., K.S. Miloch, and P. Laucella. *Strategic Sport Communication*. Champaign, IL: Human Kinetics, 2007.

Petrie, A. *Individuality in Pain and Suffering*. Chicago: University of Chicago Press, 1967.

Petty, R.E. and D.T. Wegener. "Attitude Change: Multiple Roles for Persuasion Variables." In *The Handbook of Social Psychology*, Daniel T. Gilbert, Susan T. Fiske, and Gardner Lindzey, eds. Boston: McGraw-Hill, 1998.

Pilling, B. K., N. Donthu, and S. Henson, "Accounting for the impact of territory characteristics on sales performance: Relative efficiency as a measure of salesperson performance," *Journal of Personal Selling and Sales Management*, 19, 2 (1999): 35-45.

Phillips, B. "The Big Gain." *Progressive Grocer* 85, 11 (2006): 60-4.

Rash, J. "Super Bowl is Most-Watched TV Event Ever." *Advertising Age*, February 8, 2010.

Reiner, G. and P. Hofmann, "Efficiency analysis of supply chain processes," *International Journal of Production Research*, 44, 23 (2006): 5065-5078.

Ross, A. D. and C. Droge, "An analysis of operations efficiency in large-scale distribution systems," *Journal of Operations Management*, 21, 6 (2004): 673-688.

Russell, M.G., J.A. Fortunato, L. Valencia, and N. Burns. "Brand Perceptions of TV Commercials During Super Bowl XXXVIII." Working Paper, Austin, Texas: University of Texas, 2003.

Rust, R. T., T. Ambler, G. S. Carpenter, V. Kumar, & R. K. Srivastava, "Measuring Marketing Productivity: Current Knowledge and Future Directions," *Journal of Marketing*, 68, 4 (2004): 76-89.

Sengupta, J. R.C. Goodstein, and D.S. Boninger. "All Cues are Not Created Equal: Obtaining Attitude Persistence under Low-Involvement Conditions." *Journal of Consumer Research* 23 (1997): 351-61.

Siefert, C.J., R. Kothuri, D.B. Jacobs, R. Levine, J. Plummer, and C. Marci. "Winning the Super „Buzz" Bowl." *Journal of Advertising Research* 49, 3 (2009): 293-303.

Simon, H.A. "Rational Choice and the Structure of Environments." *Psychological Review* 63, 2 (1956): 129-38.

Srinivasan, S. and D.M. Hanssens. "Marketing and Firm Value: Metrics, Methods, Findings, and Future Directions." *Journal of Marketing Research* 46, 3 (2009): 293-312.

Srivastava, R.K., T.A. Shervani, and L. Fahey. "Market-Based Assets and Shareholder Value: A Framework for Analysis." *Journal of Marketing*, 62, 1 (1998): 2-18.

Stafford, M.R. and E. Day. "Retail Services Advertising: The Effects of Appeal, Medium, and Service." *Journal of Advertising* 26, 1 (1995): 57-71.

Steenkamp, Jan-Benedict E. M., Rajeev Batra, and Dana L. Alden, "How Perceived Brand Globalness Creates Brand Value," *Journal of International Business Studies*, 34, 1 (2003): 53-65.

Sternthal, B. and C.S. Craig. "Humor in Advertising." *Journal of Marketing* 37, 4 (1973): 12-8.

Swaminathan, V. and C. Moorman. "Marketing Alliances, Firm Networks, and Firm Value Creation." *Journal of Marketing* 73, 5 (2009): 52-69.

Tellis, G.J. and J. Johnson. "The Value of Quality." *Marketing Science* 26, 6 (2007): 758-73.

_____. "Effective Frequency: One Exposure or Three Factors?" *Journal of Advertising Research* 37, 4 (1997): 75-80.

_____ and D.L. Weiss. "Does TV Advertising Really Affect Sales?: The Role of Measures, Models, and Data Aggregation." *Journal of Advertising* 26, 3 (1995): 1-12.

Tipton, M.M, S. Bharadwaj, and D.C. Robertson. "Regulatory Exposure of Deceptive Marketing and Its Impact on Firm Value." *Journal of Marketing* 73, 6 (2009): 227-43.

Tomkovick, C., R. Yelkur, and L. Christians. "The USA's Biggest Marketing Event Keeps Getting Bigger: An In-depth Look at Super Bowl Advertising in the 1990s." *Journal of Marketing Communications* 7, 2 (2001): 89-108.

Turley, L.W. and S.W. Kelley. "A Comparison of Advertising Content: Business to Business Versus Consumer Services." *Journal of Advertising* 26, 4 (1997): 39-48.

Turner, R. "The Ad Game." *Newsweek*, January 20, 1997.

Vahedra, D. "Top Campaigns for 1995: It's Back to Basic Ad Approaches." *Advertising Age*, March 11, 1996.

Wells, W.D. "Three Useful Ideas." In *Advances in Consumer Research* Volume 13, eds. Richard J. Lutz, Provo, UT: Association for Consumer Research, (1986): 9-11.

Wiles, M.A. and A. Danielova. "The Worth of Product Placement in Successful Films: An Event Study Analysis." *Journal of Marketing* 73, 4 (2009): 44-63.

Woltman Eppers, J.L.C.M., A. Mukherjee, and W.D. Hoyer. "Humor in Television Advertising: A Moment-to-Moment Analysis." *Journal of Consumer Research* 31, 3 (2004): 592-8.

Wu, B. and S. Newell. "Evaluating the Impact of Advertisement Characteristics on Recall during the Super Bowl: A Two Year Comparison." *Marketing Management Journal* 13, 2 (2003): 122-8.

Yaveroglu, I. and N. Donthu. "Advertising Repetition and Placement Issues in On-line Environments." *Journal of Advertising* 37, 2 (2008): 31-43.

Yelkur, R., C. Tomkovick, and P. Traczyk. "Super Bowl Advertising Effectiveness: Hollywood Finds the Games Golden." *Journal of Advertising Research* 44, 1 (2004): 143-59.

Wang, Tien. "Marketing Capability, Analyst Recommendations, and Firm Value," Doctoral Dissertation, The University of Texas at Arlington (2010)

Zhu, J. "Quantitative models for performance evaluations and benchmarking: Data envelopment analysis with spreadsheets and DEA EXCEL solver," Norwell, MA: Kluwer Academic Publishers Group, 2003.

BIOGRAPHICAL INFORMATION

Jin-Woo Kim received his Ph.D. in Business Administration with a major in Marketing and a minor in Operation/Supply Chain Management from the University of Texas at Arlington. He also received his M.A. in Marketing and a B.A. in Business Administration. His research interests include marketing strategy, advertising effectiveness, international marketing, and marketing modeling. He will continue to work on topics of his research interests as he pursues a strong academic career in research and teaching