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The Effects of Advertising and Publicity on
Corporate Reputation and Sales Revenue: 1985-2005

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The Effects of Advertising and Publicity on

Corporate Reputation and Sales Revenue: 1985-2005

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Dedication

I dedicate this work to my parents, Mr. Won-ki Kim and Ms. Hyun-goo Lee,

my husband, Seckjun Jang, and my little girl, Jinna K. Jang.

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With the increasing call for accountability of significant marketing communication spending, quantifying and measuring the contribution of marketing communication to market performance is increasingly a requirement for sustainability in all management practices. In addition, the resource-based view (RBV) suggests that a firm's marketing communication creates intangible market-based assets and that these assets strengthen a firm's market and financial performance. Recent developments of the market-based assets theory focus on corporate reputation as an intangible market-based asset, suggesting that a favorable reputation is an intangible asset that increases a firm's performance.

This study examined the effect of advertising and publicity on corporate reputation and market performance and hypothesized that a firm's advertising and publicity generated favorable corporate reputations and high levels of sales revenues in certain firms. Hypotheses were tested by a time-series analysis using the panel data of 18 companies over a 21-year period from 1985 to 2005.

The results indicated that advertising and publicity have significant effects on corporate reputation for certain companies. Other variables, such as a firm's dividend yield to investors, market value, diversification, and profitability were significantly related to assessments of corporate reputation for certain companies, but the direction of the relationship varied from company to company. For example, as expected, low dividend yields induce high assessments of corporate reputation for certain companies. A firm's current market value also affects assessments of a firm's reputation. More diversified companies yield lower corporate reputations for certain companies.

Regarding the relationship between marketing communication and sales revenues, advertising and publicity have significant effects on sales revenues for some companies. A firm's R&D expenditures, the focus of the firm, and firm size also showed a significant positive relevance to sales revenues for certain companies.

Table of Contents

List of Tables

List of Figures

CHAPTER 1

INTRODUCTION

Marketing communication is a key tool in developing a firm's competitive advantage. Keller (2001) defines marketing communication at the brand level as the voice of a brand and the means by which companies can establish a dialogue with customers concerning their product offerings. Marketing communication can contribute to greater brand purchase and sustained customer loyalty by imbuing products and services with additional meaning and value. In a cluttered, complex marketplace, marketing communication can allow products and services to stand out and help consumers appreciate their comparative advantages.

There is no doubt that advertising is the foremost marketing communication tool. Advertising not only signals product and firm characteristics but also presents firms in a favorable light. As traditional advertising struggles to catch consumers' attention, however, public relations has been recognized as another vital marketing communication tool because of its credibility and reliability (*Economist,* 2006; Ries and Ries, 1996). One of the strengths of public relations in marketing is to generate favorable publicity for products or companies in media. A company's message that is presented through the media is often considered more credible than a direct corporate comtmunication (Gandy, 1982).

Due to its source credibility, publicity is likely to have more credibility compared to advertising. Also, favorable publicity can enhance the effect of advertising. For example, advertising professionals recognize that news coverage about an advertising campaign or product can augment media campaign expenditures, potentially building expectations and heightening awareness of the advertising or products (Harris, 1998).

Thus, companies invest significant expenditure and effort in marketing communication. Specifically, spending on pubic relations in America has been growing dramatically and reached $3.7 billion in 2005 (*Economist*, 2006). Public relations spending is forecasted to grow by almost 9% a year. Its growth is faster than the overall market for advertising and marketing, now worth $475 billion and growing at 6.7% a year. According to a recent study by Procter & Gamble (Jack, 2005), public relations is surprisingly effective and has a higher return on investment than any other medium or traditional forms of marketing tools.

Most prior studies have examined the effect of advertising and public relations at the brand level, such as a consumer's attitude toward a brand or behavioral intention about a brand. In particular, they have focused on examining the superiority of advertising over public relations or *vice versa* (Cameron, 1994; Hallahan, 1999; Salmon, Reid, Pokrywcnznski, and Willet, 1985). However, little attention has been given to the effect of advertising and public relations at the

firm level. Marketing communication at the firm level has been studied mainly in management and strategy-related research. For example, McAlister, Srinivasan, and Kim (2007) examined the effect of advertising and R&D on the systemic risk of a firm. Luo and Donthu (2006) defined marketing communication productivity as the effect of advertising and sales promotions on a firm's sale level, sales growth, and corporate reputation. Firms that allocate a large amount of their resources to advertising and public relations expect their expenditures or efforts to contribute, ultimately, to the firm's market performance. That is, with the increasing call for accountability of significant marketing communication spending, quantifying and measuring the contribution of marketing communication to market performance is increasingly a requirement for sustainability in all management practices. Thus, providing evidence of the accountability for marketing communication at the firm level has become important.

In addition, the resource-based view (RBV) suggests that a firm's marketing communication creates intangible market-based assets and that these assets strengthen a firm's market and financial performance (Barney, 1991; Hall, 1992; Boulding and Staelin, 1995; Erickson and Jacobson, 1992). Recent developments of the market-based assets theory (Srivastava, Shervani, and Fahey, 1998) focus on corporate reputation as an intangible market-based asset,

suggesting that a favorable reputation is an intangible asset that increases a firm's performance.

A growing number of studies have argued that good corporate reputations have strategic value for the firms that possess them (Dierickx and Cool, 1989; Fombrun, 1996; Roberts and Dowling, 2002; Rumelt, 1987; Weigelt and Camerer, 1988). A company's reputation has long been recognized as a critical factor in successful marketing. Corporate reputation has been believed to affect the buyer's expectations with respect to the quality of its offerings (Nelson 1970; Margulies 1977; Shapiro 1982, 1983; Yoon, Guffey, and Kijewski, 1993). Page and Fearn (2005) suggested that it is very difficult to achieve strong product brand equity with a poor corporate reputation. Therefore, corporate reputation is one appropriate outcome measure for determining the effect of marketing communication.

This study attempts to examine the effect of advertising and public relations on corporate reputation and market performance. With respect to this, two research questions are addressed. The first research question is, "How do advertising and publicity contribute to corporate reputation?" The second research question is, "How do advertising and publicity generate sales revenue?" This study hypothesizes that a firm's advertising and publicity can generate favorable corporate reputations and high levels of sales revenues.

Hypotheses were tested by a time-series analysis using the panel data of 18 companies over a 21-year period from 1985 to 2005. Eighteen companies that have a reputation rating for each year in the 21-year period from 1985 through 2005 were selected from *Fortune*'s America's Most Admired Companies survey. Then, data on the advertising expenditures, publicity index, corporate reputation, sales revenue, and other firm variables were obtained from multiple sources: COMPUSTAT database, *Fortune*'s America's Most Admired Companies Survey, and the online news database Lexis-Nexis. The main purpose of this study is to provide a comprehensive analysis of the relationship between marketing communication and corporate reputation and between marketing communication and sales revenue by selecting a significant subset of predictor variables.

This is the first empirical study to use a multi-industry sample of firms over a 21-year period to address the question of whether higher advertising and favorable publicity generate favorable assessments of corporate reputation and increase sales revenues. Also, this is the first study to attempt to examine the simultaneous effect of advertising and publicity using the longitudinal panel data at the firm level. This study provides a timely empirical examination of the effect of advertising and public relations, in that they are the most representative marketing communication tools, and synergy or combined effect has been a primary research agenda in integrated marketing communication.

Chapter 2 reviews the general literature on the importance of advertising and publicity, corporate reputation, and the effect of marketing communication on market performance. On the basis of the literature review, Chapter 3 proposes research questions and hypotheses. Sample composition and measurements of variables included in the study are presented in the methodology section of Chapter 4. Chapter 5 describes analyses procedures and provides the results of descriptive analyses and hypotheses testing. Chapter 6 discusses the results of the study and provides theoretical and managerial implications. Finally, Chapter 7 suggests the limitations and directions for further study.

CHAPTER 2

LITERATURE REVIEW

Marketing Communication and Synergy Effect

Most companies try to achieve a competitive advantage through various activities. Marketing communication, a key tool in developing a competitive advantage, consists of all the promotional elements in the marketing mix that involve the communication between an organization and its target audiences on all matters that affect marketing performance (Pickton and Broderick, 2001). Keller (2001) suggested that marketing communication is the voice of a brand and the means by which companies can establish a dialogue with consumers concerning their product offerings. That is, marketing communication is the means by which firms attempt to inform, persuade, incite, and remind consumers about the products and companies. Through a marketing mix, including elements such as advertising, public relations, promotions, database marketing, etc., marketing communication enables companies or products to transcend their physical natures and to provide products and services with additional meaning and value. Therefore, in a cluttered, complex marketplace, marketing communication can contribute to greater brand purchases through customer

satisfaction and sustained consumer loyalty, which is the competitive advantage marketing communication ultimately tries to attain.

In recent years, as the role of synergy has been stressed as a key to maximizing competitive advantage (Aaker, 1995), integrated marketing communication has been recognized as a strategic tool in ensuring synergy. Consequently, integrated marketing communication has been recognized as one of the marketing communication strategies that provides a competitive advantage in a complex marketplace (Agres and Dubitsky, 1996; Reid, 2003). In other words, through integrated marketing communication, a firm can attain synergy among all of its marketing communication activities and decisions, and that synergy can lead to performance benefits. Some research has found positive relationships between integrated marketing communication and market performance such as sales, productivity, brand strength, customer loyalty, etc. (Duncan and Moriarty, 1997; Eagle and Kitchen, 2000; Reid, 2003).

Synergy or interaction is the fundamental concept of integrated marketing communication and has been considered the foremost research agenda. Much integrated marketing communication academic literature has mentioned that integrated marketing communication is the strategic coordination of multiple communication voices, pursuing synergy by integration. That is, the goal of employing multiple marketing communication tools is to induce the synergy

effect or mutual reinforcement to create the greatest persuasion effect (Carlson et al, 1996; Cook, 1996; Duncan and Everett, 1993; Eagle et al., 1999; Hutton, 1996; Naik and Ruman, 2003; Nowak and Phelps, 1994; Pickton and Hartley, 1998; Reid, 2003; Schultz, 1996; Schultz and Kitchen, 1997; Stewart, 1996; Moriarty, 1996; Schultz, Tannenbaum, and Lauterborn, 1992; Thorson and Moore, 1996; Gaywood, Schultz, and Wang, 1991).

Synergy is defined as the interaction of two or more agents or forces so that their combined effect is greater than the sum of their individual effects (American Heritage College Dictionary, 1997). Stammerjohan, Wood, Chang, and Thorson (2005) defined synergy as a positive response to a campaign that is greater than the sum of separate expected responses based on the use of each communication tool. However, eliciting how the synergy operates has been difficult and elusive. Moreover, little has been examined regarding the synergy effect of different, multiple marketing communication activities.

With respect to the study of synergy effects in marketing communication, the main focus has been cross media studies that have examined synergies resulting from the use of multiple media in an advertising campaign. Bhargava and Donthu (1999) examined the effect of outdoor media on sales. Edell and Keller (1989) examined media interactions in an advertising campaign employing TV and radio to understand how advertising campaigns should be coordinated

9

across media. They found that when consumers are exposed to a TV ad and later hear the audio on the radio, the audio track serves as a retrieval cue for the video representation of the ad and an associated reaction stored in memory from the TV ad exposure. With respect to the use of multiple media in an advertising campaign, in general, it has been reported that print advertising can enhance the effectiveness of TV advertising when both ads are well-coordinated (Confer, 1992; Confer and McGlathery, 1991). Also, a few researchers support the fact that using multiple media will improve advertising effects on consumers' memory-based judgments (Tavassoli, 1998; Tavassoli and Lee, 2003). Chang and Thorson (2004) examined television and Web advertising synergies and found that their synergy leads to higher attention, higher perceived message credibility, and a greater number of total positive thoughts than did mere repetition in a single medium.

As mentioned above, the central research agenda of integrated marketing communication is to explore how synergy/interaction effects have been generated. Nonetheless, few studies have examined the synergy effects of multiple marketing communication tools including advertising, sales promotion, public relations, direct marketing, personal selling, etc. While a few studies have considered multiple promotional tools, those studies focus on the relationship between advertising and sales promotion (e.g., advertising and sales promotion ratio).

Furthermore, these studies have been confined to the area of mathematical modeling research (Ailawadi, Farris, and Parry, 1994; Balasubramanian and Kumar, 1990; Farris and Albion, 1981). In recent years, as the interest in integrated marketing communication effects has risen, a few researchers have examined the interaction/synergy effect of different marketing communication tools on consumers' information processing by using a controlled experimental setting. Stammerjohan, Wood, Chang, and Thorson (2005) explored the combined effect of two marketing communication tools, publicity and advertising, on attitude toward the ad and attitude toward the brand, and found synergetic effects between publicity and advertising. Jin (2004) detected the synergy effect between marketing publicity and advertising by examining the effects of Super Bowl advertising campaign information in news stories on consumers' memory of the subsequent ads.

As mentioned previously, despite an increasing interest in integrated marketing communication, there has been little research on the synergy effect of multiple marketing communications, particularly in advertising and public relations, at the firm level. The majority of previous studies regarding the effects of advertising and public relations have examined the superiority of advertising over public relations or *vice versa* (Cameron, 1994; Hallahan, 1999; Salmon, Reid, Pokrywcnznski, and Willet, 1985). In recent years, two studies examined the

11

synergy effects of two marketing communication tools, advertising and pubic

relations (Jin, 2004; Stammerjohan, Wood, Chang, and Thorson, 2005). However,

these studies examined the synergy effect of multiple marketing communication

tools (advertising and public relations) at the brand level, rather than at the firm

level. No research has investigated the cumulative synergy effect of multiple

marketing communications at the firm level. This study explores the effect of

advertising and public relations using cumulative corporate level data.

Corporate Reputation

A growing number of studies have argued that good corporate reputations

have strategic value for the firms that possess them (Dierickx and Cool, 1989;

Fombrun, 1996; Roberts and Dowling, 2002; Rumelt, 1987; Weigelt and Camerer,

1988). A firm's reputation can be used as a means of building source credibility,

which in turn influences communication effectiveness. Thus, in the marketing

literature, company reputation has long been recognized as a critical factor in

successful marketing. Corporate reputation has been believed to affect the buyer's

expectations with respect to the quality of a firm's offerings (Nelson, 1970;

Margulies, 1977; Shapiro, 1992; Yoon, Guffey, and Kijewski, 1993). According

to the resource-based view, firms with valuable and rare assets possess a

competitive advantage and may expect to earn superior returns. Those assets are also difficult to imitate and may enable sustained superior financial performance (Barney, 1991; Grant, 1991). Therefore, intangible assets such as good reputations are critical not only because of their potential for value creation but also because of the difficulty of replication by competing firms.

Although many academic scholars have attempted to identify the nature and value of corporate reputation, there is no clear understanding about the function and role of corporate reputation, particularly in marketing. In marketing and communication, "reputation" has been used interchangeably with the terms "image," "brand," "brand equity," "identity," and "corporate identity" (Gedulig, 1999; Huey, 2002; Jeffries-Fox Associates, 2000; Vercic, 2000; Argenti, 2003). Yoon, Guffey, and Kijewski (1993) also mention that the role of reputation in the marketplace is very similar to brand goodwill or brand equity, particularly when the company name is a part of the brand identification. Jeffries-Fox Associates (2000) conducted a content analysis to compare the terms "reputation," "brand equity," and "goodwill." They found that the same component ideas are associated with brand equity and corporate reputation, and the terms are used interchangeably. They concluded that public relations managers are more likely to use the term "reputation" and marketing managers to use "brand equity." Huey (2002) suggested that reputation is based on performance, whereas brand equity is

based more on communication effects than in actual performance. On the website

of the Reputation Institute, Fombrun said that a brand describes the label that a

company uses to distinguish itself from rivals with its customers

(*http://www.reputationinstitute.com/main/home.php*). A company has many

different images and can have many brands. In contrast, a corporate reputation

signals the overall attractiveness of the company to all of its audiences, including

employees, customers, investors, reporters, and the general public. A corporate

reputation, therefore, reconciles the many images people have of a company, and

conveys the relative prestige and status of the company.

Corporate reputation is based on how the company conducts, or is

perceived as conducting, its business (Morley, 1998). In today's corporate world,

there is little or no distinction between product qualities, prices, or technologies.

Therefore, a company's reputation can be not only the primary basis for a

consumer's purchasing decision but also everything from stock value of the

company to employee satisfaction or attitude toward the brand or product itself.

There are two primary perspectives about corporate reputation. The first

perspective views corporate reputation as a general organizational attribute that

reflects the extent to which external stakeholders see the firm as good and not bad.

According to this view, reputation is defined as an impression of pubic esteem or

high regard judged by others (Merriam Webster's Collegiate Dictionary 1996,

p.1001). American Heritage Dictionary defines reputation as the general

estimation in which one is held by the public. Working from this context, Weiss,

Anderson, and MacInnis (1999) defined reputation as the extent to which a

company is held in high regard or esteem. Fombrun (1996, 2001), Roberts and

Dowling (2002), and Fombrun and Van Riel (1997) defined reputation as a

collective representation of a company's past actions and future prospects that

describe the firm's overall appeal to all its key stakeholders when compared to

other leading rivals. In other words, corporate reputation describes how key

stakeholders interpret a company's initiatives and assess its ability to deliver

valued outcomes. These definitions imply that corporate reputation is developed

through complex interactions between a firm and its stakeholders over time. That

is, corporate reputation is developed by the dissemination of information about

the past and current actions of the firm among stakeholders (Deephouse, 2000;

Fombrun, 1996).

Secondly, economists views corporate reputation as an outcome of a

competitive process in which a firm signals its important features to stakeholders

(Spence, 1974). Due to the presence of incomplete and asymmetric information in

markets, stakeholders are unsure of a firm's ability to deliver reliable and quality

products or services. Consequently, reputation is a way to interpret and make

attributions about a firm's actions (Kreps and Wilson, 1982). Shapiro (1983)

pointed out that the importance of a company's reputation increases under conditions of imperfect information. When performance information is not perfectly disseminated among the customers, the marketer's reputation is used as a guideline to form expectations of quality. This is particularly important when information search costs are high (Smallwood and Conlisk, 1979).

Unlike the first perspective, which relies on the interaction between a firm and its stakeholders to create perceptions about the reputation of that firm, the economic perspective focuses on the role of signaling in uncertain markets. However, both perspectives appear to agree that a favorable corporate reputation is developed by stakeholders' impression of the firm's past and current actions to behave in a certain manner in the future.

Several studies confirm the benefits associated with good reputations. A positive reputation is important for a competitive advantage because it signals stakeholders about the attractiveness of the firm, and stakeholders are then more willing to contract with the firm (Fombrun and Shanley, 1990; Weight and Camerer, 1988). Favorable reputation has been linked with a firm's ability to survive in crisis (Shrivastavas and Siomkos, 1989), positive customer attitude toward the company's products and salespeople (Brown, 1995), enhanced buying intentions (Yoon, Guffey, and Kijewski, 1993), and choice (Traynor, 1983). Also, by signaling consumers about product quality, a favorable reputation may enable

firms to charge premium prices (Klein and Leffler, 1981; Milgrom and Roberts, 1986; Shapiro, 1983), attract better applicants (Stigler, 1962), enhance their access to capital markets (Beatty and Ritter, 1986), aid rapid market penetration (Robertson and Gatignon, 1986), and attract investors (Milgrom and Roberts, 1986). Page and Fearn (2005) suggest that it is very difficult to achieve strong product brand equity with a poor corporate reputation. In addition, a favorable corporate reputation may be used to increase the perception and evaluation of the firm by the media (Deephouse, 2000). In short, a favorable corporate reputation signals to stakeholders the attractiveness and effectiveness of a firm and positions the firm to benefit from these stakeholders in the future.

These benefits associated with good reputation make a company engage in explicit reputation building activities, because reputation perceptions are linked with outcomes deemed important to the firm (Bromely, 1993; Yoon, Guffey, and Kijewski,1993). An organization with an unfavorable reputation may engage in actions that enhance its reputation, and even a firm with a good reputation may engage in actions designed to maintain and enhance its reputational effect. Yoon, Guffey, and Kijewski (1993) suggested that marketing communication such as advertising is a major source of reputation. Fombrun and Shanley (1990) and Kotha et al. (2001) showed that media exposure and advertising or marketing investments influenced the development of corporate reputations.

These previous studies indicate that the effective management of corporate or brand identification is essential for maintaining company reputation. Based on prior studies, this study argues that corporate reputation can be managed by actively engaging in marketing communication activities such as advertising and public relations.

Market Performance

"How does advertising work?" has been the most important and heated research question in advertising studies. In fact, it is not an exaggeration to say that the whole history of advertising research has revolved around this general question of advertising effectiveness. Two approaches have been taken – an economic approach and a psychological approach. Psychological approaches concern how people feel, think, respond to, and use marketing communication to make purchase decisions, whereas economic approaches, or market response models, concentrate on how marketing communication can be strategically managed to improve the value of products and services from the managerial perspective. According to psychological response models, advertising or public relations has some intermediate effects, such as cognition, affect, and experience, before it affects behavior. In contrast, economic approaches do not consider any

intermediate effects. They directly relate marketing communication to behavioral measures such as sales, market share, and brand choice. Historically, economic and psychological approaches have been conceptualized as opposite sides of the advertising effectiveness research spectrum, and they appear to be two incompatible research streams.

In the real world, however, it is rarely easy to establish such a clear distinction between economic and psychological approaches. Rather, they are often complementary. For example, Zahay, Peltier, Shcultz, and Griffin (2004) confirmed this fact by asserting that the distinction between transactional (sales) and relational (psychographic customer profile) data is less clear. They mention that psychographic customer profiles can be inferred from transactional data, and similarly, relational data such as customer satisfaction surveys and personal contacts provide an opportunity to learn about the transactional characteristics of customers as well. Therefore, these two research streams should be closely related and contribute to improving a firm's market performance in areas such as sales, market share, and profit.

Numerous academic researchers and professionals have examined the effect of advertising on market performance. Literature about advertising and market performance such as sales or market share has been well established. Since the classic AIDA model was introduced, researchers have shown a

tremendous amount of interest in predicting the advertising-sales relationships. In the 1960s and 1970s, academic researchers suggested various statistical models to explain the advertising-sales relationships, but they failed to reach a general consensus. Rather, their studies revealed that other marketing activities and exogenous variables, such as economic conditions, the level of competition in the market, and geographic or demographic variables, should be considered in examining the advertising-sales relationships (Bass, 1969; Telser, 1962; Palda, 1964; Quandt, 1964). Since then, more reliable data and more improved statistical methods have been employed, and other marketing mix variables and market performance measure were added to find the advertising-sales relationships (Bass and Clarke, 1972; Rao and Miller, 1975).

Since the relationship between advertising spending and sales has been of great interest, many academic researchers have employed economic approaches (Asumus et.al., 1984; Leone and Shultz, 1990; Lodish et al., 1995; Sethuraman and Tellis, 1991; McDonald, 1992; Parker and Gatignon, 1996). However, these studies have not shown consensus regarding the advertising-sales relationships. For example, research has shown different results with respect to the carryover or lagged-effect. Assmus, Farley, and Lehmann (1984) suggested three to fifteen month-carryover effects on sales, whereas Leone (1995) insisted that the advertising effect on sales disperses after six to nine months. Winer (1979)

suggested that even though the carryover effect of advertising would decline over time, current advertising effects would increase during the same period. Dekimpe and Hanssens (1995) suggested that the effect of advertising on sales did not disperse within a year. Also, a few studies suggested that the results regarding advertising effects on sales were different depending on brands. A meta analysis investigating 389 real world split cable TV advertising revealed that while increased advertising weight increased the sales of established brands in only 33 percent of the cases investigated, there was a 55 percent increase for new brands (Lodish et al., 1995). Vakratsas and Amber (1999) pointed out that the results of these studies were different depending on the product or product category investigated or the data used in the study. Even though there have been no consistent results on the advertising-sales relationship, valuable work on the advertising-sales relationship has been done by many researchers.

Compared with the studies on the effect of advertising on sales, literature about the effects of public relations on market performance is not well established. As the interest in public relations and public relations budgets has increased, accountability for public relations has become a more important issue in business organizations.

The public relations literature sees the impact of public relations both in financial terms and in terms of long-term credible relationships with key publics.

The economic performance typically refers to dollars and the monetary return on investments given back to a firm (Grunig, Grunig, and Dozier, 2002). There is some incongruence in trying to measure the effect of public relations on the organization in terms of economic performance.

Some public relations scholars and professionals do not believe that money invested in pubic relations can be linked to a consistent, yearly monetary return on investment. Many CEOs agree that public relations is a contributing factor, rather than the determinant of organizational effectiveness (Campbell 1993). Furthermore, there is little empirical research that has directly related the public relations budgets or expenditures to a company's economic performance. The basic perspective of these studies implies that a goal of public relations is not a direct increase of the bottom line, but that public relations can contribute to a firm's market performance by achieving its goals of good reputation or good relationships with stakeholders. That is, the effects of public relations on market performance have been inferred by examining the relationship between outcome measures (e.g., goodwill, social responsibility) of public relations and market performance.

For example, Preston (1981) suggested that public relations may make an indirect contribution to organizational effectiveness and emphasized that social responsibility is an indirect contribution of public relations. He reviewed the

relationship between socially relevant behaviors of companies and their economic

performances and found that responsible behavior indirectly affects a firm's

performance. Similarly, Tuleja (1985) stated that ethical behavior formed through

public relations helps companies enhance their economic performance indirectly

by developing more productive employees and avoiding excessive governmental

and nongovernmental regulations. Hon (1997) suggested that attributes of public

relations effectives were defined as managing risks, building relationships,

fostering media relations, earning respect, increasing understanding, achieving

goals, affecting registration, and disseminating appropriate messages. This

research established building relationships and earning respect as two major

dependent variables for public relations effectiveness. Vercic (2000) posited that

trust as an attitudinal measure of public relations explains the financial

performance of a corporation. He found that trust has no direct relationship to

organizational performance, but it determines the organization's performance in

certain contexts. Kim (2001) established a two-stage model to measure the

economic value of public relations by testing two relationships: (1) the impact of

public relations expenditure on reputation as a public relations goal and (2) the

economic impact of reputation on companies' bottom lines. His study found that

public relations expenditure affects the company's reputation positively, and the

23

company's reputation affects the company's revenue positively. He concluded that public relations expenditures indirectly affect a firm's revenues.

The studies mentioned above assume that the public relations goal is not to increase a firm's economic performance directly but to contribute to its performance by achieving public relations goals. However, the direct relationship between public relations and market performance has still been of key interest among marketing scholars and practitioners. Moreover, as integrated marketing communication has received a great deal of interest from academic researchers and practitioners, performance measures based on the effects of integrated marketing communication have been the hot issue. With respect to integrated marketing communication and performance issues, some researchers have insisted that integration in marketing communication should lead to some level of superior business performance (McArthur and Griffin, 1997; McGoon 1998; Pickton and Hartley, 1998; Kitchen and Schultz, 1999; Eagle and Kitchen, 2000; Low, 2000). In other words, through integrated marketing communication, a firm can attain synergy from all of its marketing communication activities, and in turn, this synergy leads to performance benefits. However, despite the increasing interest in the link between integrated marketing communication and economic performance at brand-levels or firm-levels, there has been little empirical evidence to support this integrated marketing communication-performance relationship. Thus, this

study attempts to examine the direct effect of public relations on market performance.

In sum, with respect to the studies on the advertising-sale relationships, there has been no consensus in predicting the relationship between advertising and sales. Data availability, other exogenous variables, or other marketing mix variables have contributed to this incongruence. In public relations studies, the relationship between public relations and market performance has been demonstrated by examining the indirect effects caused by public relations, such as relationships, reputation, or trust, rather than by examining the direct impact of public relations itself on market performance.

On the basis of prior studies on marketing communications and market performance, this study argues that there is a direct positive relationship between marketing communication and market performance. Research hypotheses are derived from the notion that firms engage in reputation building activities including advertising and public relations to improve their overall market performance.

CHAPTER 3

RESEARCH HYPOTHESES

Research Questions

The major goals of this study are to provide a comprehensive analysis of the effects of marketing communication – advertising and publicity – on corporate reputation and sales revenue. Based on the goals, two research questions were established: (1) "How do advertising and publicity contribute to corporate reputation?" and (2) "How do advertising and publicity generate sales revenue?" In order to answer these research questions, the study proposes four research hypotheses.

Hypotheses 1 and 2 address the first research question: the relationship between marketing communication and corporate reputation. The first hypothesis predicts a positive relationship between advertising expenditure and corporate reputation. The second hypothesis focuses on the impact of publicity and corporate reputation.

Hypotheses 3 and 4 were proposed to answer the second research question: the relationship between marketing communication and market performance. The third hypothesis asserts a positive relationship between

advertising and sales revenue. The fourth hypothesis examines whether there is a

positive relationship between publicity and sales revenue.

Research Hypotheses

Marketing Communication and Corporate Reputation

<u>*Advertising and Corporate Reputation*</u>

Much marketing and advertising literature has explored the value of

brands and the notion of brand equity to assess marketing communication effects,

especially the effect of advertising. For example, corporate advertising pertaining

to the company's market coverage, market share, or brand popularity often is

helpful in building an overall image. Claims of being popular among customers

(Raj, 1985) or being innovative (Porter, 1985) support the marketer's efforts to

increase brand loyalty. A reputation of brand leadership elicits a favorable attitude

toward advertising (Simon, 1970), suggesting that companies with higher quality

products benefit more from advertising spending (Shugan, 1985). Kijewski (1985)

reported that industrial businesses with higher levels of advertising enjoyed higher

levels of perceived quality and higher relative prices for any given level of

perceived quality. Hoch and Ha (1986) suggested that advertising has a significant

27

effect on customers' perceptions of quality when they experience ambiguous evidence about the product's quality. Winters (1986) reported that brand advertising is effective for enhancing the marketing image for a company, while corporate advertising is effective for improving the social conduct image of the company.

Since reputation has been regarded as having the same component as brand equity (Jeffries-Fox Associates, 2000), marketing communication, especially advertising, also has great value to a corporation. There have been many reputation studies. For example, marketing and management researchers have investigated how people form perceptions of a company's reputation and how that reputation affects consumers' perceptions of price unfairness and influences managers' decision-making (Campbell, 1999). However, relatively little attention has been given to the relationship between advertising and corporate reputation. Little empirical research has examined how marketing communication, especially advertising, affects corporate reputation from firms' point of view.

The public constructs reputations from available information about a firm's activities originating from the firm itself, from the media, or from other sources. Since different sectors of the public attend to different features of firms' performance, reputations reflect firms' relative success in fulfilling the

expectations of multiple stakeholders (Freeman, 1984). A study by Fombrun and Shanley (1990) investigating the factors that influence corporate reputation found that publics construct reputation on the basis of corporate strategy signals. Differentiation through advertising has been considered the most representative signal of corporate strategy.

Both brand and corporate advertising help firms develop strategic positions that are differentiated from their competitors' and that provide them with a measure of goodwill from consumers and other stakeholders (Rumelt, 1987). Also, advertising helps induce a protected strategic position that stabilizes sales. Advertising not only signals product and firm characteristics in ways that can reduce stakeholders' search cost for information but also presents firms in a favorable light. Advertising is viewed as a source of product and imaging cues designed to influence the perceptions of external publics. Advertising can further reinforce the information that customers have already acquired with respect to brands or companies. Often, advertising is used as a tool to inform about product quality. A sufficient level of advertising implies a significant investment on the part of the firm.

While managing a corporate reputation involves many factors, research has suggested that advertising has been successful in promoting corporate reputation to various audiences. Many academic researchers have supported the

idea that companies rely on advertising to develop their reputations. Podolny (1993) suggested that the positive interactions between reputation and salient firm features such as advertising provide a firm with greater incentive to engage in actions that further enhance its reputation. According to Schumann, Hathcote, and West (1991), advertising can help better position American products against the competition, to meet increased pressure from consumer groups and politicians, and to repair the corporate reputation of American companies that are criticized for their roles in creating adverse environmental conditions. Goldberg and Hartwick (1990) indicated that potential customers receive advertising claims more favorably if the reputation of the firm making those claims is more positive. They found evidence of a reputation effect by investigating the combined effects of a company's reputation and advertising on product evaluations. Subjects who formed a negative evaluation of the company based on a bad reputation found the claims of advertising less credible and rated the products less favorably than those who received positive reputation information about the company.

Fombrun (1996) asserts that a company is held in high regard and esteem when it is visible and credible. Since advertising is one of the foremost strategies in establishing the visibility and credibility of a company, an antecedent helps to establish the link from advertising to reputation. Chaudhuri's (2002) study found that brand advertising enhances a brand's reputation, and reputation, in turn,

augments the effectiveness of advertising by perceptually enhancing a brand within its product category and leading to greater sales for the brands. Therefore, a hypothesis regarding advertising and corporate reputation is established as follows:

Hypothesis 1: Advertising will have a positive impact on corporate reputation.

Public Relations and Corporate Reputation

Public relations professionals have consistently asserted the superiority of news articles. Generally, this belief stems from the assumption that third-person endorsements are more credible than those from the source itself. When mass media endorse a product or a company, the product or company gains public support from the third-party endorsement for the message. That is, the prominence given to media relations in public relations activities lies in public relations professionals' strong belief in the impact of news media. For this reason, marketing managers and public relations professionals frequently count the number of media clippings about their product or company. The typical public relations measurement focuses on counting clippings and circulation figures and doing some message analysis. Given the high proportion of pubic relations

activities that are still focused on media relations and publicity, media content analysis is one methodology or tool for evaluating public relations. Media content analysis can provide valuable insights into what is likely to be on the public agenda in the future. This is why public relations professionals regard media relations as one important area of public relations; therefore, the present study examines the effect of public relations in terms of publicity.

The media have a powerful effect on the issues we pay attention to. A well-known study conducted by McCombs and Shaw (1972) found an almost perfect correlation between media coverage and the concerns that voters expressed. This study was the initial research that confirmed the agenda setting role of the media. It implies that the media have a strong effect on shaping the publics' view of events and their importance and that the number of times a story is presented in the news affects peoples' perception of an event's importance regardless of what is said about the topic. More recent agenda-setting studies have moved beyond issue salience to examine media effects on attitudes and behaviors and further the media's influence on the social construction of reality (Gamson, Croteau, Hoynes, and Sasson, 1992; Roberts, 1992; Smith, 1995).

Agenda-setting studies can be used in marketing communication research. Many mass communication studies suggest that the media record public knowledge and opinions about firms and also influence public knowledge and

opinions about firms. In addition to political communication setting, about which most prior agenda setting studies have been conducted, the agenda setting can be applied to the business communication environment. Many researchers have pointed out that business news coverage is important to organizations attempting to manage issues because much of what consumers and other external stakeholders learn about companies and the issues that surround them comes from the news media (Chen and Meindl, 1991; Deephouse, 2000; Dutton and Dukerich, 1991; Fombrun and Shanley, 1990). Carroll and McCombs (2003) addressed a few propositions emphasizing the importance of news coverage in the business sector.

The fact that media coverage influences public knowledge and opinion is applicable to reputation because media coverage is a reasonable indicator of the publics' knowledge and opinions about firms (Deephouse, 2000). Fombrun and Shanley (1990) and Fombrun and Abrahamson (1988) mentioned that the media act not only as vehicles for advertising and mirrors of reality reflecting firms' actions, but also as active agents shaping information through editorials and feature articles. Fombrun and Shanley (1990) and Wartick (1992) assumed that the media possess information available for processing by stakeholders in making reputational assessments, which is consistent with the signaling role of reputation. Deephouse (2000) developed a concept called media reputation, which is defined

as the overall evaluation of a firm presented in the media, and found that media reputation is a resource that increases business performance. That is, the media have powerful effects on corporate visibility. On the one hand, companies regularly advertise their products and activities, thereby projecting attractive self-concepts and images to consumers. On the other hand, the media interpret, amplify, and shape news stories through commentaries that affect how consumers think about companies.

When we think about a single company, we choose specific criteria to evaluate the company. While various instruments have been proposed to address this issue, *Fortune* magazine's corporate reputation has been one of the best-known measures. Staw and Epstein (2000) found that companies with much media coverage were more admired, perceived to be more innovative, and rated more highly in management quality in *Fortune* magazine's annual Most Admired Company survey. *Fortune*'s Most Admired Company survey will be discussed further in methodology section.

In addition to *Fortune*'s corporate reputation, other reputation indices explain the relationship between news coverage and corporate reputation. For example, The Reputation Institute has confirmed a positive relationship between corporate reputation and media visibility. The Reputation Institute tests six dimensions or attributes on thousands of people, online, by phone, and in personal

interviews. Based on these tests, they create an overall reputation score called the Reputation Quotient (Fombrun, 1996). They confirm that many of the most visible companies that were among the top-rated companies in the RQ (Reputation Quotient) Project also earned top scores in media visibility. In other words, the pubic tends to notice the companies that are put on the agenda by the media and also tends to give higher ratings to those companies that get more favorable press coverage.

Many pubic relations professionals and researchers insist that the goal of public relations is to improve the organization's reputation. According to Hon's (1997) study, CEOs believed that the ultimate goal of public relations was to communicate the image of the organization. The organization's image could be interpreted as its reputation because image does not refer to symbolic identities such as company and brand names. Public relations academic researchers do not use the term "image." Instead, they use "reputation" as a better way to define corporate image because they believe it represents behavioral relationships with publics (Grunig, 1993). Because of negative connotations related to pubic relations, Grunig (1993) replaced "image" with "symbolic relationships" and "behavioral relationships." In this context, reputation implies substantive behavioral relationships, not superficial symbolic activities. Hutton, Goodman, and Alexander (2001) mentioned reputation management as the new face of

corporate public relations. Grunig (1993) also insisted that reputation is one of the dependent variables of public relations effectives.

As mentioned above, the media play a major role in forming the public image of organizations. According to Fombrun and Shanley (1990), institutional signals, which make firms more or less visible, attractive, and socially responsive, are some of the factors that influence corporate reputation. They said that media visibility is one of the institutional signals to which marketing communication managers or professionals have to pay attention. Therefore, companies attempt to influence their various audiences by disseminating information through networks of interpersonal relations or interlocking corporate ties (Mizruchi and Schwartz, 1987) and through press articles and mass media presentations (McQuail, 1985). Thus, many companies have public relations departments that provide a steady stream of information to the media.

The information reported in the media comes from various sources. Company press releases from public relations departments provide information to the media (Shoemaker and Reese, 1991). Stakeholders are another source. Individuals provide their opinion letters to the media. The government and its specialized agencies evaluate firms. Reporters, editors, and columnists write news and feature stories about firms. Therefore, specific stories that appear in the media

can contain conflicting information, including positive or negative information about the firm and its activities.

The media do not simply passively record events through unbiased reporting. Both the mass media and specialized publications disseminate information and evaluation of firms. They report selectively and interpret what they observe according to their interests. Media not only convey information but also actually make and present reputational assessments to their audiences. Media favorability indicates the overall evaluation of a firm presented in the media resulting from the stream of media stories about the firm. Deephouse (2000) suggested the evaluative dimension of news coverage in terms of unfavorable and favorable. He used "favorable" to indicate that a firm was praised for its actions or that the firm was associated with activities that should raise its reputation. He used "unfavorable" when an organization was criticized for its actions or associated with actions that should decrease its reputation.

Just as the availability or amount of information biases individuals' judgments (Tversky and Kahneman, 1974), evaluations channeled through the business press and the mass media may bias the public's construction of corporate reputations. Firms frequently and nonnegatively mentioned or praised by the media might therefore develop better reputations than other firms, because they occupy more central positions in a social network (Burt, 1983). A hypothesis

regarding the relationship between publicity and corporate reputation is
established.

Hypothesis 2: Favorable publicity will have a positive impact on corporate
reputation.

Marketing Communication and Market Performance

<u>*Advertising and Sales Revenue*</u>

As discussed previously, while a number of studies examined the
relationship between advertising and market performance, there has been little
consensus on the advertising-sales relationship. In addition, little empirical
research has investigated the simultaneous effect of both advertising and publicity
on market performance. Prior research regarding the marketing mix and market
performance has been mainly focused on advertising and sales promotion. Even
though a few recent studies explored the synergy effect of advertising and
publicity, their research focused on psychological outcome measures, such as
brand attitude or advertising attitude, rather than market performance (Jin, 2004;
Stammerjohan, Wood, Chang, and Thorson, 2005).

In recent years, there are only a few studies examining the relationships among advertising, brand reputation, and such outcome variables as market share and relative price. Chaudhuri's study (2002) suggested that brand advertising was both directly and indirectly related to brand sales, with the indirect linkage occurring through the construct of brand reputation. Smith and Park (1992) found a positive relationship between differentiation through advertising and market share. Their study explained that differentiated brands lead to greater market share and relative price because they increase brand reputation, which leads to superior outcomes over competition.

Based on prior research, this study asserts a hypothesis regarding advertising and sales revenue.

Hypothesis 3: Advertising expenditure will have a positive impact on sales revenue.

Publicity and Sales Revenue

Even though there have been arguments that the objectives of strategic public relations and corporate communication should extend beyond achieving immediate financial outcomes, measuring pubic relations value as a direct monetary return is still the most attractive form of evaluation. Furthermore, as the

importance of pubic relations has been emphasized and public relations spending have increased, the necessity of accountability of public relations has risen. Companies expect more substantial and immediate contributions, such as an increase in sales and profitability, rather than simply goodwill and its invisible long-term impact. However, as mentioned previously, the effects of public relations on market performance have been explored by examining the relationship between the outcome measure of public relations (e.g., goodwill, reputation) and economic performance. Only a few studies have tried to show the contribution of pubic relations to the company in terms of economic performance by investigating the relationship between public relations expenditures and market performance (Kim, 1996, 2001). Balasubramanian and Kumar (1990) established a model for estimating the relationship between marketing communication intensity and market share. They found that the market share had a positive effect in the consumer and industrial market but a negative effect in the service market.

Furthermore, in most prior studies that have investigated the direct effect of public relations on market performance, the contribution of public relations was examined through economic modeling, including public relations expenditures. However, when examining the simultaneous effect of advertising and public relations, measuring public relations in terms of monetary value might be problematic because it is realistically difficult to distinguish advertising

expenditures from public relations expenditures. Details are mentioned in the methodology section. Very little research has explored the contribution of public relations in terms of publicity. Carroll and McCombs (2003) emphasized the importance of the media coverage effect and suggested that companies making themselves prominent on the media agenda are more likely to be prominent on the pubic agenda, whereas those companies not on the media agenda are far less likely to be prominent in the public's mind. This study assumes that the prominence of a company on the public agenda, in turn, is linked to a firm's business performance.

The present study defines publicity as the most representative public relations activity and examines the effect of publicity on market performance. Market performance is represented by sales revenue, which is the most direct measure. The hypothesis regarding this relationship was established.

Hypothesis 4: Favorable publicity will have a positive impact on sales revenue.

In summary, this chapter provides two research questions and four hypotheses. The first research question examines the relationship between advertising, publicity, and corporate reputation. The second research question

explores the impact of advertising and publicity on sales revenues. To answer these two research questions, four hypotheses were suggested. All positive relationships were expected regarding the four hypotheses: the positive advertising-corporate reputation relationship, the positive publicity-corporate reputation relationship, the positive advertising-sales relationship, and the positive publicity-sales relationship.

CHAPTER 4

METHODOLOGY

Data and Sample

This study is basically an analysis of secondary data to provide the most comprehensive analysis of the relationships between advertising, public relations, corporate reputation, and market performance. Data on the advertising expenditures, publicity index, corporate reputation, sales revenue, and other firm variables were obtained from multiple sources: COMPUSTAT database, *Fortune*'s America's Most Admired Companies Survey, and the online news database Lexis-Nexis.

To identify the sample of firms to be included in the study, all the firms included in *Fortune*'s America's Most Admired Companies survey from 1985 to 2005 were searched. The following criteria were established for a firm to be included in the sample. First, the firm must have a reputation rating for each year in the 21-year period from 1985 through 2005. Second, the firm's financial and industry data must be available from the COMPUSTAT database for each year from 1985-2005. Based on these criteria, this study eliminated firms in the dataset when they did not report information on their advertising expenditures, sales, and

other market/financial performance outcomes in the COMPUSTAT database from

1985 to 2005. These criteria did not allow this study to include all firms of

Fortune's America's Most Admired Companies survey. A great number of the

firms included in *Fortune*'s American's Most Admired Companies survey did not

meet these criteria and thus were not included in the study. After searching

different sources, the present author obtained complete data on 18 companies.

Then, to calculate the publicity index of each company, all news stories about the

18 companies from 1985 to 2005 were collected using the online news database

Lexis-Nexis. Table 1 presents the 18 companies used in this study and their

industry/product type.

Table 1

Companies Used in the Study

Company	Industry Type [a]	Product Type [b]
American Standard	Industrial and farm equipment	Consumer/Industrial
Apple Computer	Computers	Consumer
AT&T	Telecommunications	Consumer/Industrial
Coca Cola	Beverages	Consumer
Delta Air Lines	Airlines	Consumer
Fortune Brands	Home equipment, furnishing	Industrial
Gillette	Household and personal product	Consumer
Johnson & Johnson	Pharmaceuticals	Consumer
Kimberly Clark	Household and personal product	Consumer
Pfizer	Pharmaceuticals	Consumer
PPG Industries	Chemicals	Industrial
Procter & Gamble	Household and personal product	Consumer
Sara Lee	Consumer Food Products	Consumer
Stanley Works	Household and personal product	Consumer/Industrial
Texas Instruments	Semiconductors	Industrial
United States Tobacco Inc.	Tobacco	Consumer
VF Corp.	Apparel	Consumer
Vulcan Materials	Building materials, glass	Industrial

[a] Industry type was classified based on industry category provided by *Fortune*. For a 21-year period (1985-2005), certain companies have not been in the same industry category. For example, in 1989, Texas Instruments was in "Electronics" industry but in 2005 it was the leader of "Semiconductors" industry. Industry type, thus, was based on the information from the companies as of 2005. Industry type was categorized into product firms and service firms.

[b] Product type was categorized based on 10-k reports provided with SEC (Securities and Exchange Commission). All publicly traded companies must file 10-k reports with the SEC. A 10-k report includes a section describing a firm's business and its largest markets. The SEC provides the

reports in its Edgar files on the Internet. As a result, product type was categorized into customer products, industrial products, and both customer and industrial products.

Note: On the basis of the industry and product type, the sample of this study is divided into 4 categories: 10 consumer products firms, 4 industrial products firms, 2 firms with both consumer and industrial products, and 2 services firms.

Measurements of Variables

The major goal of this study is to analyze the effect of marketing communication on corporate reputation and sales revenue. Specifically, the first objective of this study is to examine the effect of marketing communication efforts (advertising and publicity) on corporate reputation. For examining the relationship between marketing communication and corporate reputation, this study controlled for dividend policy, diversification, market performance (market-to-book ratio), and profitability (return on investment capital: RIOC) that prior literature has shown to be associated with corporate reputation. Firm size, which may affect a firm's reputation, was also included as an additional control variable.

The second objective of this study is to provide an analysis of the relationship between marketing communication and sales revenues. For analyzing the impact of advertising and publicity on sales revenue, R&D expenditure and focus of the firm, which have been found to affect brand or company market performance studies, were included. Also, firm size and corporate reputation were

46

included in the model to analyze the relationship between marketing

communication and sales revenue.

As indicated above, in order to analyze these relationships, this study has

two sets of variables. Figures 1 and 2 present frameworks for addressing the effect

of marketing communication on corporate reputation and sales revenue. All

variables described in Figures 1 and 2 were categorized into variables related to

the marketing communication, account/finance, strategy, and firm characteristics.

Figure 1

Framework for Analysis - Corporate Reputation

```
┌─────────────────────────────┐
│  Marketing Communication    │
│                             │──────────┐
│    - advertising            │           \
│    - publicity              │            \
└─────────────────────────────┘             \
                                             ↘
┌─────────────────────────────┐       ┌─────────────────────────────┐
│                             │       │                             │
│      Other Variables        │──────→│    Corporate Reputation     │
│                             │       │                             │
│  ┌─────────────────────┐    │       └─────────────────────────────┘
│  │ Finance             │    │
│  │                     │    │
│  │ - market-to-book ratio│  │
│  │ - dividend yield    │    │
│  │ - profitability     │    │
│  └─────────────────────┘    │
│                             │
│  ┌─────────────────────┐    │
│  │ Strategy            │    │
│  │                     │    │
│  │ - diversification   │    │
│  └─────────────────────┘    │
│  ┌─────────────────────┐    │
│  │ Firm Characteristics│    │
│  │                     │    │
│  │ -firm size          │    │
│  └─────────────────────┘    │
└─────────────────────────────┘
```
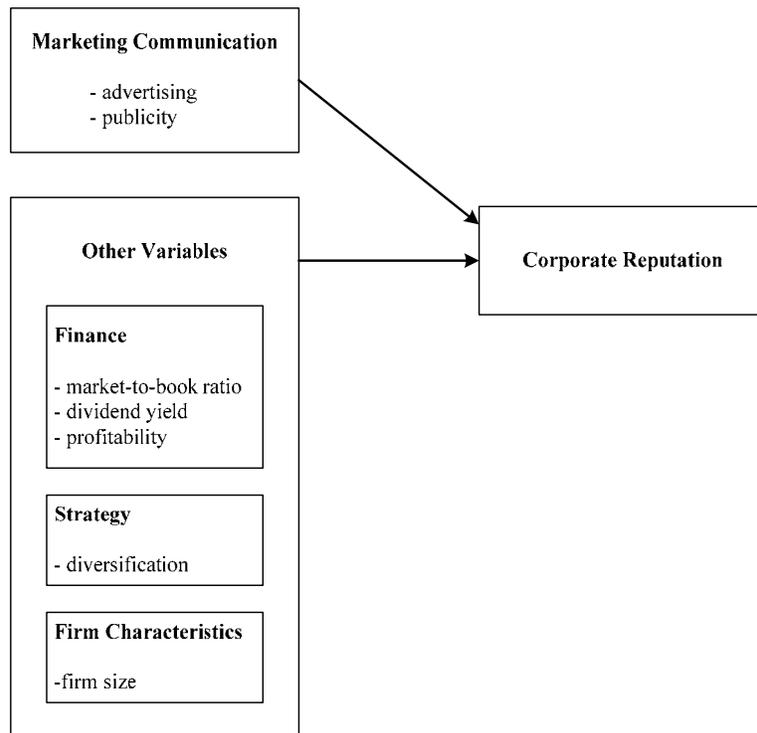
Figure 2

Framework for Analysis - Sales Revenue
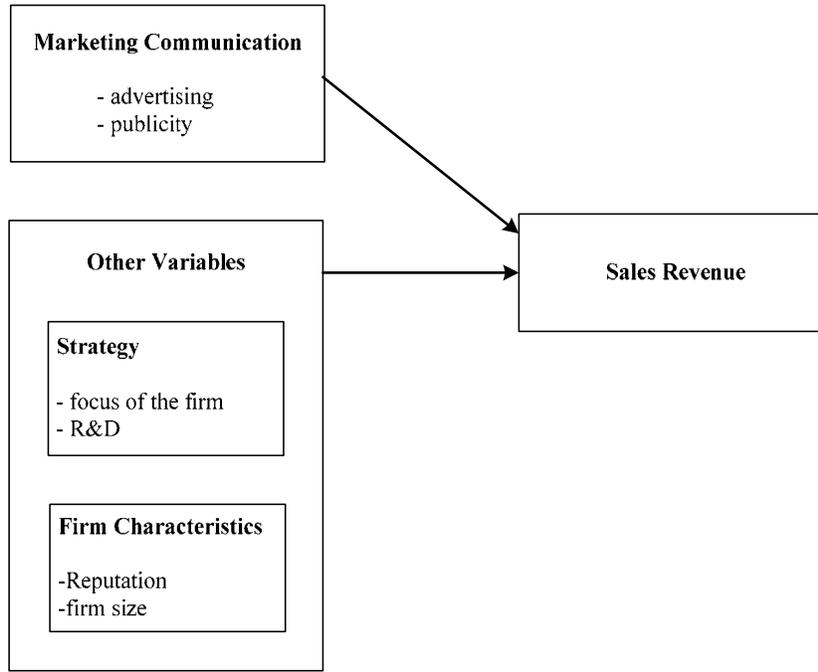
Detailed discussions about each variable are listed as follows:

Independent Variables

<u>*Advertising*</u>

Advertising is measured as a firm's total advertising expenditure for the year. While there is disagreement regarding the definition and measurement of advertising, most quantitative research investigating the relationship between

advertising and market performance has traditionally measured advertising in terms of annual expenditures (Balasubramaniana and Kumar, 1990; Ailawadi, Farris, and Parry, 1994; Zinkhan and Cheng, 1994; Herremans et. al., 2000; Yoo and Mandhachitara., 2003; Ailawadi et. al., 2003; Mizik and Jacobson, 2003; Fombrun and Shanley, 1990; Graham and Frankenberger, 2000). To measure the quantity of advertising, researchers typically assume that advertising dollar expenditures capture alternative choices of media, psychological appeals, and copy. Previous studies examining factors that influence corporate reputation have also defined advertising as annual expenditures (Fombrun and Shalley, 1900; Roberts, 2000; Acquaah, 2003). Therefore, this study measures advertising as actual annual expenditures on advertising. Advertising expenditure data were drawn from the COMPUSTAT database. This database provides annual accounting information regularly reported by public firms to the Securities and Exchange Commission (SEC).

A lagged effect of advertising on corporate reputation and sales revenues was anticipated. Thus, in order to account for a carryover effect and preclude reverse causality, this study used a lagged effect of a firm's advertising (year t-1) on its reputation and sales revenue in year t.

Publicity

Since advertising or marketing professionals and public relations or journalism professionals all have different orientations and definitions of public relations, realistically, it is very difficult to find a standardized measurement of public relations. Although a few studies measure pubic relations in terms of monetary value, such as annual expenditures on public relations activities (Kim 1997, 2002), the present study does not measure public relations in monetary terms. This deserves further explanation. There are a few reasons why public relations cannot be measured in terms of expenditures when simultaneously exploring the effect of advertising and public relations. One important reason is that there are no official PR expenditure data. While a few industry studies have surveyed public relations expenditure [Thomas L. Harris/Impulse Research Survey 1997; The AMA/Wayman Group Marketing Industry Report Miller 1996; Nichol & Co.'s Importance of PR at *Fortune* 500 companies study by Proof Positive 1998; the Conference Board's Managing Corporate Communications in Competitive Climate study by Troy 1993; and Corporate Contributions study by Tillman 1996], most of them have measured public relations in terms of expenditure ranges, rather than as exact figures. Moreover, those data are typically kept confidential.

Also, even if a researcher gets public relations expenditure data from each corporation, there is still a problem in representing public relations expenditures. Generally, public relations expenditure data reported from a public relations department in a company include corporate advertising expenditures. However, most advertising data (e.g., *Adage* or COMPUSTAT database) have been reported on the basis of total media expenditure, including both brand advertising and corporate advertising expenditures. That is, there is some overlap in advertising expenditure data and public relations expenditure data. It is impossible to separate brand advertising expenditure and corporate advertising expenditure in the official advertising expenditure data. Therefore, this might be problematic when one attempts to simultaneously examine advertising and public relations effects in terms of monetary value.

This fact is clearly evidenced in Hutton, Goodman, and Alexander's (2001) study and Kim's (2001) study. For example, Kim (2001) described public relations expenses as including eight categories: 1) media and press relations, 2) employee communications, 3) local community relations, 4) federal and local government affairs, 5) environmental and safety affairs, 6) investor relations, 7) contributions, and 8) corporate advertising. This definition is similar to the one used in the study by Hutton, Goodman, and Alexander (2001). They mentioned that public relations expenditures consist of 1) corporate advertising, 2)

foundation fundings, 3) social responsibility (community relations, nonfoundation

fundings, etc), 4) government relations, 5) employee communications, 6) investor

relations, 7) department management, 8) corporate identity, 9) media relations,

10) annual/quarterly reports, 11) industry relations, and 12) executive outreach.

According to their study, corporate communication professionals reported that

corporate advertising occupied a great portion of PR expenditure. These studies

also indicate that the firms include different types of activities as public relations

expenditures.

Since this study simultaneously examines advertising and pubic relations

effects, public relations expenditures are not a good measure for this study.

Moreover, obtaining public relations expenditure data for a 21-year period is not

realistically feasible because of the absence of available public data.

Alternatively, public relations has been measured in terms of publicity in

prior studies. Many communication researchers refer to "source credibility"

theory when mentioning the effect of public relations. Recently, marketing-related

academic researchers and professionals have said that as traditional advertising

struggles to catch consumers' attention, public relations has been recognized as a

vital marketing communication tool because of its credibility and reliability

(*Economist,* 2006, Ries and Ries, 1996).

The media provide positive or negative information about a firm to various stakeholders. Since some stakeholders lack direct experience with a firm, they rely on information provided by the media who screen, spin, and broker information for stakeholders. According to Fombrun (1996) and McQuail (1985), stakeholders believe that the media help them make sense of companies' complex activities, and as such, affect corporate reputation. The media report the evaluations of other information intermediaries and provide a consolidated source of information for stakeholders. The media is a counteracting institution that reduces stakeholders' uncertainty about a firm's characteristics, which is reputation's signaling role (Akerloff, 1970; Fombrun and Shanley, 1990; Weigelt and Camerer, 1988). Therefore, even though publicity may not represent the whole spectrum of public relations activities, it is the most realistic measure of public relations.

To obtain a firm's publicity data for each year, content analysis was conducted. This author determined that a newspaper is the best media source of public knowledge and opinion about companies. Although a mention on the evening television news is a strong signal about the salience of the company, newspapers have a more salient effect in setting the agenda among the public than does television news. The lead story on page one, front page versus inside page, the size of the headline, and even the length of a story in newspapers all

communicate information about the salience of the company (Carroll and McCombs, 2003). Moreover, audience recall is stronger from newspaper stories (DeFleur, Davenport, Cronin, and DeFleur, 1992; Robinson and Levy, 1996). Thus, publicity is defined as the extent of favorableness of news articles about a firm written in newspapers during the year.

The selected sources are two major daily newspapers whose coverage could be traced a 21 -year period: *Wall Street Journal* and *The New York Times*. These two major newspapers frequently report on the day-to-day business news and have been frequently used in many prior studies. Also, they were ranked in second and third places on the top 10 daily newspapers in the United States as of March 31, 2006 (The Audit Bureau Circulation).

The news presented about a firm can deal with all kinds of information about a company including the CEO's image, employee satisfaction, and work conditions, etc., as well as product information. Therefore, the sample of news articles included all letters to the editor, all editorials, all columns, and all other news articles about the firm.

Data on news about a firm were collected from the online news database Lexis-Nexis, using a keyword of the name of each company. As a result, tremendous amounts of news stories about a firm for the 21- year period from 1985 to 2005 were found. For example, there were 78,984 news stories about

Johnson & Johnson for 21 years from 1985 through 2005. For AT&T, 17,854 news stories were found for a 21-year period from 1985 to 2005.

Thus, a random sample was employed for content analysis. Since there are no universally accepted criteria for selecting the sample size, this study determined the desired sample size using a generalized method. According to McCombs and Poindexter (2000) and Neuendorf (2002), about 400 news reports of each company are desirable at 95% level of confidence and ±5% sampling error. For each company, therefore, approximately 400 news articles about a firm from 1985 through 2005 were randomly selected using a systematic random sample. That is, 19 news articles about a firm for each year were collected. For companies with fewer than 400 articles in given years, all articles were selected to increase accuracy. This sampling procedure yielded a total of 6,852 news stories for all 18 companies.

The contents of each news story were analyzed and classified as indicating favorable, unfavorable, or neutral news about a firm for each year. Two coders read and coded the full contents of all articles. This study followed Deephouse's (2000) coding scheme to evaluate each news article. When a firm was praised for its actions or associated with actions that increase a firm's overall evaluation, it was rated as "favorable." An "unfavorable" occurred when a firm was criticized for its actions or associated with actions that decrease a firm's overall evaluation,

such as legal regulation, crises, federal investigations, law suits, layoffs, etc. A "neutral" rating was the declarative reporting of performance without evaluation, such as announcements concerning performance, new products, a new CEO, and so forth. When there is a "mixed" evaluation – both favorable and unfavorable – in a news article, a neutral rating was given. Even though a "mixed" and a "neutral" rating are conceptually different, they were used interchangeably when there was a balance of favorable and unfavorable reporting in a news article.

Each coder recoded the total number of articles, the number of favorable articles, the number of unfavorable articles, and the number of neutral articles for the year. Two coders indicated high intercoder reliability (95%)[1]. After the coding was complete, the author coded a random sample of 100 articles as a subsample. Coders and the author agreed on 97% of the codes. Generally, these coding procedures enhance the reliability of the coding process.

Based on this classification, a favorable index of news for each year was created using the Janis-Fadner coefficient of imbalance (Janis and Fadner, 1965, Equation 1). This equation calculates the degree to which media reports were positive. The Janis-Fadner (1965) coefficient of media favorability has been used in strategy research involving media to assess the degree of media favorability (Carroll, 2004; Deephouse, 2000; Pollock and Rindova, 2003). Initially developed

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[1] SPSS (Statistical Package for the Social Science) was used to calculate Cohen's kappa. Cohen's kappa measures the agreement between the evaluations of two raters when both are rating the same object.

for analyzing wartime propaganda, it measures the relative proportion of favorable to unfavorable articles while controlling for the overall volume of articles. In this study, this index was used as representing the publicity measure.

The formula to calculate publicity measure is as follows:

$$\text{Publicity} = \begin{cases} (f^2 - fu)/(\text{total})^2, & \text{if } f > u \\ 0, & \text{if } f = u \\ (fu - u^2)/(\text{total})^2, & \text{if } f < u \end{cases} \qquad \text{[Equation 1]}$$

where f = the number of favorable recording units in a given year; u = the number of unfavorable recording units in that year; and total = the total number of recording units in that year. The range of this variable is -1 to 1, where 1 indicates all positive coverage, -1 indicates all unfavorable coverage, and 0 means a balance between the two over the year.

As a result, 29.9% of the news articles were rated as unfavorable, 8.2% were coded as neutral, and 61.9% were rated as generating favorable publicity.

Dependent Variables

<u>*Corporate Reputation*</u>

Reputation encompasses everything that is known about a firm. As an empirical representation, it is a judgment of the firm made by a set of audiences

on the basis of perceptions and assessments that are assembled and made

available via the ranking system (Fombrun and Shanley, 1990). The ranking

system defines, assesses, and compares firms' reputations according to certain

predefined criteria. In this study, corporate reputation is defined as a perceptual

representation of a company's past actions and future prospects that describe the

firm's overall appeal to all its stakeholders when compared to other leading rivals

(Roberts and Dowling, 2002; Weiss, Anderson, and MacInnis, 1999). That is,

reputation refers to a firm's overall evaluation at the corporate level, rather than

brand level.

Typically, national lists of reputation are published annually by national

business magazines (e.g., *Fortune*, *The Financial Times*, *The Far East Economic

Review*, *Asian Business and Management Today*, etc.). One of the most well-

know reputation ranking systems is found in the annual *Fortune* survey of

America's Most Admired Companies, which has been published by *Fortune*

Magazine since 1982. *Fortune*'s database provides information that can be used to

operationalize the corporate reputation activities of firms (Vergin and Qoronfleh,

1998). In this study, corporate reputation will be measured as *Fortune*'s

reputation index, derived from *Fortune*'s annual survey of America's Most

Admired Companies.

Fortune has conducted surveys on large American firms since 1982 and has published the results early each year since 1983. The magazine collects data on the largest firms in over 30 industries. *Fortune* administers the surveys to over 8000 top executives and outside directors who are knowledgeable about the industries in which their firms operate, and market analysts who evaluate firms in these industries. Industry analysts and executives within an industry have been shown to be reliable and accurate raters of corporate strategy (Chen, Fahr, and MacMillan, 1993). They are asked to rank the companies based on their effectiveness in performing the activities described by each of the eight attributes. The eight attributes are

      (1) quality of management,

      (2) quality of products or services,

      (3) innovativeness,

      (4) ability to attract, develop, and keep talented people,

      (5) wise use of corporate assets,

      (6) responsibility to the community and environment,

      (7) soundness of financial position, and

      (8) value as a long-term investment.

Each company is rated relative to its leading competitors on eight characteristics using an 11-point scale (0 = poor, 10 = excellent). Then, an index of overall reputation from the eight single dimensions is made. That is, the reputation rating is reported as an overall reputation index. The response rate has averaged about 50% for each year of the survey. With this high response rate, *Fortune*'s survey sample is probably larger than most samples obtained by academic researchers, and its members are probably more qualified and better informed (Brown 1994). The results have been widely circulated and cited in popular press outlets. According to Dutton and Jackson (1987), if reputational rankings are widely publicized (e.g., *Fortune* has have become), they may alter managers' perceptions of environmental threats and opportunities and of their firms' strengths and weaknesses and so influence the mobility barriers that managers enact. That is, well-reputed firms have a competitive advantage within their industries, but poorly reputed firms are at a disadvantage.

The *Fortune* data have been chosen to measure the corporate reputation for several reasons in many previous studies. First, the eight attributes likely represent the collective and collaborative capabilities of a firm's corporate management that are difficult for rivals to imitate and thus may be used to manage and build a firm's reputation and earn firm-specific profits. Second, the survey offers data from a large sample of industry experts who have access to internal

60

firm and industry information about the qualitative dimensions of the firm's

intangible resources and capabilities. It has been argued that the assessment of a

firm's intangible resources and capabilities should not be an internal affair, but

should be done by external constituents who can objectively examine what the

firm does more effectively than its competitors (Collins and Montgomery, 1995).

According to Hammond and Slocum (1996), the quality of respondents of the

Fortune survey is comparable to those that could be obtained elsewhere since

respondents only rate firms with which they are familiar. In an exploratory study,

Chen et al. (1993) provide support for the reliability and accuracy of information

offered by top executives and market analysts. For these reasons, this study used

Fortune's America's Most Admired Companies data to measure corporate

reputation. The description of how America's Most Admired Companies survey

was conducted in 2005 is presented in Appendix A.

Sales Revenue

Many previous studies have attempted to examine the impact of

advertising or public relations on market performance. In general, market

performance has been measured by either profitability or sales/revenue.

Profitability can be expressed in several ways, including return on investment

(ROI), return on sales (ROS), and return on equity (ROE) (Szymanski, Bharadwaj,

and Varadarajan, 1993). In this study, sales revenue was chosen for measuring the company's market performance impact because it is the most straightforward and popular measure of market performance. The data on sales revenue were obtained from COMPUSTAT database.

Other Variables

Other variables that have been shown to influence corporate reputation or market performance measures were included. These control variables estimate the net effects of marketing communication on corporate reputation and sales revenue. The selection of these other variables is based on prior empirical studies. The selection of these variables is also partly influenced by the availability of data.

<u>*Diversification*</u>

Although there are conflicting interpretations about diversification, previous research has indicated that the capital markets favor firms that only diversify into related product market domains to capitalize on synergy (Bettis, 1981; Rumelt, 1974). Reputation literature has noted that when firms diversify into related product market, it enhances firm's reputation. Firms with unrelated portfolios, for instance, may spirit cash away from profitable divisions instead of reinvesting it in needed R&D (Hoskisson and Hitt, 1988), spend less on

advertising (Bettis, 1981), and carry a high percentage of debt (Barton and

Gordon 1988), all of which may harm a firm's external image and increase its

perceived risk to investors.

Diversification was derived by using the COMPUSTAT database.

COMPUSTAT provides data on a firm's annual sales by segment. From these

data, a continuous Herfindahl-type measure of diversification (Amit and Livnat,

1988) across segments at the end of fiscal year was created by using this equation,

$$1- (\sum Sales_j^2)/(\sum Sales_j)^2 , \qquad\qquad \text{[Equation 2]}$$

where j = the number of segments.

Montgomery (1982) indicated that firms with low diversification tended to

be more focused and that firms with high diversification were involved in a broad

range of business. The diversification measure is highly correlated with Rumelt's

(1974) categorical measure of relatedness, suggesting that firms with high scores

on the index are more likely to encompass less related business under their

corporate umbrellas than firms with low scores on the index. The reputation

literature has noted that diversification tends to negatively influence corporate

reputation (Fombrun and Shanley, 1990).

This study accounted for the effect of a firm's diversification in period t-1 on corporate reputation in period t in accordance with Fombrun and Shanley (1990)'s conceptual framework of reputation building.

Market-to-Book Ratio

Just as price signals product quality, high economic performance signals a firm's inherent quality to its constituents. That is, high performance makes constituents assess firms favorably. The market-to-book ratio is a good indicator to measure a firm's financial value. The market-to-book value relates the firm's market value per share to its book value per share. The market-to-book ratio is calculated by dividing price per share by book value per share. Book value per share can be calculated by dividing total owner's equity by the number of shares outstanding (Copeland, Keller, and Murrin, 1994). That is, the general definition of the market-to-book ratio is as follows:

M/B Ratio = price per share/(total owners' equity/number of shares

outstanding)   [Equation 3]

A market-to-book ratio of 1.0 means that the market value of a firm is equal to its book value. A market-to-book ratio greater than 1.0 means that the

market value is higher than the book value and suggests that a firm has intangible assets which are not recognized by current accounting practices. A market-to-book ratio less than 1.0 means that the book value of a firm is higher than the market value of a firm. It indicates that a firm does not have intangible assets exceeding tangible assets.

Market-to-book ratio is an important control variable in this model. The measure of reputation used in this study is based on the perceptions of senior company managers and directors, as well as associated industry analysts (*Fortune*'s reputation index). While the use of a perceptual measure of reputation poses no problems per se (Benjamin and Podolny, 1999; Dowling, 2001), there may be concern about the financial orientation of these respondents. One might suspect that the reputation scores that are reported are confounded by the respondents' expectations of the firms' future financial performance. In other words, higher reputation scores may be given to firms that are expected to perform well in future years. Inclusion of the market-to-book value variable eases this concern because it captures the market's expectation of future economic returns (Muller, 1990). The market-to-book ratio was calculated using Equation 3. Data needed for Equation 3 are derived from the COMPUSTAT database.

Accounting Profitability

Accounting profitability measured as return on investment capital (ROIC) is another indicator to represent a firm's economic performance. ROIC is a calculation used to determine the quality of a company. The general definition for ROIC is as follows:

Return on Investment Capital = (net income-dividends)/total Capital

[Equation 4]

Total capital includes long term debts, preferred stock, and common equity. This is always calculated as a percent. Accounting profitability was calculated using Equation 4. Data for Equation 4 are from the COMPUSTAT database. As with diversification, the effect of the prior year's accounting profitability on the current year's corporate reputation was considered based on prior research (Fombrun and Shanley, 1990).

Dividend Yield

Dividend policy is also an aspect of economic performance. High distribution may be interpreted as indicating that a firm is more profitable than competitors, but it may be regarded as a signal that the firm lacks attractive

66

investment opportunities capable of ensuring future cash flow (Ross, 1977). These expectations also influence the stock price of the firm. Therefore, the dividend yield (a ratio of dividend payout to stock price, [Equation 5]) is a useful indicator of the public's view of firms. Ross and Westfield (1988) suggested that firms with high growth prospects will generally have lower dividend yields. Prior studies expected a negative association between dividend yield and reputation. For example, Fombrun and Shanley (1990) suggested that when publics assess the reputational status of the firm, the greater a firm's current dividend yield, the worse its reputation. The COMPUSTAT database provides a firm's dividend yield for each year.

Company Size

Large firms tend to receive a great deal of public scrutiny and attention. The availability of information may benefit large firms by inflating audiences' familiarity with their activities (Tversky and Kahneman, 1974). Therefore, a larger company is believed to have a more favorable corporate reputation (Fombrun and Shaley, 1990). Also, firm size has been employed as a control variable to estimate market performance (Deephouse, 2000). Thus, it is reasonable to expect that firm size will influence corporate reputation and sales revenue.

In this study, firm size was measured using the annual number of employees in accordance with previous studies (Bharadwaj et al., 1999; Nickell, 1996; Acquaah, 2003). Data on the number of employees were obtained from the COMPUSTAT database.

Research & Development

There is a large body of finance, management, and marketing research that relates the intangible assets created by research and development (R&D) to the firm's market and financial performance. Although there is a debate about the size of the effects of R&D investments of different performance metrics (Boulding and Staelin, 1995; Erickson and Jacobson, 1992), it is well-established that firms' R&D investments generate persistent profits (Roberts, 2001) and superior market value (Jaffe, 1986). In a meta-analysis of 210 profitability studies, Capon, Farley and Hoeing (1990) concluded "dollars spent on R&D have an especially strong relationship to increased profitability."

R&D leads to greater cash flow and increases firms' market value. For example, intense R&D can ensure speedy and successful commercialization of technologies and products at a low cost (Dutta, Narasimhan, and Rajiv, 1999). Thus, higher R&D investment may lead to greater speed and levels of cash flow, along with lower vulnerability and volatility, which can promote greater market

value in the long run (Griffin and Hauser, 1996; Srivastava, Shervani, and Fahey, 1999). Also, from the resource-based-view (RBV) perspective, marketing and R&D have been recognized as performance-enhancing instruments. R&D expenditures of each firm were derived from the COMPUSTAT data set.

In order to account for a carryover effect and preclude reverse causality, this study used a lagged effect of a firm's R&D (year t-1) on its sales revenue (year t).

Focus of the Firm

Focus of the firm was measured by the number of industry segments in which the firm operates (Rao, Agarwal, and Dahlhoff, 2004; Luo and Donthu, 2006). Focus of the firm is related to diversification. According to Montgomery (1982), firms with low diversification tended to be more focused and firms with high diversification were involved in a broad range of business. In prior studies, interpretations about the relationship between the focus of the firm and market value are conflicting. Thus, this study has no prior expectation of this relationship. COMPUSTAT provides data on a firm's annual sales by segment. From this data, the number of industry segments of a firm was counted.

Corporate Reputation

Literature dealing with the relationship between reputation and market performance is well-established. Many empirical studies have found that a favorable reputation positively affects a firm's performance (Brown 1998; Deephouse, 2000; Fombrun, 1996; Kotha et al., 2001; McMillan and Joshi, 1997; Roberts and Dowling 2002). In general, brands with a good reputation are posited to be high in sales since these brands enjoy greater perceptual enhancement. Such superior value is also viewed in the marketing literature as leading to greater market share and profits for the company (Day and Wensley, 1998). Thus, the positive reputation of the brand or/and company leads to greater company profitability.

There is a great deal of evidence to support the idea that corporate reputation contributes to the market performance. Traditionally, although a lack of a widely accepted measure of reputation has caused difficulty in creating well-reasoned and defensible answers about corporate reputation and reputational dynamics, marketing literature suggests that a good reputation supports and enhances sales force effectiveness (Dowling, 2001). Recently, formal research has outlined some of the strategic planning implications behind corporate reputation (Fombrun and Van Riel, 1997). For example, Hammond, Annis, and Slocum (1996) found that corporate reputation is linked with a firm's bottom line financial

performance. According to their findings, investors may consider less socially responsible organizations riskier investments because of possible governmental intervention. If a firm is viewed as socially responsible, it may have a relatively low financial risk as a result of its strong relationship with the surrounding community. Roberts and Dowling (2002) found that a good reputation at a given point in time allows superior financial performance to persist by examining the relationship between reputation and the persistence of superior profit outcomes over time. Kim (1997, 2001) found a positive relationship between a company's reputation and financial returns and revenues.

Reputation was measured as *Fortune*'s reputation index. A lagged effect of reputation on sales revenue was anticipated. Thus, the effect of reputation in year t-1 on sales revenue in year t was examined.

All data included in this study – advertising expenditures, publicity, corporate reputation, sales revenue, and other variables such as dividend policy, diversification, market-to-book ratio, profitability, R&D, focus of the firm and firm size – are the firm level data. Details on measures of variables are summarized in Table 2.

Table 2

Summary of Measures and Data Sources

Variables	Definition	Measures	Data Source
Advertising	Total Advertising Expenditure of the year	Advertising expenditure	COMPUSTAT
Publicity	The Extent to Which the News Articles are Positive about a Company	$(f^2 - u)/(total)^2$, if $f > u$ 0, if $f = u$ $(fu - u^2)/(total)^2$, if $f < u$	Lexis-Nexis
Corporate Reputation	Corporate reputation based on an annual survey of the most admired U.S. corporations	*Fortune* Reputation index	*Fortune*
Sales Revenue	Net Sales of the year	Sales	COMPUSTAT
Diversification	Business relatedness measure	$1 - (\sum Sales_j^2)/(\sum Sales_j)^2$	COMPUSTAT
M/B ratio	The market value of a firm dividend by capital invested	price per share/(total owners' equity/number of shares outstanding)	COMPUSTAT
Profit	Return on investment capital (ROIC)	(net income-dividends)/total capital	COMPUSTAT
Dividend Yield	The yield a company pays out to its shareholders in the form of dividends	Dividend payout/stock price	COMPUSTAT
R&D	Total R&D expenditure of the year	R&D expenditure	COMPUSTAT
Focus of the Firm	The number of industry segments the firm operates of the year	The number of industry segments	COMPUSTAT
Firm Size	Number of employees	The annual number of employees	COMPUSTAT

CHAPTER 5

ANALYSES AND RESULTS

This study examines the impact of a firm's advertising and publicity on corporate reputation and sales revenue. The underlying argument of the hypotheses regarding the effect of marketing communication on corporate reputation and market performance is that firms with high levels of advertising and favorable publicity generate much higher corporate reputation assessments and sales revenues. To assess the effects of these two important marketing communication activities – advertising and publicity – two sets of analyses were carried out: descriptive analysis and time-series analysis.

First, in order to address whether firms with high advertising and favorable publicity build much higher corporate reputations and sales revenues, this study conducted a descriptive analysis. Rather than providing simple correlations, mean values, and standard deviations of each variable, the present study compares the mean values of corporate reputation for firms with high versus low advertising and favorable versus unfavorable publicity. For the purpose of comparison, firms were classified as high or low in advertising expenditure and favorable or unfavorable in publicity using a median split. Then, simple interaction effects of advertising and publicity on corporate reputation were

addressed. The effects of the level of advertising and the valence of publicity on sales revenues were also examined in the same way.

For overall descriptive analyses, time-series data were dealt with as cross-sectional data. A total of 378 firm-year observations for 18 companies had complete data on advertising, publicity, corporate reputation, and sales revenue from 1985 through 2005.

Second, after addressing the descriptive analysis, hypotheses testing was done. For testing hypotheses, a time-series analysis was conducted. Since longitudinal time-series data displayed auto-correlative properties, autoregressive (AUTOREG) procedure in SAS was employed. For a time-series analysis, 21-year data of 18 companies from 1985 to 2005 were used. More details on time-series analysis are presented in the hypotheses test. Hypotheses test results followed the descriptive analyses.

Descriptive Data Analysis

Prior to testing the hypotheses, a few descriptive analyses were conducted using cross-sectional data of 378 firm-year observations for 18 companies. This is to assess the implicit argument of this study that firms with high levels of

advertising and favorable publicity generate higher corporate reputations and sales revenues.

Next, this section describes the relationship between publicity and corporate reputation and the relationship between publicity and sales revenue. Then, it presents the relationship between three different measures of advertising and corporate reputation and the relationship between three different measures of advertising and sales revenue. Finally, simple results of the interaction effect of advertising and publicity on corporate reputation and the interaction effect of the two marketing communication variables on sales revenue are provided.

Publicity and Corporate Reputation

The question of whether favorable or unfavorable publicity made any difference in corporate reputation is examined. As discussed previously in the section on measures of variables, the Janis-Fadner coefficient of imbalance [Equation 1] yields the index of news favorability, publicity. The range of this variable is -1 to 1, where -1 indicates all unfavorable coverage, 1 indicates all favorable coverage, and 0 means a balance between the two over the year. For example, if a firm had -0.89 in this variable, it means that unfavorable publicity was dominant for the firm over the year.

In order to see the difference between favorable and unfavorable publicity, the publicity variable was recoded into two categories (favorable and unfavorable publicity). When a firm had a minus number in the publicity variable, it was recoded as "-1," indicating that unfavorable publicity was predominant over the year. In contrast, the firm was recoded as "1" when publicity variable showed a plus number, suggesting that favorable publicity was dominant over the year. Here, the neutral publicity indicated as "0" in Janis-Fadner coefficient was eliminated to compare the distinct effects of favorable and unfavorable publicity on corporate reputation. As a result, a total of 31 of 378 observations (8.2%) were excluded.

This study explored the effects of favorable and unfavorable publicity on corporate reputation, using cross-sectional time series data of 378 firm-year observations for 18 companies. Overall, for the 18 companies, favorable and unfavorable publicity exhibited a different effect on corporate reputation: firms with favorable publicity (mean= 7.08, S.D. = .89) vs. firms with unfavorable publicity (mean = 6.53, S.D. = 1.04). This difference was statistically significant (t = -5.075, p < .0001). That is, firms with favorable publicity exhibited a much higher corporate reputation. Figure 3 shows the visual illustration of the overall 18 companies.

Figure 3

Mean Value of Corporate Reputation for Firms with Unfavorable and Favorable Publicity
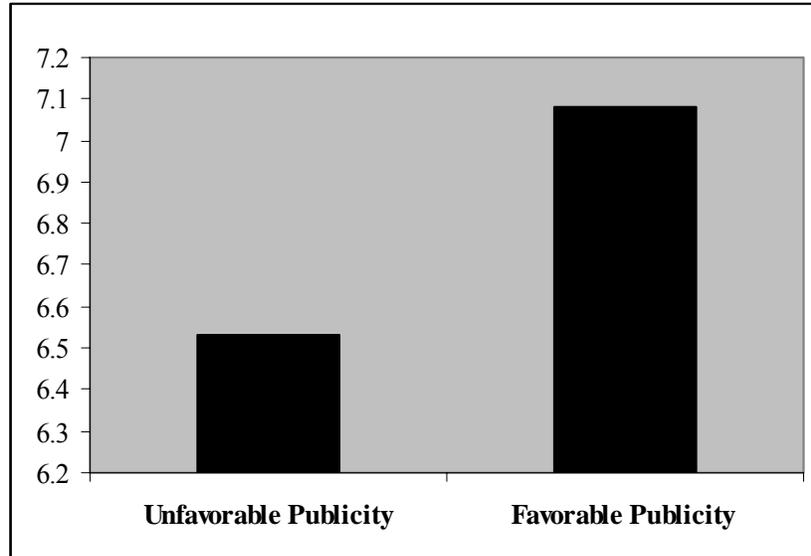
Publicity and Sales

The descriptive analysis of publicity and sales was done in the same manner as corporate reputation. The publicity variable was divided into two categories (favorable and unfavorable) to see if there was any difference in sales revenue depending on unfavorable and favorable publicity.

In addition to the absolute sales, the effect of publicity on changes in sales revenue was examined. Change data can detect how the type of publicity is related to changes in sales revenue. Changes in sales were obtained from original

data by subtracting sales dollars in year t-1 from sales dollars in year t (Sales $_t$ –

Sales $_{t-1}$) [Equation 6]. If a firm's sales of the year (t) were less than those of the

previous year (t-1), changes in sales could be negative numbers.

Unlike publicity and corporate reputation, favorable and unfavorable

publicity showed no effect on absolute sales revenue (firms with unfavorable

publicity, mean = 13016, S.D. = 13495.10; firms with favorable publicity, mean =

13714, S.D. = 15263.92, t = -.432, *n.s.*). As indicated in Figure 4, however,

changes in sales were different depending on the type of publicity, and the

difference was statistically significant (firms with unfavorable publicity, mean = -

342.22, S. D. = 5734.90; firms with favorable publicity, mean = 731.91, S.D. =

3137.25, *t* = -2.244, *p* < .05). In other words, when favorable publicity was

dominant, firm sales increased compared with the previous year. In contrast, firm

sales decreased when unfavorable publicity was widespread.

Figure 4

Mean Value of Changes in Sales for Firms with Unfavorable and Favorable Publicity
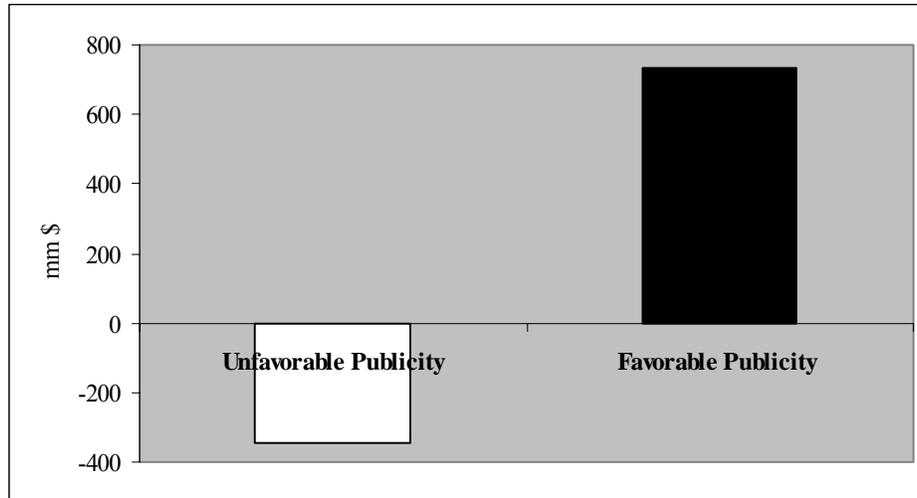
Advertising and Corporate Reputation

In this descriptive analysis, the effect of advertising as a vital component in the process of creating a firm's value was measured in three ways: absolute advertising expenditures, changes in advertising expenditures, and advertising intensity.

The advertising effect might be different for these three different measures of advertising. Absolute advertising expenditures were the total advertising expenditures of year t. Changes in advertising expenditures were obtained the same way that changes in sales were obtained. That is, changes in advertising expenditures were obtained from original data by subtracting advertising

expenditure in year t-1 from advertising expenditure in year t ($AD_t - AD_{t-1}$) [Equation 7]. Change data can provide a perspective on the marginal effect of advertising. Lastly, advertising intensity was measured as the ratio of advertising expenditures to total assets for each firm-year observation (advertising expenditure/total assets) [Equation 8], which were also derived from the COMPUSTAT database.

Total advertising expenditures and advertising intensity were recoded into two categories using median splits. That is, they were divided into two categories based on their median value of advertising expenditures and of advertising intensity, respectively: low advertising vs. high advertising; low advertising intensity vs. high advertising intensity.

Changes in advertising expenditures were recoded into two categories based on the direction of the changes: negative changes in advertising expenditures and positive changes in advertising expenditures. When a firm spent more on advertising in year t than in year t-1, change data of advertising expenditures could be a positive number. If a firm's advertising expenditures were less than those of the previous year, changes in advertising could be a negative number.

Absolute advertising expenditures were split by their median value (253.30) into two categories: low advertising expenditures and high advertising expenditures. As shown in Figure 5, firms with high advertising expenditures had higher corporate reputation scores than firms that spent less on advertising. The difference was statistically significant (firms with low advertising expenditures, mean = 6.47, S.D. = .8717; firms with high advertising expenditures, mean = 7.23, S.D. = 8808, t = -8.411, p < .0001). Figure 5 presents the mean values of corporate reputation for firms with low and high advertising expenditures.

Figure 5

Mean Value of Corporate Reputation for Firms with Low and High Ad Expenditures
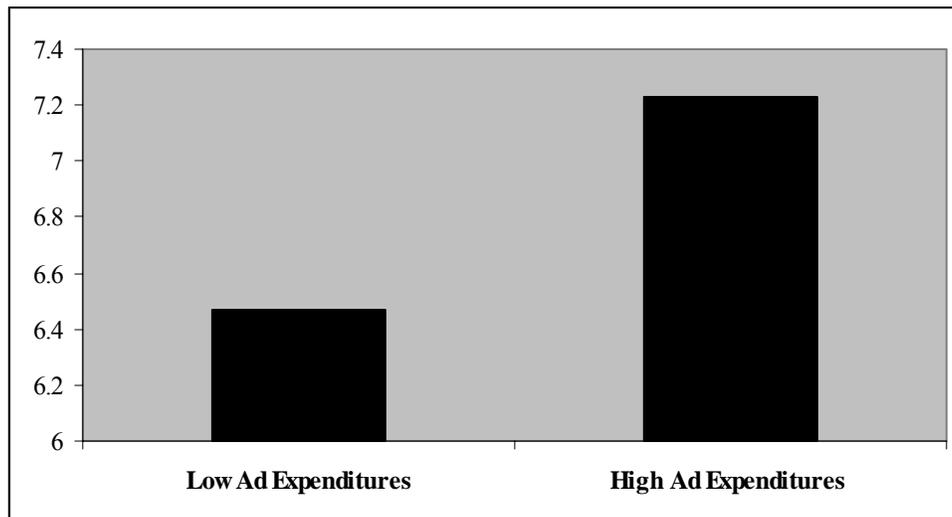
Changes in Advertising Expenditures and Corporate Reputation

Next, the relationship between changes in advertising expenditures and corporate reputation was examined. Changes in advertising expenditures were obtained from original data by subtracting advertising expenditures in year t-1 from advertising expenditures in year t (Advertising Expenditures $_t$ – Advertising Expenditures $_{t-1}$). Then, advertising change data were categorized into two groups based on whether their changes increased or decreased, compared with the previous year: negative changes in advertising expenditures and positive changes in advertising expenditures.

The result found that corporate reputation differed depending on changes in advertising expenditures, and the difference was statistically significant (firms with negative changes in advertising expenditures, mean = 6.61, S.D. = .9036; firms with positive changes in advertising expenditures, mean = 7.00, S.D. = .9536, t = -3.923, p < .0001). That is, when a firm spent more on advertising compared with the previous year, the firm had a higher reputation score. In contrast, corporate reputation decreased when a firm spent less on advertising than the previous year. Figure 6 showed the difference in corporate reputation for firms with negative changes in advertising expenditures and positive changes in advertising expenditures.

These effects of advertising expenditures and changes in advertising expenditures, however, could be attributed to the previous year's sales revenues, since advertising expenditures are decided based on previous year's sales revenues, the ratio of advertising to sales. In many cases, there may be no doubt that sales revenue influence advertising expenditures. That is, higher reputation scores for a firm with positive changes in advertising expenditures could be attributed to higher sales revenues of the previous year. In the following section, thus, advertising intensity was examined to rule out this alternative explanation that the positive relationship between advertising and corporate reputation may be due to larger firms having higher sales revenue.

Figure 6

Mean Value of Corporate Reputation for Firms with Negative and Positive

Changes in Ad Expenditures
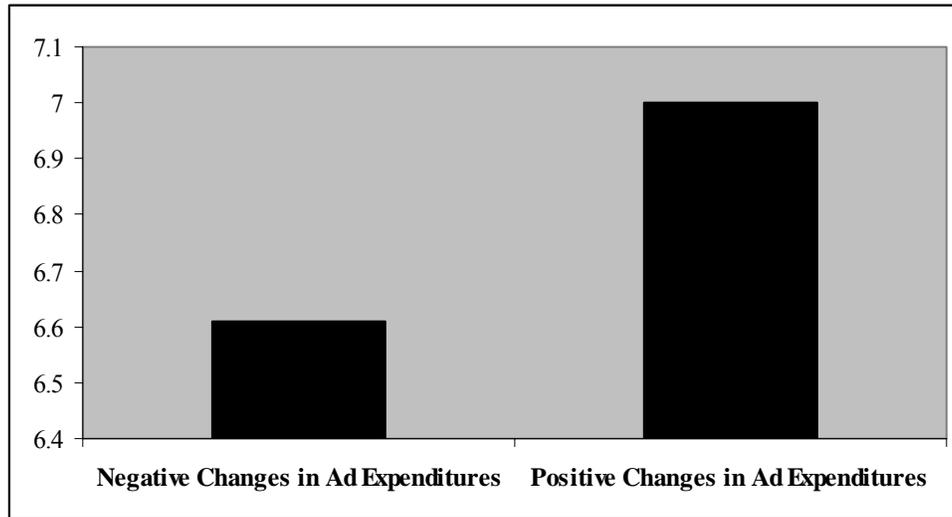
Advertising Intensity and Corporate Reputation

Advertising intensity was measured as the ratio of advertising spending to total assets for each firm-year observation (advertising expenditure/total assets). Simply put, advertising intensity is used as a term controlling for a firm's size effect. Then, advertising intensity was recoded into two categories using median split (median value = 0.0338): low advertising intensity and high advertising intensity.

As in the case of advertising expenditures and changes in advertising expenditures, advertising intensity was also related to corporate reputation. That is, firms with high advertising intensity had higher corporate reputation scores than

firms with lower level of advertising intensity. The difference was statistically

significant (firms with low advertising intensity, mean = 6.49, S.D. = .8932; firms

with high advertising intensity, mean = 7.26, S.D. = .8724, t = -8.132, $p < .0001$).

This finding suggests that firms that have higher advertising expenditures are

more likely to generate favorable assessments of corporate reputation, regardless

of the firm size. That is, a firm's size did not influence the positive relationship

between advertising expenditures and corporate reputation. Figure 7 presents the

mean values of corporate reputation for firms with low and high advertising

intensity.

Figure 7

Mean Value of Corporate Reputation for Firms with Low and High Advertising Intensity
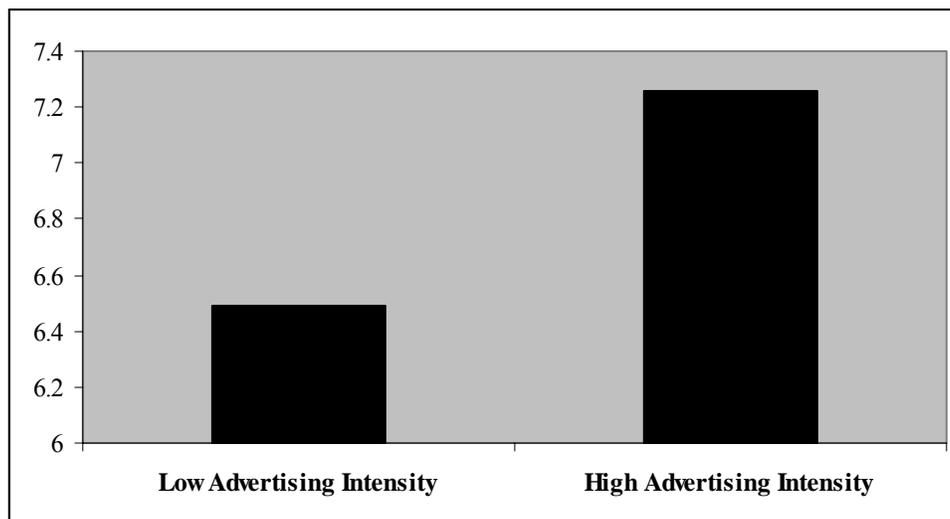
Advertising and Sales

<u>*Advertising Expenditures and Sales*</u>

Firms with higher advertising expenditures generated much higher sales revenues than firms that spent less on advertising, and this difference is statistically significant (firms with low advertising expenditures, mean = 5384.86, S.D. = 3840.48; firms with high advertising expenditures, mean = 19231.45, S.D. = 17005.76, t = -11.145, p < .0001). Figure 8 indicates the result of advertising expenditures and sales.

Figure 8
Mean Value of Sales for Firms with Low Advertising Expenditures
and High Advertising Expenditures
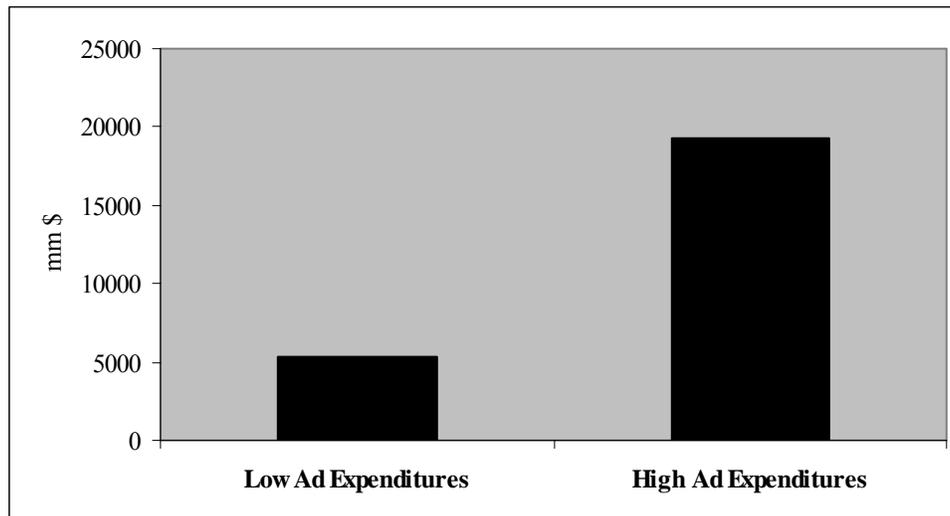
Changes in Advertising Expenditures and Sales

When firms spent more on advertising than they did the previous year, many companies (62%) generated sales increase. However, whether firms spent less or more on advertising compared with the previous year did not show any relevance with absolute sales revenues (firms with negative changes in advertising expenditures, mean = 11567.81, S.D.= 14125.93; firms with positive changes in advertising expenditures, mean = 13105.95, S.D. = 14481.44, t = -.941, n.s.).

Advertising Intensity and Sales

As seen in the advertising expenditures and sales relationship, firms that spent more on advertising expenditures generated much more sales revenue than firms with low advertising expenditures. However, there might be alternative explanations for this relationship. As discussed in the section about advertising and corporate reputation, one alternative explanation is that the positive relationship between advertising and sales revenue may be due to larger firms having higher sales revenue. Therefore, in this section, advertising intensity was examined to eliminate this alternative explanation.

Unlike the relationship between advertising expenditures and sales, advertising intensity was not associated with sales revenue (firms with low advertising intensity, mean = 12501.33 S.D. = 16641.19; firms with high

advertising intensity, mean = 13772.11, S.D. = 11388.80, t = -.855, n.s.). High

advertising intensity did not increase a firm's sales revenues. In other words,

when firm size was controlled for, the positive relationship between advertising

expenditure and sales revenue was not found. Thus, we can assume that the

positive relationship between advertising expenditures and sales revenues might

be attributed to the alternative explanation discussed previously – the positive

relationship between advertising and sales revenue may be due to larger firms

having higher sales revenue.

Interaction of Advertising and Publicity on Corporate Reputation

This section presents some simple results from a bivariate categorical

analysis of the interaction effect of advertising and publicity on corporate

reputation. As shown in Figures 9, 10, and 11, the interactions for three different

measures of advertising and publicity on corporate reputation are rather similar.

They show that firms with high levels of advertising and favorable publicity

generate higher corporate reputations than do firms with low advertising and

unfavorable publicity, respectively. The interaction effect of advertising and

publicity on corporate reputation was not clear. Figures show that there is no

difference in advertising effect between unfavorable publicity and favorable

publicity. That is, regardless of the amount of advertising, favorable publicity generated much higher corporate reputations.

Specifically, as shown in Figure 9, firms with high advertising expenditure and favorable publicity appear to build the highest corporate reputation (e.g., low advertising and unfavorable publicity, mean = 6.20; low advertising and favorable publicity, mean = 6.62; high advertising and unfavorable publicity, mean = 6.87; high advertising and favorable publicity, mean = 7.40). In two different advertising measures – changes in advertising expenditure and advertising intensity – the results were similar. For changes in advertising expenditure, as indicated in Figure 10, positive changes in advertising expenditures and favorable publicity were the most effective in generating favorable assessments of corporate reputation (firms with negative changes in advertising expenditure and unfavorable publicity, mean = 6.31; firms with negative changes in advertising expenditure and favorable publicity, mean = 6.74; firms with positive changes in advertising expenditure and unfavorable publicity, mean = 6.64; firms with positive changes in advertising and favorable publicity, mean = 7.19). For advertising intensity, As seen in Figure 11, high advertising intensity and favorable publicity were also good for favorable judgments of corporate reputation (firms with low advertising intensity and unfavorable publicity, mean = 6.29; firms with low advertising intensity and favorable publicity, mean = 6.69;

firms with high advertising intensity and unfavorable publicity, mean = 6.96;

firms with high advertising intensity and favorable publicity, mean = 7.52).

Figure 9

Interaction Effect of Advertising Expenditures and Publicity on Corporate Reputation
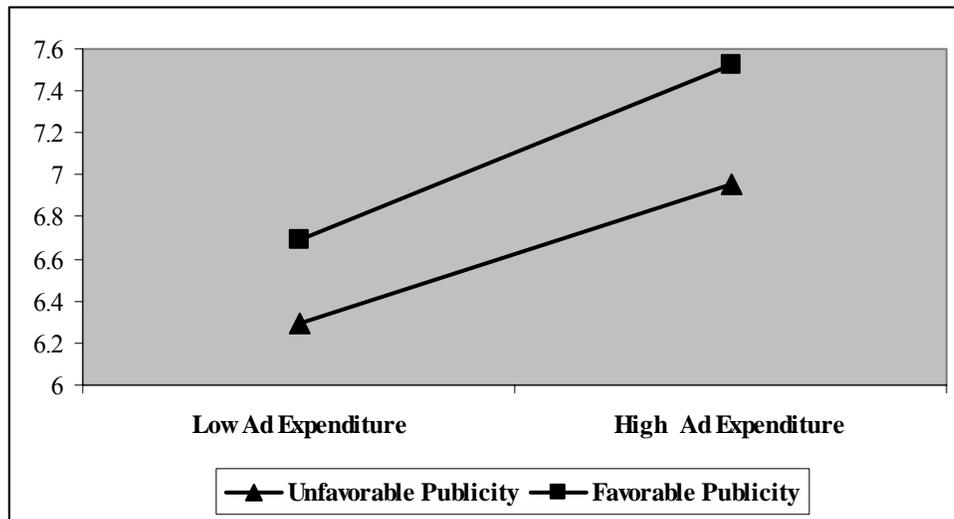
Figure 10

Interaction Effect of Changes in Advertising Expenditures and Publicity on Corporate Reputation
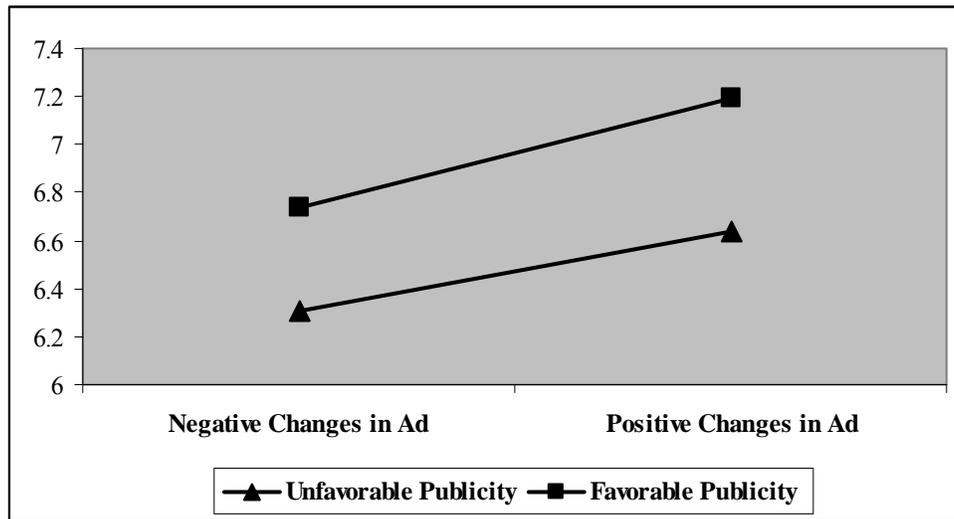
Figure 11

Interaction Effect of Advertising Intensity and Publicity on Corporate Reputation
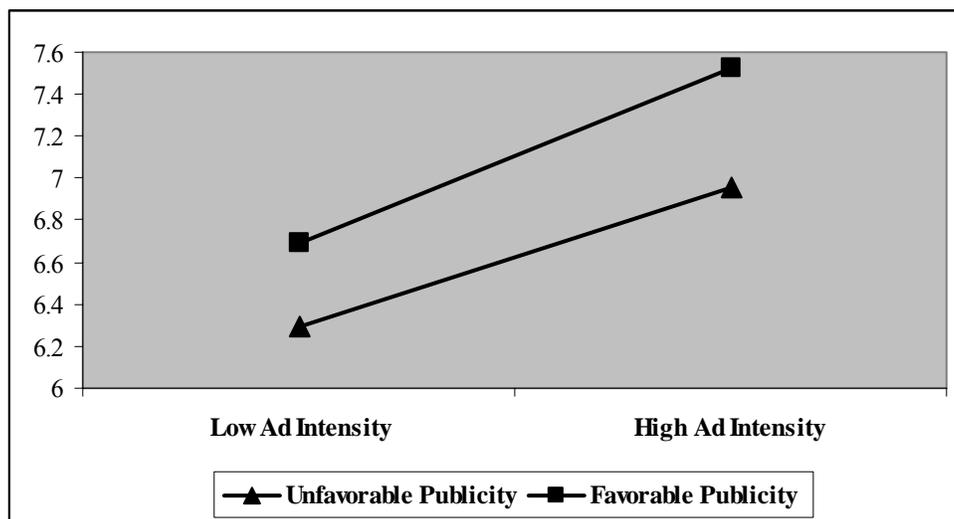
Interaction of Advertising and Publicity on Sales Revenues

With respect to sales revenues, the interaction effect of advertising and publicity illustrates interesting results. In both low and high advertising expenditures, unfavorable publicity, rather than favorable publicity, was more effective for generating higher sales revenues. However, the differences in sales revenues made by the type of publicity in both low and high advertising expenditures were not big (in low advertising expenditures, sales mean for unfavorable publicity = 6230 vs. sales mean for favorable publicity = 5635; in high advertising expenditures, sales mean for unfavorable publicity = 19923 vs. sales mean for favorable publicity = 19318). This result appears in Figure 12A.

Rather, as shown in Figure 12 B, advertising appears to contribute more to making a difference in sales revenues. It shows that the differences in sales revenues made by advertising in both unfavorable and favorable publicity were much bigger than those made by the type of publicity (Figure 12A vs. Figure 12B). This result does not imply that advertising is a more effective marketing communication tool than publicity in increasing sales revenue. However, it suggests that if the publicity condition is the same (unfavorable publicity or favorable publicity), firms that spend more on advertising (high advertising expenditures) generate much higher sales revenues: in unfavorable publicity, sales

mean for low advertising expenditure = 6230 vs. sales mean for high advertising expenditure = 19,923; in favorable publicity, sales mean for low advertising expenditure = 5635 vs. sales mean for high advertising expenditure = 19,318). Figures 12A and B illustrate the different effects.

Figure 12

A: Interaction Effect of Advertising Expenditures and Publicity on Sales
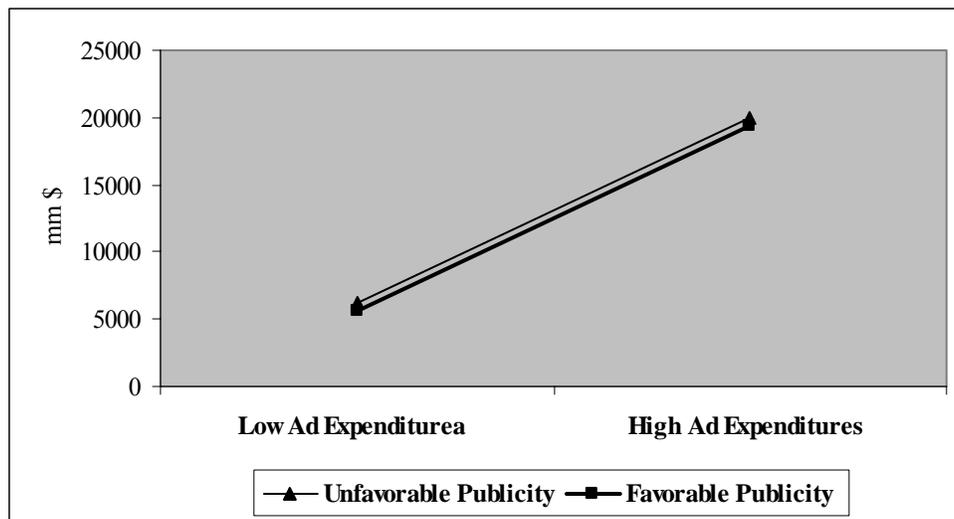
B: Interaction Effect of Advertising Expenditures and Publicity on Sales
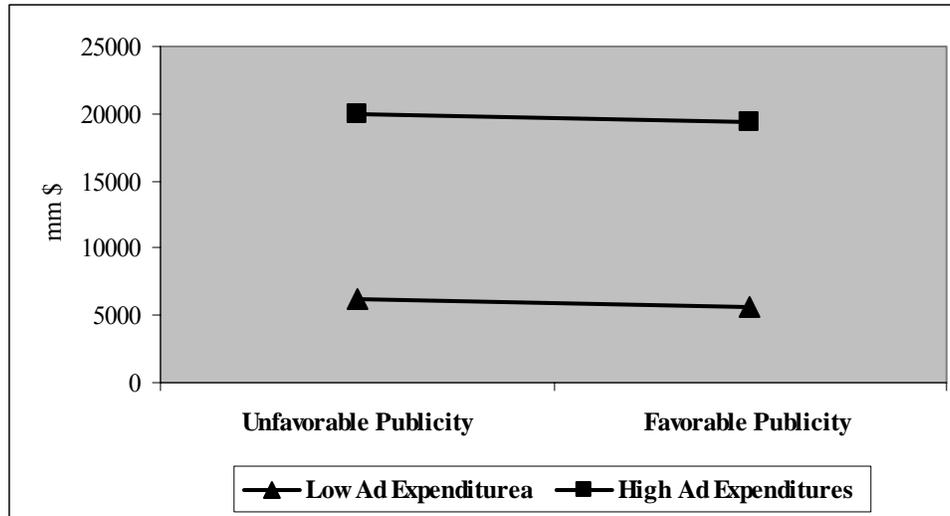
Advertising change data also show interesting results (Figure 13). When firms spent less on advertising compared with the previous year (negative changes in advertising expenditures), unfavorable publicity generated much higher sales revenues, whereas in the positive changes in advertising expenditures, favorable publicity yielded much higher sales revenues. Figure 13 indicates that even though firms spent more on advertising compared with the previous year, if unfavorable publicity was predominant, sales revenues decreased. The results of this study are consistent with the results found in a prior study. In the late 1990s, AT&T conducted a series of studies to better understand how advertising and news coverage generated by public relations were combined to impact consumer

attitudes and perceptions. AT&T's study found that when news coverage was more positive than negative, incremental advertising had a positive impact on attitudes, and that in instances of negative news coverage, incremental advertising did not have a positive impact.

Figure 13

Interaction Effect of Changes in Advertising Expenditures and Publicity on Sales
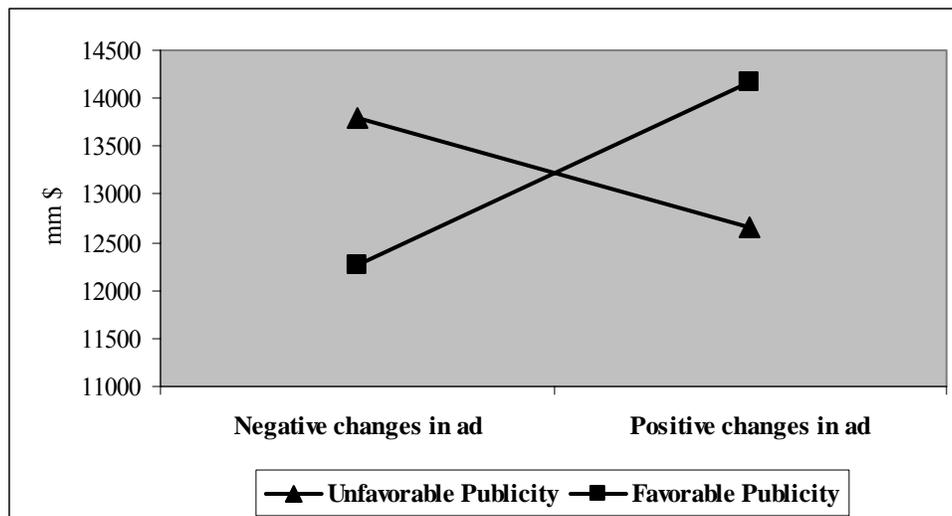
Finally, in order to rule out the alternative explanation that the positive relationship between advertising and sales might be attributable to firms' size, advertising intensity was also examined. Along this line, favorable publicity was better than unfavorable publicity in generating much higher sales revenues in both low and high advertising intensity. As shown in Figure 14, however, even though

firms spent more on advertising (high advertising intensity), when unfavorable

publicity was dominant, sales revenues were far inferior to those of firms with

low ad intensity and unfavorable publicity. The results imply that when negative

news coverage was dominant, incremental advertising did not have a positive

effect and may even have had a negative effect. This result is worth comparing

with Figure 12A, suggesting that regardless of the type of publicity, incremental

advertising had a positive effect on sales revenues. Figure 14 contains the

interaction effect of advertising intensity and publicity on sales revenues.

Figure 14
Interaction Effect of Advertising Intensity and Publicity on Sales
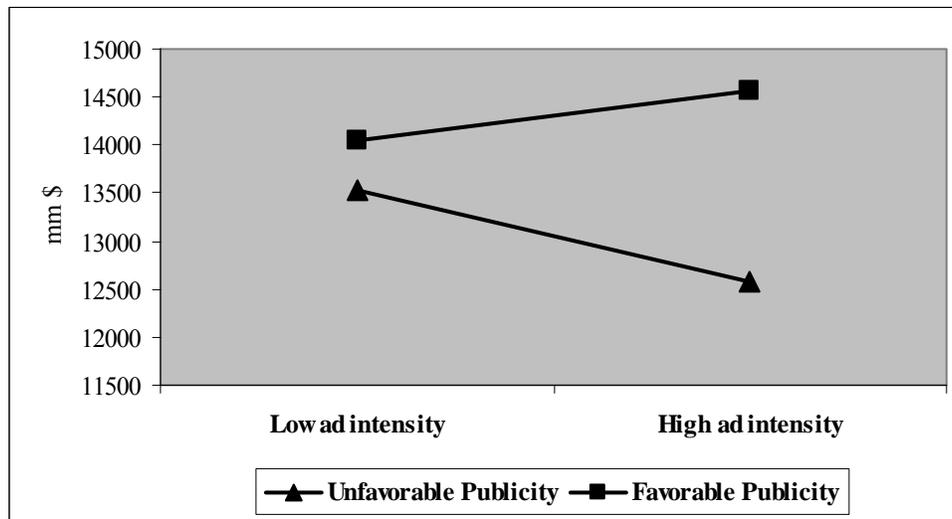
Hypotheses Test

Data Analysis Procedure

The main purpose of this study is to provide a comprehensive analysis about the relationships between marketing communication and corporate reputation and between marketing communication and sales revenue, through a time-series analysis of longitudinal data of a 21-year period. The comprehensive analysis is addressed by selecting a significant subset of predictor variables. In order to select a subset of predictor variables, regression analysis was employed.

When time-series data are used in regression analysis, often the error term is not independent through time. The errors are serially correlated or autocorrelated. If the error term is autocorrelated, the efficiency of ordinary least-squares (OLS) parameter estimates is adversely affected, and standard error estimates are biased. Therefore, it is not desirable to use ordinary regression analysis for time-series data since the assumptions on which the classical linear regression model is based will usually be violated.

Violation of the independent errors assumption has three important consequences for ordinary regression. First, statistical tests of the significance of the parameters and the confidence limits for the predicted values are not correct. Second, the estimates of the regression coefficients are not as efficient as they

97

would be if the autocorrelation were taken into account. Third, since the ordinary

regression residuals are not independent, they contain information that can be

used to improve the prediction of future values (Ostrom, 1990).

The SAS AUTOREG procedure solves this problem by augmenting the

regression model with an autoregressive model for the random error, thereby

accounting for the autocorrelation of the errors. The AUTOREG procedure is a

generalized least-squares regression approach that uses estimates of

autocorrelation in a model's residuals in estimating structural parameters and

significant levels.

That is, the AUTOREG adjusts for autocorrelation in the annual data of

this study. This adjustment produces better estimates of regression parameters.

The AUTOREG assumes that the error term is autoregressive with a given ρ for

the estimation of the parameters. The parameter estimates are similar to least

squares estimates but the standard errors may be different, affecting significance.

By simultaneously estimating the regression coefficients B and autoregressive

error model parameters ρ, the AUTOREG procedure corrects the regression

estimates for autocorrelations. The autoregressive error model for the hypothesis

test is:

$$Y_t = B_1 + B_2 X_t + B_3 X_t + \ldots\ldots B_k X_{kt} + e_t$$

$$e_t = \rho e_{t-1} + v_t \hspace{4cm} \text{[Equation 9]}$$

98

where $Y_t =$ dependent variable ; $X_{kt} =$ independent variables.

This study used the maximum-likelihood approach in the SAS AUTOREG procedure (SAS Institute, 1999) to analyze annual data, taking into account any significant autocorrelation at lags of one and two years.

Data Analysis Approach

A consistent model-building approach was used to decide which variables were significant in predicting corporate reputation and sales revenue, respectively. A stepwise regression analysis with backwards elimination of non-significant predictors was utilized to select a subset of predictor variables. First, for each company, advertising, publicity, corporate reputation, sales, and other predictor variables were included in the regression equation. Then, the least significant predictor variable was dropped and another regression analysis was performed. The analysis was continued until the final model was found, with all variables significant at the 5% level of significance ($p < .05$). Finally, the R squares of sequential models were compared to ensure that there was not a significant drop in explained variance.

Specifically, two sets of regression analyses were performed: (1) a regression model for the marketing communication-corporate reputation

99

relationship and (2) a regression model for the marketing communication-sales revenue relationship. The first regression was run to examine the relationship between marketing communications (advertising and publicity) and corporate reputation. For each company, advertising, publicity, dividend yield, diversification, market-to-book ratio (M/B ratio), profitability, and firm size were regressed on corporate reputation as the dependent variable. Then, the least significant variable was dropped ($p < .05$) and another regression analysis was performed. This procedure continued until all independent variables were significant in the regression model. Finally, the R squares of the sequential models were compared to see if there was a significant drop in explained variance.

The regression model used to examine the relationship between advertising, publicity, and corporate reputation is as follows:

$$CR_{it} = \alpha + B_1\,AD_{it\text{-}1} + B_2\,PB_{it} + B_3\,DY_t + B_4\,MB_{it} + B_5\,DV_{it\text{-}1} + B_6\,PF_{it\text{-}1} +$$
$$B_7\,FS_{it} + e_{it} \qquad\qquad \text{[Equation 10]}$$

where

CR_{it} = corporate reputation of firm i in year t ;

$AD_{it\text{-}1}$ = advertising expenditures of firm i in year t-1;

PB_{it} = publicity of firm i in year t;

DY_{it} = dividend yield of firm i in year t;

MB_{it} = market-to-book ratio of firm i in year t;

DV_{it-1} = diversification of firm i in year t-1;

PF_{it-1} = profit of firm i in year t-1;

FS_{it} = firm size of firm i in year t; and

$e_t = \rho e_{t-1} + v_{it}$ ($|\rho| < 1$, e_t is the error term, and v_t is a random variable with

a zero mean, constant variance, and zero correlation with

the other errors).

As noted previously in the methodology section, this study considered the impact of the firm's advertising, profitability, and diversification in Period t-1 on corporate reputation in Period t, in accordance with the time lags suggested by previous reputation studies (Fombrun and Shanley, 1990; McGuire, Sundgren, and Schneeweis, 1988). Also, these lagged measures of profitability and diversification on corporate reputation preclude a potential reverse-causality explanation of the effects. It indicates that prior financial performance is a variable influencing reputation rather than the reverse.

Second, the same regression analysis was utilized to examine the relationship between marketing communications (advertising and publicity) and sales revenue. To explore this relationship, new relevant factors – corporate

reputation, research and development (R&D) expenditures, and focus of the firm -

were included in the regression model. Firm size was also controlled for this

model. That is, advertising, publicity, and other predictor variables were used in

the regression equation with corporate sales revenue as the dependent variable.

Again, the least significant predictor was dropped and another regression analysis

was performed. This analysis continued until a final model was found with all

variables significant ($p < .05$). Also, the R squares of sequential models were

compared to confirm that there was no significant drop in explained variance.

In order to examine the relationship between marketing communications

and sales revenues, the following model is used.

$$\text{SR}_{it} = \alpha + B_1\,\text{AD}_{it\text{-}1} + B_2\,PB_{it} + B_3\,\text{CR}_{it\text{-}1} + B_4\,\text{RD}_{it\text{-}1} + B_5\,\text{FF}_{it} + B_6\,FS_{it} +$$

$$e_{it} \qquad\qquad\qquad [\text{Equation 11}]$$

where

SR_{it} = sales revenues of firm i in year t ;

$\text{AD}_{it\text{-}1}$ = advertising expenditures of firm i in year t-1;

PB_{it} = publicity of firm i in year t;

$\text{CR}_{it\text{-}1}$ = corporate reputation of firm I in year t-1;

$RD_{it\text{-}1}$ = R&D expenditures of firm i in year t-1;

FF_{it} = focus of the firm of firm i in year t;

FS_{it} = firm size of firm i in year t; and

$e_t = \rho e_{t-1} + v_{it}$ ($|\rho| < 1$, e_t is the error term, and v_t is a random variable with

a zero mean, constant variance, and zero correlation with

the other errors).

Just as in the first regression model, this study considered the impact of the firm's advertising, corporate reputation, and R&D in Period t-1 on sales revenue in Period t to consider carryover effects and rule out the explanation of a potential reverse causality.

Data Analysis Results

Prior to hypotheses testing, this study explored visual representations of the marketing communication variables, corporate reputation, and sales relationships for each company: advertising – publicity – corporate reputation relationship and advertising – publicity – sales relationship. Detailed information of visual representations is presented in Appendix B.

Also, data transformations were taken for achieving normality and linearity of data (e.g., logarithm transformation, square root transformation). Details on data transformations for each variable are listed in Appendix C.

Testing for Autocorrelations

Due to the autocorrelative nature of time-series data, a Durbin-Watson test (H_0: there is no positive or negative autocorrelation.) was performed to test for the presence of autocorrelations in the data. Table 3 shows the results of the Durbin-Watson test for each company. In most cases, test results of Durbin-Watson test were highly significant with $p < .05$ for the null hypothesis of no autocorrelation. This suggests that the general regression model would not be appropriate for the testing of these data and autocorrelation correction is needed.

Testing for Heteroscedasticity

Another important assumption of the ordinary regression model is homoscedasticity, which means the errors have the same variance throughout the sample. If the error variance is not consistent, the data are said to show heteroscedasticity. Since ordinary least-square (OLS) regression assumes constant error variance, heteroscedasticity causes the OLS estimates to be inefficient. Also, heteroscedasticity can make the OLS forecast error variance

inaccurate since the predicted forecast variance is based on the average variance instead of the variability at the end of the series. Thus, models that take into account the changing variance can make more efficient use of the data. Heteroscedasticity was evaluated by examining OLS residuals using the AUTOREG. The statistics shown by AUTOREG indicated that heteroscedasticity was not a problem here.

Table 3

Durbin-Watson Test for Autocorrelations

	Company	Durbin-Watson
	American standard	1.3378*
Dependent Variable =	Apple Computer	1.3859*
Corporate Reputation	AT&T	2.6504
	Coca Cola	2.8825
	Delta Air Lines	1.7425*
	Fortune Brands	2.0850*
	Gillette	1.3334*
	Johnson & Johnson	0.9892*
	Kimberly Clark	1.2156*
	Pfizer	1.7377*
	PPG Industries	1.8510*
	Proctor & Gamble	1.8001*
	Sara Lee	1.8727*
	Stanley Works	1.4335*
	Texas Instruments	2.8531
	United State Tobacco	1.4899*
	VF Corp.	2.1599
	Vulcan Materials	1.4899*

	American standard	1.8393*
Dependent Variable =	Apple Computer	0.7386*
Sales Revenues	AT&T	1.1894*
	Coca Cola	0.6007*
	Delta Air Lines	1.5661*
	Fortune Brands	1.5211*
	Gillette	1.8345*
	Johnson & Johnson	2.0806
	Kimberly Clark	1.4905*
	Pfizer	1.8820*
	PPG Industries	2.1260
	Proctor & Gamble	1.8006*
	Sara Lee	0.6560*
	Stanley Works	1.6992*
	Texas Instruments	2.2353
	United State Tobacco	0.6564*
	VF Corp.	1.1930*
	Vulcan Materials	1.8966

* Significant at $p < .05$

Advertising, Publicity, and Corporate Reputation

For corporate reputation, the full regression models of each company with all the variables are presented in Table 4. Table 5 contains the final corporate reputation models for each company. Since this study focuses on the final model in which the non-significant variables were dropped, the full models with all predictors are not discussed. The interpretation was made for the final model. Also, since the intercept parameters have no substantial relevance to understanding the relationship between market communications and corporate reputation, they are not discussed.

106

Advertising expenditures showed a significant relationship with corporate reputation for 12 out of 18 companies and publicity exhibited a significant association with corporate reputation for 9 out of 18 companies. Both advertising and publicity simultaneously had a significant relationship to corporate reputation in 5 companies. In 2 companies, none of the predictors had a significant relationship to corporate reputation. With respect to the other variables, dividend policy, diversification, market-to-book ratio, profitability, and firm size, also had statistically significant relationships with corporate reputation for certain companies.

The individual final models for each firm indicated that in seven models, the predictors explained over 90% of the variance in corporate reputation, and over 80% in four companies. In five companies, the total variance in corporate reputation explained by predictors was less than 80% (American Standard,74%; Delta Airlines, 74%; Johnson and Johnson, 66%; Proctor & Gamble, 69%; and United States Tobacco, 53%).

Specific results of each relationship are as follows:

Advertising-Reputation Relationship

Five companies (Apple Computer, Fortune Brands, Proctor & Gamble, Sara Lee, and Texas Instruments) showed a positive relationship between

advertising expenditures and corporate reputation. Advertising expenditures were negatively related to corporate reputation in seven companies (AT&T, Coca Cola, Delta Air Lines, Gillette, Kimberly & Clark, Pfizer, and VF Corp.).

Publicity-Reputation Relationship

In six companies (American Standard, Kimberly Clark, Pfizer, Texas Instruments, United States Tobacco, and VF Corp.), publicity was positively associated with corporate reputation. Publicity for Gillette, Johnson & Johnson, and Stanley Works exhibited a negative relationship to corporate reputation.

Advertising-Publicity-Corporate Reputation Relationship

In Gillette, Kimberly Clark, Pfizer, Texas Instruments, and VF Corp., both advertising expenditures and publicity simultaneously showed significant relationships to corporate reputation. However, the direction of the relationship varied from company to company. Both advertising expenditures and publicity for Gillette were negatively related to corporate reputation. In Texas Instruments, in contrast, both advertising expenditures and publicity were positively associated with corporate reputation. In Kimberly Clark, Pfizer, and VF Corp., advertising expenditures exhibited a negative relationship, whereas publicity exhibited a positive relationship to corporate reputation.

Other factors, such as dividend policy, market-to-book ratio, diversification, profit, and firm size, were significantly related to corporate reputation but the direction of the relationship varied. For example, a firm's current dividend yield to its investors had a significant relationship to assessments of corporate reputation. The current dividend yield showed a positive relationship with corporate reputation for Delta Air Lines, Fortune Brands, and Kimberly Clark. Dividend yield was negative for AT&T, Proctor & Gamble, Pfizer, Sara Lee, Texas Instruments, and VF Corp, suggesting that low dividend yields induce high assessments of corporate reputation.

A firm's current market value also affected assessments of a firm's reputation. Market-to-book ratio exhibited a significant relationship to corporate reputation in 12 companies. For Apple Computer, AT&T, Coca Cola, Delta Air Lines, Gillette, and Kimberly Clark, the current market-to-book ratio was a positive predictor. However, it was negatively associated for Proctor & Gamble, Sara Lee, Stanley Works, Texas Instruments, and VF Corp.

With respect to diversification, as discussed previously in the methodology section, firms with low diversification tended to be more focused and firms with high diversification were involved in a broad range of business.

Diversification is a measure of business relatedness, suggesting that firms with high scores on the index are more likely to encompass less related business under their corporate umbrellas than firms with low scores on the index. In this study, as expected, diversification (business relatedness) was negatively related to corporate reputation for five companies (Apple Computer, Fortune Brands, Kimberly Clark, and VF Corp), and it was a positive predictor for only one company (American Standard).

The previous year's profit also presented a significant relationship to assessment of corporate reputation. For Apple Computer, Coca Cola, and Johnson & Johnson, profitability exhibited a positive relationship with corporate reputation, and the relationships were negative in Kimberly Clark, Sara Lee, Stanley Works, and United States Tobacco.

In American Standard, AT&T, Delta Air Lines, Pfizer, Stanley Works, and Texas Instruments, firm size had a positive association in predicting corporate reputation, and it was negative in Apple Computer, Fortune Brands, Johnson & Johnson, Proctor Gamble, Sara Lee, and VF Corp.

110

Table 4

Full Corporate Reputation Models

Independent Variable	Corporate Reputation				
	B	*t*	*p*	Total R^2	DFE
American Standard				0.7769	11
Intercept	3.1129	4.65	0.0007		
Advertising	-0.004331	-0.66	0.5209		
Publicity	0.4550	3.81	0.0029		
Dividend Policy	0.0297	0.63	0.5398		
Market-to-Book Ratio	0.000969	0.33	0.7508		
Diversification	1.8576	3.06	0.0108		
Profit	-1.3662	-1.71	0.1153		
Firm Size	0.0277	2.72	0.0029		
Apple Computer				0.9616	10
Intercept	6.3879	4.99	0.0005		
Advertising	0.004145	3.42	0.0065		
Publicity	0.2534	0.53	0.6073		
Dividend Policy	-0.2621	-1.64	0.1329		
Market-to-Book Ratio	0.0895	1.72	0.1170		
Diversification	-2.0257	-2.81	0.0186		
Profit	3.0160	6.36	<.0001		
Firm Size	-0.1569	-3.03	0.0126		
AT&T				0.9409	10
Intercept	5.0237	3.21	0.0094		
Advertising	-0.000867	-4.51	0.0011		
Publicity	0.4192	0.63	0.5449		
Dividend Policy	-0.3664	-2.80	0.0189		
Market-to-Book Ratio	0.3251	3.45	0.0062		
Diversification	-0.0629	-0.13	0.8981		
Profit	0.9789	1.60	0.1398		
Firm Size	0.008826	8.58	<.0001		
Coca Cola				0.9228	11
Intercept	8.0230	5.66	0.0001		
Advertising	-0.001297	-2.44	0.0330		
Publicity	-0.3567	-0.61	0.5567		
Dividend Policy	0.003334	0.02	0.9844		
Market-to-Book Ratio	0.0640	2.33	0.0402		
Diversification	-0.0859	-0.06	0.9561		
Profit	5.2038	2.86	0.0154		
Firm Size	0.0182	1.64	0.1296		

				0.7571	12
Delta Air					
Intercept	3.3061	1.45	0.1739		
Advertising	-0.005722	-1.82	0.0938		
Publicity	0.2114	0.24	0.8178		
Dividend Policy	0.8282	8.23	<.0001		
Market-to-Book Ratio	0.4148	4.41	0.0008		
Diversification	0	-	-		
Profit	-0.6501	-1.07	0.3072		
Firm Size	0.0306	2.62	0.0222		
Fortune Brands				0.8884	10
Intercept	13.2058	7.70	<.0001		
Advertising	0.002027	2.21	0.0514		
Publicity	0.3609	1.57	0.1467		
Dividend Policy	0.1789	1.58	0.1458		
Market-to-Book Ratio	-0.3247	-1.52	0.1603		
Diversification	-8.3119	-4.88	0.0006		
Profit	3.2541	2.55	0.0287		
Firm Size	-0.0403	-8.72	<.0001		
Gillette				0.9195	10
Intercept	6.7828	3.46	0.0061		
Advertising	-0.000787	-1.92	0.0833		
Publicity	-0.2451	-1.80	0.1027		
Dividend Policy	0.0513	0.33	0.7486		
Market-to-Book Ratio	0.004996	1.96	0.0780		
Diversification	1.5559	0.62	0.5505		
Profit	0.3435	0.54	0.5980		
Firm Size	0.0167	0.68	0.5141		
Johnson & Johnson				0.7138	11
Intercept	10.5493	1.23	0.2432		
Advertising	0.0000742	0.12	0.9039		
Publicity	-0.5037	-2.05	0.0647		
Dividend Policy	0.8117	1.41	0.1851		
Market-to-Book Ratio	0.2402	1.41	0.1861		
Diversification	-4.2645	-0.39	0.7058		
Profit	4.8151	2.35	0.0384		
Firm Size	-0.0251	0.12	0.4104		
Kimberly Clark				0.9874	8
Intercept	7.8071	9.48	<.0001		
Advertising	-0.000764	-0.85	0.4188		
Publicity	0.1886	1.65	0.1383		
Dividend Policy	0.1051	1.14	0.2855		
Market-to-Book Ratio	0.1910	7.88	<.0001		
Diversification	-2.9134	-5.15	0.0009		
Profit	2.8617	-4.05	0.0037		
Firm Size	-0.006960	-0.80	0.4472		

				0.9874	8
Pfizer					
Intercept	7.8071	9.48	<.0001		
Advertising	-0.000764	-0.85	0.4188		
Publicity	0.1886	1.65	0.1383		
Dividend Policy	0.1051	1.14	0.2855		
Market-to-Book Ratio	0.1910	7.88	<.0001		
Diversification	-2.9134	-5.15	0.0009		
Profit	-2.8617	-4.05	0.0037		
Firm Size	-0.0006960	-0.80	0.4472		
PPG Industries				0.5260	7
Intercept	9.1951	1.50	-0.1763		
Advertising	-0.001503	-0.18	0.8658		
Publicity	-.0.0358	-0.31	0.7681		
Dividend Policy	-0.1176	-0.30	0.7717		
Market-to-Book Ratio	-0.2036	-0.86	0.4253		
Diversification	3.0051	0.68	0.5183		
Profit	-1.1268	-0.85	0.4241		
Firm Size	-0.0943	-1.22	0.2610		
Proctor & Gamble				0.7291	11
Intercept	13.2843	7.31	<.0001		
Advertising	0.000266	5.19	0.0003		
Publicity	-0.1071	-0.50	0.6290		
Dividend Policy	-0.6182	-4.15	0.0016		
Market-to-Book Ratio	-0.0352	-1.03	0.3272		
Diversification	-1.4914	-1.30	0.2206		
Profit	-1.0379	-0.99	0.3455		
Firm Size	-0.0305	-3.50	0.0050		
Sara Lee				0.9582	11
Intercept	9.4553	10.26	<.0001		
Advertising	0.000868	5.19	0.0003		
Publicity	0.1015	0.82	0.4299		
Dividend Policy	-0.3763	-2.66	0.0221		
Market-to-Book Ratio	-0.1045	-7.34	<.0001		
Diversification	0.2435	0.39	0.7074		
Profit	-0.9737	-2.69	0.0211		
Firm Size	-0.0190	-6.96	0.0003		

Stanley Works				0.8978	11
Intercept	8.7267	2.42	0.0339		
Advertising	-0.0112	-0.42	0.6817		
Publicity	-0.6237	-2.82	0.0166		
Dividend Policy	-0.6988	-1.44	0.1787		
Market-to-Book Ratio	-1.0712	-5.20	0.0003		
Diversification	-1.4022	-0.85	0.4138		
Profit	-9.9415	-3.14	0.0094		
Firm Size	0.3124	2.67	0.0220		
Texas Instrument				0.9980	4
Intercept	6.0567	2.53	0.0644		
Advertising	0.003765	2.05	0.1099		
Publicity	0.5950	1.05	0.3545		
Dividend Policy	-3.1914	-1.60	0.1839		
Market-to-Book Ratio	-0.2126	-1.44	0.2229		
Diversification	0.4619	0.40	0.7086		
Profit	0.6162	-0.54	0.6171		
Firm Size	0.0526	0.97	0.3861		
United States Tobacco				0.6753	8
Intercept	8.5148	1.38	0.2035		
Advertising	0.0434	0.09	0.9295		
Publicity	-0.0527	-0.28	0.7901		
Dividend Policy	-0.3554	-0.44	0.6745		
Market-to-Book Ratio	-0.8308	-1.12	0.2946		
Diversification	-0.3458	-0.09	0.9294		
Profit	5.4635	1.69	0.1303		
Firm Size	0.0635	-0.24	0.8141		
VF Corp.				0.8784	11
Intercept	11.5012	13.79	<.0001		
Advertising	-0.002222	-3.70	0.0035		
Publicity	0.2877	1.39	0.1923		
Dividend Policy	-0.7269	-7.22	<.0001		
Market-to-Book Ratio	-0.6905	-4.81	0.0005		
Diversification	-0.6273	-5.40	0.0002		
Profit	0.9083	0.91	0.3847		
Firm Size	-0.0236	-4.64	0.0035		
Vulcan Materials				0.6753	8
Intercept	8.5148	1.38	0.2035		
Advertising	0.0434	0.09	0.9295		
Publicity	-0.0527	-0.28	0.7901		
Dividend Policy	-0.3554	-0.44	0.6745		
Market-to-Book Ratio	-0.8308	-1.12	0.2946		
Diversification	-0.3458	-0.09	0.9294		
Profit	5.4635	1.69	0.1303		
Firm Size	0.0434	0.24	0.8141		

Table 5

Final Corporate Reputation Models

Independent Variable	Corporate Reputation				
	B	*t*	*p*	Total R^2	DFE
American Standards				0.7382	14
Intercept	2.8298	5.62	<.0001		
Publicity	0.3934	5.52	<.0001		
Diversification	2.3427	5.11	0.0002		
Profit	-1.7490	-3.65	0.0026		
Firm Size	0.0224	3.85	0.0018		
Apple Computer				0.9514	12
Intercept	6.9322	12.37	<.0001		
Advertising	0.005531	6.95	<.0001		
Market-to-Book Ratio	0.1287	2.49	0.0286		
Diversification	-2.0789	-5.10	0.0003		
Profit	3.2216	9.94	<.0001		
Firm Size	-0.2014	-4.92	0.0004		
AT&T				0.9293	13
Intercept	5.5795	19.20	<.0001		
Advertising	-0.000796	-6.71	<.0001		
Dividend Policy	-0.3618	-4.69	0.0004		
Market-to-Book Ratio	0.3618	7.83	<.0001		
Firm Size	0.009407	13.42	<.0001		
Coca Cola				0.9013	15
Intercept	7.6139	45.63	<.0001		
Advertising	-0.000905	-9.86	<.0001		
Market-to-Book Ratio	0.0629	6.29	<.0001		
Profit	4.0019	5.26	<.0001		
Delta Air				0.7381	14
Intercept	3.6379	6.37	<.0001		
Advertising	-0.004902	-2.84	0.0117		
Dividend Policy	0.8439	8.90	<.0001		
Market-to-Book Ratio	0.3984	6.53	<.0001		
Firm Size	0.0301	2.84	0.0131		
Fortune Brands				0.8031	13
Intercept	13.4856	13.31	<.0001		
Advertising	0.003025	4.12	0.0012		
Dividend Policy	0.2675	2.72	0.0176		
Diversification	-9.5828	-6.14	<.0001		
Firm Size	-0.0366	-7.06	<.0001		

Gillette				0.9118	14
Intercept	8.2698	20.51	<.0001		
Advertising	-0.000535	-3.16	0.0070		
Publicity	-0.2067	-1.85	0.0482		
Market-to-Book Ratio	0.005158	2.25	0.0409		
Johnson & Johnson				0.6610	15
Intercept	9.7159	11.48	<.0001		
Publicity	-0.4984	-2.25	0.0397		
Profit	3.7377	2.78	0.0141		
Firm Size	-0.0148	-2.25	0.0491		
Kimberly Clark				0.9864	9
Intercept	7.1242	19.08	<.0001		
Advertising	-0.001524	-3.19	0.0110		
Publicity	0.2438	2.70	0.0243		
Dividend Policy	0.1783	2.67	0.0257		
Market-to-Book Ratio	0.2097	9.39	<.0001		
Diversification	-2.5317	-5.08	0.0007		
Profit	-3.2697	-5.23	0.0005		
Pfizer				0.8548	13
Intercept	6.2269	8.79	<.0001		
Advertising	-0.000801	-4.46	0.0006		
Publicity	0.8482	3.11	0.0083		
Dividend Policy	-0.6209	-8.48	<.0001		
Firm Size	0.0257	3.56	0.0035		
PPG Industries					
None					
Proctor & Gamble				0.6908	14
Intercept	11.2025	14.68	<.0001		
Advertising	0.000237	5.17	0.0001		
Dividend Policy	-0.5029	-4.54	0.0005		
Market-to-Book Ratio	-0.0728	-3.45	0.0039		
Firm Size	-0.0228	-3.59	0.0030		
Sara Lee				0.9554	
Intercept	10.0646	31.11	<.0001		13
Advertising	0.000810	5.86	<.0001		
Dividend Policy	-0.4535	-4.53	0.0006		
Market-to-Book Ratio	-0.1075	-9.34	<.0001		
Profit	-0.9390	-2.76	0.0161		
Firm Size	-0.0183	-7.45	<.0001		
Stanley Works				0.8775	14
Intercept	5.2458	4.49	0.0005		
Publicity	-0.5701	-3.05	0.0086		
Market-to-Book Ratio	-0.8384	-10.23	<.0001		
Profit	-10.9056	-4.16	0.0010		
Firm Size	0.2833	-3.05	<.0001		

Texas Instrument				0.9975	6
Intercept	7.0838	65.59	<.0001		
Advertising	0.002558	5.86	0.0001		
Publicity	0.3533	11.30	<.0001		
Dividend Policy	-2.3448	-15.41	<.0001		
Market-to-Book Ratio	-0.1481	-9.71	<.0001		
Firm Size	0.0299	6.82	0.0005		
United States Tobacco				0.5333	16
Intercept	4.9211	9.11	<.0001		
Publicity	0.8909	3.52	0.0028		
Profit	-1.0798	-1.75	0.0496		
VF Corp.				0.8722	12
Intercept	11.3546	14.25	<.0001		
Advertising	-0.002158	-3.83	0.0024		
Publicity	0.4540	2.97	0.0118		
Dividend Policy	-0.7334	-7.88	<.0001		
Market-to-Book Ratio	-0.6954	-5.17	0.0002		
Diversification	-0.6931	-8.04	<.0001		
Firm Size	-0.0258	-6.22	<.0001		
Vulcan Materials					
None					

Advertising, Publicity, and Sales Revenue

For sales revenue, the full models with all variables are presented in Table 6 and the final sales revenue models for each company are shown in Table 7. Advertising expenditures were significantly associated with sales revenue for 14 out of 18 companies and publicity exhibited a significant relationship with sales revenue for five out of 18 companies. Both advertising and publicity had a significant relationship with sales revenue for four companies. In contrast to the marketing communication and corporate reputation relationship, there was no

company for which none of the predictors had a significant relationship with sales revenue. Just as in the models examining the relationships with corporate reputation, control variables, such as reputation, R&D, focus of the firm, and firm size, showed significant relevance to sales revenue.

As shown in Table 7, the individual final models indicated that the predictors explained over 90% of the variance in sales revenue in all but one model (Delta, 85%). The following are specific results of each relationship in the final sales model.

Advertising-Sales Relationship

In contrast to corporate reputation, the relationships between predictors and sales revenue were straightforward. Among 15 companies in which advertising expenditures had a significant relationship with sales revenues – American Standard, AT&T, Coca Cola, Fortune Brands, Gillette, Johnson & Johnson, Kimberly Clark, Pfizer, PPG Industries, Proctor & Gamble, Sara Lee, Stanley Works, Texas Instruments, United States Tobacco, and VF Corp. – all but two companies (PPG Industries and Stanley Works) exhibited a significant positive relationship between advertising expenditures and sales revenues. PPG Industries and Stanley Works presented a negative association with sales revenue.

Publicity-Sales Relationship

Publicity had a negative relationship with sales revenue for Apple Computer and Coca Cola. Publicity for Johnson & Johnson, Texas Instruments, and United States Tobacco showed a positive relationship to sales revenue.

Advertising-Publicity-Sales Relationship

In addition, in these three companies – Johnson & Johnson, Texas Instruments, and United States Tobacco – advertising expenditures, as well as publicity, exhibited a significant relationship to sales revenues, and the relationships were also all positive. Both advertising and publicity for Coca Cola presented a significant association with sales revenue but their directions were the opposite: positive advertising effect and negative publicity effect on sales revenue.

Other Variables

The relationship between marketing communications and sales revenue might be attributed to other factors besides advertising and publicity. For this reason, other factors such as corporate reputation, focus of the firm, R&D, and firm size, were included in marketing communication-sales models to explain the variance in sales revenue.

Corporate reputation presented a significant association with sales revenue in eight companies – Coca Cola, Delta Air Lines, Gillette, Pfizer, PPG Industries, Proctor & Gamble, Stanley Works, and Vulcan Materials. The direction of the relationship varied. Coca Cola, Proctor & Gamble, and Vulcan Materials exhibited a positive relationship, but in the other five companies, reputation had a negative relationship with sales revenue. Unlike prior studies that demonstrated the positive effect of corporate reputation on market performance, a positive relationship was found only in a small number of companies.

Focus of the firm exhibited a significant relationship in seven companies – American Standard, AT&T, Gillette, Johnson & Johnson, Kimberly Clark, Texas Instruments, and VF Corp. – and the relationship was positive in all but two companies (Gillette and Texas Instruments). A positive relationship indicated that firms with higher focus (or firms with low diversification) exhibited much higher sales revenues.

R&D was also significant for predicting sales in eleven companies - American Standard, AT&T, Fortune Brands, Gillette, Johnson & Johnson, Pfizer, PPG Industries, Proctor & Gamble, Stanley Works, Texas Instruments, and Vulcan Materials. Only one company – Fortune Brands – presented a negative relationship between R&D and sales revenue. The relationship was positive in the

rest of them, suggesting that the prior year's higher R&D expenditures generate higher sales revenues.

Firm size revealed a significant relationship with sales in nine companies − Apple Company, AT&T, Coca Cola, Delta Air Lines, Gillette, Kimberly Clark, PPG Industries, Stanley Works, and VF Corp. The relationship was all positive in all but one company, PPG Industries.

Table 6

Full Sales Revenue Models

Independent Variable	Sales				
	B	t	p	Total R^2	DFE
American Standards				0.9679	12
Intercept	-1315	-0.18	0.8601		
Advertising	57.8220	4.47	0.0008		
Publicity	608.8053	1.74	0.1071		
Reputation	-383.6027	-0.68	0.5092		
Focus of the firm	1470	3.09	0.0093		
R&D	23.4174	1.44	0.6384		
Firm Size	-1020	-0.48	0.1759		
Apple Computer				0.8945	12
Intercept	-6864	-1.07	0.3049		
Advertising	2.3248	0.65	0.5254		
Publicity	-2890	-1.72	0.1110		
Reputation	436.0784	0.63	0.5417		
Focus of the firm	-	-	-		
R&D	-0.5764	3.26	0.0068		
Firm Size	7015	-0.30	0.7660		

121

AT&T				0.9631	11
Intercept	-16153	-0.75	0.4671		
Advertising	8.7535	6.74	<.0001		
Publicity	-1419	-0.23	0.8239		
Reputation	-1088	-0.82	0.4274		
Focus of the firm	4018	5.71	0.0001		
R&D	5.2540	2.92	0.0139		
Firm Size	9649	3.55	0.0046		
Coca Cola				0.9721	15
Intercept	-18247	-3.57	0.0034		
Advertising	9.7310	9.37	<.0001		
Publicity	-2136	-1.58	0.1373		
Reputation	2200	6.11	<.0001		
Focus of the firm	-284.8108	-0.65	0.5292		
R&D	-	-	-		
Firm Size	2333	2.03	0.0636		
Delta Air				0.9308	14
Intercept	-14512	-1.16	0.2653		
Advertising	12.0333	1.17	0.2634		
Publicity	832.3389	0.83	0.4178		
Reputation	376.7340	1.00	0.3362		
Focus of the firm	-	-	-		
R&D	-	-	-		
Firm Size	5189	1.81	0.0911		
Fortune Brands				0.9304	11
Intercept	-200.2646	-0.07	0.9686		
Advertising	14.8689	8.91	<.0001		
Publicity	-216.9776	-0.87	0.4012		
Reputation	366.7182	1.66	0.1258		
Focus of the firm	87.2298	1.46	0.1718		
R&D	-40.2867	-2.59	0.0252		
Firm Size	-195.6717	-0.31	0.7590		
Gillette				0.9944	11
Intercept	-4090	-1.39	0.1920		
Advertising	2.5920	3.21	0.0083		
Publicity	2.0379	0.01	0.9942		
Reputation	-1174	-3.67	0.0037		
Focus of the firm	-2370	-3.04	0.0112		
R&D	7451	6.61	<.0001		
Firm Size	34.6467	3.12	0.0098		

Johnson & Johnson				0.9987	12
Intercept	-13900	-0.99	0.3401		
Advertising	6.3398	11.93	<.0001		
Publicity	4529	6.61	<.0001		
Reputation	69.0839	0.14	0.8922		
Focus of the firm	1067	1.37	0.1960		
R&D	5.3511	21.47	<.0001		
Firm Size	762.7509	0.21	0.8409		
Kimberly Clark				0.9976	9
Intercept	-25542	-6.02	0.0002		
Advertising	24.8488	4.24	0.0022		
Publicity	-139.7005	-0.76	0.4648		
Reputation	2668	5.42	0.0004		
Focus of the firm	109.1321	0.93	0.3765		
R&D	23.9562	2.71	0.0239		
Firm Size	1343	1.06	0.3185		
Pfizer				0.9895	11
Intercept	-10734	-0.49	0.6317		
Advertising	2.8617	1.18	0.2627		
Publicity	-352.4315	-0.18	0.8621		
Reputation	-7923.4018	-0.58	0.5732		
Focus of the firm	-253.2811	-0.21	0.8342		
R&D	2.9455	7.81	<.0001		
Firm Size	58583	0.68	0.5120		
PPG Industries				0.9484	8
Intercept	68845	5.19	0.0000		
Advertising	-35.1401	-2.87	0.0207		
Publicity	-255.1713	-1.61	0.1450		
Reputation	-1247	-2.70	0.0270		
Focus of the firm	565.5398	2.14	0.0651		
R&D	38.6610	9.47	<.0001		
Firm Size	-17681	-5.36	0.0007		
Proctor & Gamble				0.9953	12
Intercept	-21917	-1.75	0.1060		
Advertising	6.2051	12.61	<.0001		
Publicity	-651.3360	-0.53	0.6069		
Reputation	2328	2.36	0.0358		
Focus of the firm	-1078	-1.86	0.0874		
R&D	7.6303	6.79	<.0001		
Firm Size	3220	1.57	0.1430		

Sara Lee				0.9759	13
Intercept	6883	0.48	0.6364		
Advertising	2.7942	3.46	0.0042		
Publicity	273.7828	1.23	0.2422		
Reputation	209.4536	0.33	0.7490		
Focus of the firm	-1477	-3.30	0.0057		
R&D	-	-	-		
Firm Size	2385	1.02	0.3256		
Stanley Works				0.9826	5
Intercept	1492	0.71	0.5078		
Advertising	3.0959	0.32	0.7650		
Publicity	98.7915	0.86	0.4308		
Reputation	-594.1307	-5.32	0.0031		
Focus of the firm	-111.0501	-1.87	0.1200		
R&D	64.8727	1.50	0.1941		
Firm Size	1246	1.24	0.2705		
Texas Instrument				0.9326	5
Intercept	-10886	-0.43	0.6846		
Advertising	16.7522	1.43	0.2113		
Publicity	2291	2.38	0.0629		
Reputation	1047	0.80	0.4615		
Focus of the firm	-1672	-2.92	0.0329		
R&D	2.2244	0.92	0.4018		
Firm Size	2848	0.61	0.56860		
United States Tobacco				0.9948	12
Intercept	1462	2.41	0.0328		
Advertising	2.0515	2.09	0.0587		
Publicity	31.3927	1.86	0.0869		
Reputation	1.8246	0.15	0.8869		
Focus of the firm	13.7677	1.04	0.3174		
R&D	-	-	-		
Firm Size	-310.0418	-1.20	0.2522		
VF Corp.				0.9927	13
Intercept	-1631	-1.17	0.2621		
Advertising	14.1592	13.66	<.0001		
Publicity	-11.2383	-0.19	0.8490		
Reputation	-113.5343	-1.48	0.1625		
Focus of the firm	50.4862	2.51	0.0259		
R&D	-	-	-		
Firm Size	926.8672	2.65	0.0199		

Vulcan Materials				0.9842	9
Intercept	-7693	-10.82	<.0001		
Advertising	106.0030	0.70	0.5011		
Publicity	29.9206	0.42	0.6848		
Reputation	148.9164	3.28	0.0096		
Focus of the firm	9.4970	0.10	0.9224		
R&D	17.3429	1.85	0.0971		
Firm Size	4109	10.85	<.0001		

Table 7

Final Sales Revenue Models

Independent Variable	Sales Revenue				
	B	t	p	Total R^2	DFE
American Standards				0.9647	15
Intercept	-5109	-4.23	0.0007		
Advertising	63.1090	6.68	<.0001		
Focus of the firm	1212	3.75	0.0019		
R&D	13.4000	2.17	0.0468		
Apple Computer				0.8955	16
Intercept	- 8213	-2.04	0.0587		
Publicity	- 1677	710.4766	0.0313		
Firm Size	7692	1469	<.0001		
AT&T				0.9608	13
Intercept	-25185	-2.62	0.0212		
Advertising	8.7599	8.15	<.0001		
Focus of the firm	3986	6.18	<.0001		
R&D	4.2269	4.10	0.0012		
Firm size	9863	4.66	0.0004		
Coca Cola				0.9713	14
Intercept	-17830	-3.52	0.0034		
Advertising	10.2676	16.19	<.0001		
Publicity	-2568	-2.42	0.0298		
Reputation	2243	6.57	<.0001		
Firm size	1971	1.89	0.0498		
Delta Air				0.8478	16
Intercept	-21320	-2.22	0.0409		
Reputation	-1648	-3.83	0.0015		
Firm Size	10313	4.79	0.0002		

				0.9109	15
Fortune Brands					
Intercept	987.7746	1.59	0.0316		
Advertising	15.7598	11.04	<.0001		
R&D	-32.2328	-4.91	0.0002		
Gillette				0.9944	12
Intercept	-4079	-1.74	0.1075		
Advertising	2.5899	3.38	0.0054		
Reputation	-1172	-4.11	0.0014		
Focus of the firm	-2370	-3.18	0.0079		
R&D	34.6684	7.41	0.0060		
Firm size	7446	3.33	<.0001		
Johnson & Johnson				0.9987	14
Intercept	-9975	-7.27	<.0001		
Advertising	6.3420	13.33	<.0001		
Publicity	4530	7.55	<.0001		
Focus of the firm	1042	4.71	0.0003		
R&D	5.4100	38.54	<.0001		
Kimberly Clark				0.9902	13
Intercept	-15830	-2.24	0.0434		
Advertising	12.7817	7.14	<.0001		
Firm Size	5090	2.52	0.0257		
Pfizer				0.9880	14
Intercept	8714	2.80	0.0141		
Advertising	4.1880	8.44	<.0001		
Reputation	-808.9682	-1.92	0.0752		
R&D	3.2195	17.07	<.0001		
PPG Industries				0.9356	9
Intercept	80299	6.19	0.0002		
Advertising	-44.7174	-3.56	0.0061		
Reputation	-1424	-2.82	0.0202		
Focus of the firm	811.1557	3.39	0.0080		
R&D	39.5913	8.74	<.0001		
Firm size	-20874	-6.80	<.0001		
Proctor & Gamble				0.9933	15
Intercept	-7824	-1.06	0.3075		
Advertising	6.1519	12.06	<.0001		
Reputation	1649	1.76	0.0485		
R&D	6.4949	5.64	<.0001		
Sara Lee				0.8987	16
Intercept	-50930	-3.76	0.0017		
Advertising	2.2784	2.16	0.0462		
Firm size	13109	4.50	0.0004		

Stanley Works				0.9751	9
Intercept	3231	16.25	<.0001		
Reputation	-452.5666	-17.17	<.0001		
R&D	134.6268	10.47	<.0001		
Texas Instrument				0.9223	7
Intercept	7138	2.72	0.0298		
Advertising	22.9247	2.85	0.0247		
Publicity	2354	3.38	0.0117		
Focus of the firm	-1670	-4.09	0.0046		
R&D	1.9865	3.35	0.0122		
United States Tobacco				0.9935	15
Intercept	1014	2.13	0.0499		
Advertising	2.8882	3.33	0.0045		
Publicity	25.3971	1.87	0.0807		
VF Corp.				0.9913	15
Intercept	-2374	-1.94	0.0409		
Advertising	14.5289	13.89	<.0001		
Focus of the firm	53.5061	2.58	0.0211		
Firm size	890.4542	2.63	0.0190		
Vulcan Materials				0.9654	16
Intercept	-8268	-30.44	<.0001		
Reputation	164.6278	5.32	<.0001		
R&D	4506	33.22	<.0001		

Table 8 summarizes the significant marketing communication variables and their direction of the relationship in predicting corporate reputation and sales revenues. Each firm was classified into one of four categories based on its industry and product type (presented in Table 1): consumer products firms (selling products to final consumers), industrial products firms (selling manufactured products to other firms), consumer/industrial products firms (selling products to both final consumers and other firms), and services firms (service

providers). The sample consists of 10 consumer products firms, 4 industrial

products firms, 2 consumer/industrial products firms, and 2 services firms.

Table 8

Summary of Findings

Companies	Firm Classification	DV: Reputation		DV: Sales	
		adv	publicity	adv	publicity
American standard	Consumer/Industrial Products Firm		+	+	
Apple Computer	Consumer Products Firm	+			−
AT&T	Services Firm	−		+	
Coca Cola	Consumer Product Firm	−		+	−
Delta Air Lines	Services Firm	−			
Fortune Brands	Industrial Products Firm	+		+	
Gillette	Consumer Products Firm	−	−	+	
Johnson & Johnson	Consumer Products Firm		−	+	+
Kimberly Clark	Consumer Products Firm	−	+	+	
Pfizer	Consumer Products Firm	−	+	+	
PPG Industries	Industrial Products Firm			−	
Proctor & Gamble	Consumer Products Firm	+		+	
Sara Lee	Consumer Products Firm	+		+	
Stanley Works	Consumer/Industrial Products Firm		−	−	
Texas Instruments	Industrial Products Firm	+	+	+	+
United States Tobacco	Consumer Products Firm		+	+	+
VF Corp.	Consumer Products Firm	−	+	+	
Vulcan Materials	Industrial Products Firm				

+ = significant, positive impact; − = significant, negative impact.

According to the results of this study, all but four companies (Delta Air Lines, PPG Industries, Stanley Works, and Vulcan Materials) possessed at least one marketing communication variable that had a positive effect on corporate reputation or sales revenue. For these four companies, firms selling products to mainly industry-related areas, advertising and publicity were not significantly related to corporate reputation and sales revenue, or they had a negative influence on reputation and sales.

There is only one company – Texas Instruments – in which all four hypotheses were supported: positive advertising-reputation relationship, positive publicity-reputation relationship, positive advertising-sales relationship, and positive publicity-sales relationship. In United States Tobacco, three positive relationships of publicity and reputation, advertising and sales revenue, and publicity and sales revenue were supported, but no significant relationship between advertising and reputation was found. Figure 15 presents the visual information on advertising, publicity, corporate reputation and sales revenue of these two companies. According to this visual information, the two firms' advertising expenditure and publicity exhibit a relatively consistent flow with their reputation and sales revenue. Information for other companies appears in Appendix B.

Figure 15

Visual Information of Advertising, Publicity, Reputation, and Sales

A: Visual Information of Advertising, Publicity, and Reputation
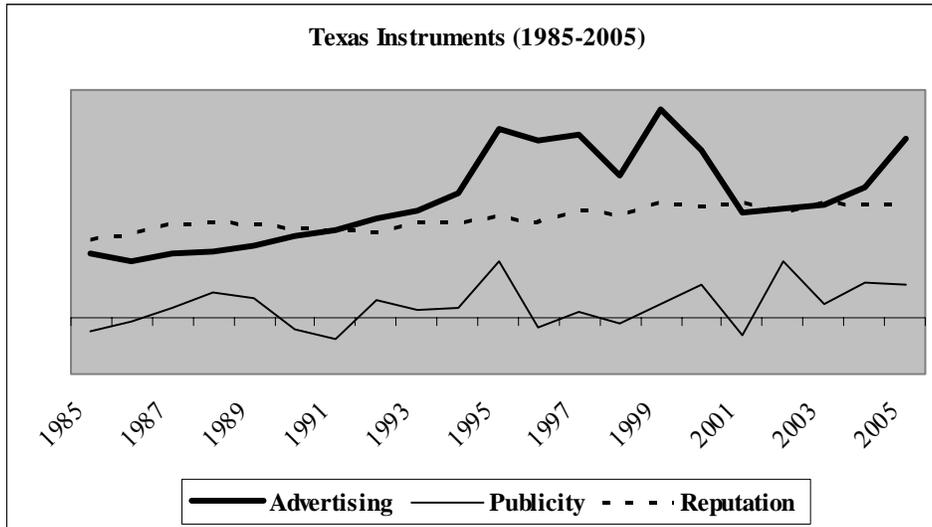
Texas Instruments (1985-2005)

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

B: Visual Information of Advertising, Publicity, and Sales
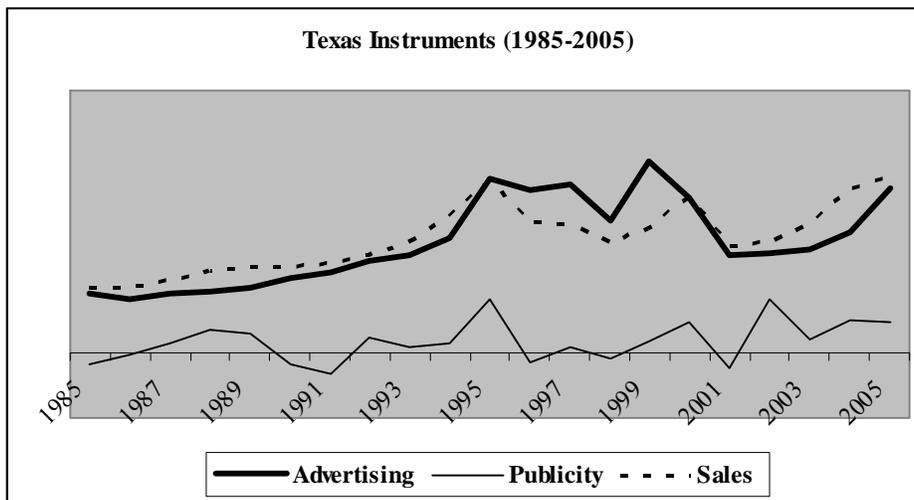
Texas Instruments (1985-2005)

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

C: Visual Information of Advertising, Publicity, and Reputation
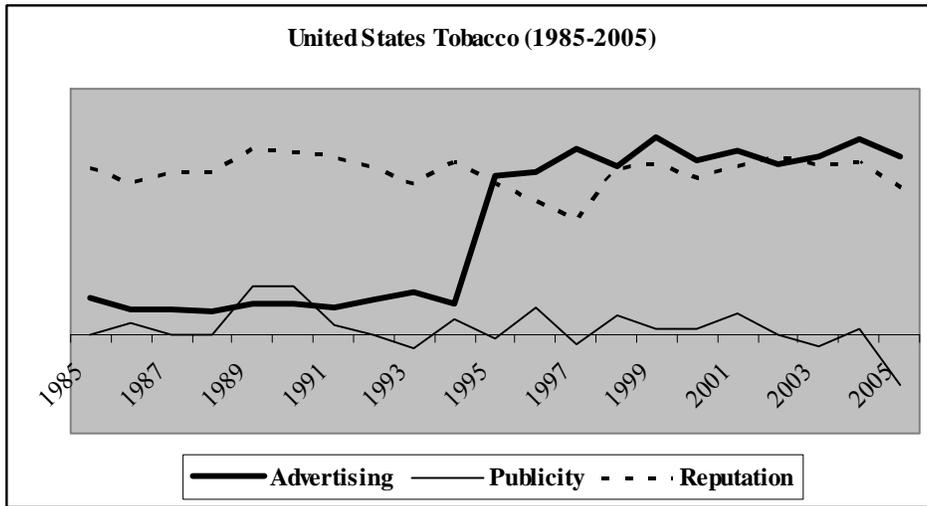
United States Tobacco (1985-2005)

Advertising —— Publicity - - - Reputation

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

D: Visual Information of Advertising, Publicity, and Sales
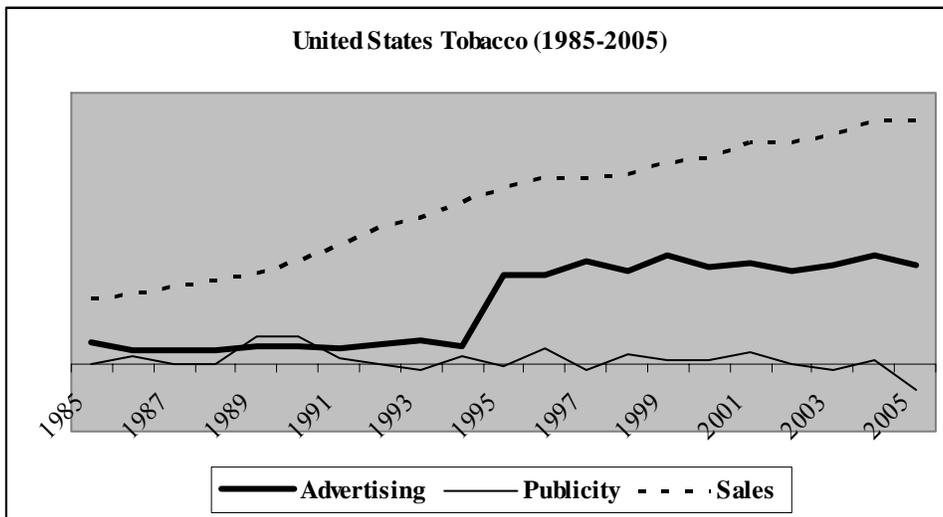
United States Tobacco (1985-2005)

Advertising —— Publicity - - - Sales

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

Hypotheses Testing Results

The findings provide some support for Hypothesis 1: advertising has a positive influence on corporate reputation. As we show in Tables 5 and 8 (final reputation model and summary table), this hypothesis is supported through five companies (Apple Computer: $t = 6.95$, $p < .01$; Fortune Brands: $t = 4.12$, $p < .01$; Proctor & Gamble: $t = 5.17$, $p < .01$; Sara Lee: $t = 5.86$, $p < .01$; Texas Instruments: $t = 5.86$, $p < .01$). Contrary to expectation, time-series analysis of 18 companies did not strongly support the hypothesis of this study.

Hypothesis 2 predicts that publicity would have a positive impact on corporate reputation, suggesting that favorable publicity is related to favorable judgment of corporate reputation. As seen in Tables 5 and 8, favorable publicity led to favorable corporate reputation for six companies (American Standard: $t = 5.52$, $p < .01$; Kimberly Clark: $t = 2.70$, $p < .01$; Pfizer: $t = 3.11$, $p < .01$; Texas Instruments: $t = 11.30$; $p < .01$; United States Tobacco: $t = 3.52$, $p < .01$; VF Corp.: $t = 2.97$, $p < .01$), thus suggesting a positive impact of publicity on corporate reputation. However, Hypothesis 2 was also not strongly supported by the finding of this study. Only one third of the sample companies included in the study support this hypothesis. This finding is consistent with Fombrun and Shanley's study (1990) that failed to find a positive relationship between the

133

volume of nonnegative media coverage and a firm's reputation. However, they found an interaction of a firm's diversification with media exposure. That is, in their study, the amount of media visibility and the extent of nonnegative coverage did not influence assessments of corporate reputation, but they had a significant influence on corporate reputation for diversified firms. Thus, further study that investigates whether there is any interaction effect of publicity with a firm's other characteristics, such as a firm's financial or strategy variables, is necessary.

As indicated in tables 7 and 8 (final sales model and summary table), Hypothesis 3 – advertising has a positive impact on sales revenue – is supported through 13 companies (American Standard: $t = 6.68$, $p < .01$; AT&T: $t = 8.15$, $p < .01$; Coca Cola: $t = 16.19$, $p < .01$; Fortune Brands: $t = 11.04$, $p < .01$; Gillette: $t = 3.38$, $p < .01$; Johnson & Johnson: $t = 13.33$, $p < .01$; Kimberly Clark: $t = 7.14$, $p < .01$; Pfizer: $t = 8.44$, $p < .01$; Proctor & Gamble: $t = 12.06$, $p < .01$; Sara Lee: $t = 2.16$, $p < .01$; Texas Instruments: $t = 2.85$, $p < .01$; United States Tobacco: $t = 3.33$, $p < .01$; VF Corp.: $t = 13.89$, $p < .01$). Of four hypotheses of this study, Hypothesis 3 is the most well supported by most companies included in the study. While many prior studies have examined the advertising and sales revenue relationship in a variety of contexts, no previous research has examined the relationship between advertising and sales revenue in terms of considering the publicity effect in a model using a longitudinal data set. Therefore, it is difficult to

134

compare the findings of this study with the results of prior studies. However, this finding confirms our general intuition about the advertising and sales relationship, implying a positive relationship.

As shown in Tables 7 and 8, Hypothesis 4, positing a positive impact of publicity on sales revenue, is supported by only three companies (Johnson & Johnson: $t = 7.55$, $p < .01$; Texas Instruments: $t = 3.38$, $p < .01$; United States Tobacco: $t = 1.87$, $p < .01$). Unlike what the present author expected, however, this hypothesis was supported by the fewest number of companies. Also the finding of this study is inconsistent with a prior study (Deephouse, 2000) that found a positive relationship between media favorableness and financial performance.

The finding from Hypothesis 4 that demonstrated that the positive impact of publicity on sales revenues was supported by the fewest number of companies appears to indicate that there might exist a different way to measure the contributions of public relations to market performance. For example, Fombrun (1996) asserted that the objectives of strategic public relations and corporate communication can and should extend beyond achieving immediate financial targets. Accordingly, many public relations and corporate communications focus on objectives such as building good community relations and improving the organization's reputation. Grunig and Hunt (1984) argued that public relations

135

goals and organizational goals should be differentiated. In general, profitability and revenue are listed as both the most common and the ultimate goals in an organization (Campbell, 1977; Seashore and Yuchman, 1967). In other words, the goal of public relations may not be to contribute to the bottom line, but public relations can contribute to the bottom line by achieving its goals. Then, it can be assumed that public relations builds corporate reputations, which in turn contributes to generate market performance. If so, the strength of the relationship between publicity and market performance will increase as the corporate reputation increases. In other words, the contribution of public relations to market performance may be more accurately assessed by examining the moderating role of corporate reputation. Thus, further studies that investigate how the corporate reputation moderates the relationship between public relations and market performance would be useful to measure the contribution of public relations to market performance.

With respect to the effect of both advertising and publicity on corporate reputation, only one company (Texas Instruments) simultaneously supported Hypotheses 1 and 2, suggesting a positive effect of both advertising and publicity on corporate reputation. With respect to Hypotheses 3 and 4, a positive association of advertising and publicity with sales revenue was supported in three companies (Johnson & Johnson, Texas Instruments, and United States Tobacco).

Additional Analysis

Reverse Causality

This study performed additional analyses to examine a few alternative hypotheses regarding the reverse causality.

<u>*The Effect of Corporate Reputation*</u>

Hypotheses 1 and 2 examined the effect of advertising and publicity on corporate reputation. That is, in this study, corporate reputation was a response variable but it can be a predictor variable. Even though this study considered the advertising effect in period t-1 on corporate reputation in period t to eliminate reverse causation, there may still exist an alternative hypothesis that corporate reputation increases the effect of marketing communication (Yoon, Guffey, and Kijewski, 1993).

Also, although this study focuses on the influences of financial variables on corporate reputation, there is a reverse causality concern between financial performance and reputation measure (McGuire *et al.,* 1990). Thus, an alternative hypothesis that corporate reputation increases a firm's performance is worth investigating.

The reverse causality was evaluated using Granger causality Wald tests (Granger, 1969), which examine whether a dependent variable predicts an independent variable. Granger's original test regressed past values of the original dependent variable and past values of the original independent variable on the current value of the independent variable. Granger tests were performed using AUTOREG procedure in SAS. Specifically, Granger tests were performed for each time-series in the data set using a bivariate approach (Deephouse, 2000; Leeflang and Wittink, 1992; McAlister, Srinivasan, and Kim, 2007): (1) the firm's corporate reputation and its marketing communication (advertising and publicity) and (2) the firm's corporate reputation and its financial performance (dividend yield, market-to-book ratio, and profit).

Granger tests were not performed for all companies included in the study. Since the purpose of this additional analysis is to ensure the results of the study, reverse-causality tests were conducted for firms in which hypotheses were supported. Table 9 presents the results of the Granger tests. Test results showed that the coefficients for lagged corporate reputation were not significant in most data sets. This implies that corporate reputation did not affect marketing communication and financial performance.

Table 9

The Results of Granger Tests

Company	Corporate Reputation				
	Advertising B (S.E.)	Publicity B (S.E.)	Dividend Yield B (S.E.)	M/B Ratio B (S.E.)	Profit B (S.E.)
American standard		-0.0692 (0.4523)			
Apple Computer	11.6879 (20.9542)			0.3258 (0.6571)	0.0775 (0.0658)
AT&T			-0.0637 (0.2664)	0.3200 (0.3231)	
Coca Cola				2.7006 (0.7400)	0.0175 (0.0315)
Delta Air Lines				0.1587 (0.2852)	
Fortune Brands	-19.1162 (15.1001)				
Gillette				1.6186 (6.5027)	
Johnson & Johnson					-0.0060 (0.0107)
Kimberly Clark		0.2451 (0.1273)		0.4488 (0.3434)	
Pfizer		0.1494 (0.1358)	-0.2270 (0.3727)		
PPG Industries					
Proctor & Gamble	483.2439 (258.0899)		-0.6687 (0.3289)		
Sara Lee	199.3436 (45.6217)		-0.5394 (0.2161)*		
Stanley Works					
Texas Instruments	256.2410 (28.1786)	0.0644 (0.0329)	-0.0637 (0.2664)		
United State Tobacco		-0.0831 (0.1645)			
VF Corp.		-0.0260 (0.2081)	0.6918 (0.3654)		
Vulcan Materials					

* Significant at $p < .05$

The Effect of Sales Revenues

As with the effect of corporate reputation, alternative hypotheses that sales revenue affects advertising, publicity, reputation, and R&D can be suggested. These reverse causations were tested using Granger Walt tests for only firms that exhibited a significant positive effect on sales revenue. Table 10 shows the results of reverse causality tests. Test results showed that the coefficients for lagged sales revenues were not significant in most data sets. It indicates that sales revenue did not influence advertising, publicity, reputation, and R&D.

Table 10

The Results of Granger Tests

Company	Sales Revenue			
	Advertising B (S.E.)	Publicity B (S.E.)	Reputation B (S.E.)	R&D B (S.E.)
American standard	0.005192 (0.001773)			0.008163 (0.005765)
Apple Computer				
AT&T	0.0363 (0.006256)*			-0.0309 (0.0177)
Coca Cola	-0.002321 (0.0142)		-0.000034 (0.0000259)	
Delta Air Lines				
Fortune Brands	0.0104 (0.0161)			
Gillette	0.1580 (0.0604)			0.0180 (0.0109)
Johnson & Johnson	0.0135 (0.007012)	-2.387E-6 (1.6482E-6)		0.0355 (0.0229)
Kimberly Clark	0.0101 (0.003019)			
Pfizer	0.000754 (0.0241)			0.2354 (0.1147)
PPG Industries				0.0109 (0.006141)
Proctor & Gamble	0.0198 (0.0436)		-0.000183 (0.0000461)*	0.0122 (0.006505)
Sara Lee	0.0330 (0.0299)			
Stanley Works				0.000630 (0.000470)
Texas Instruments	0.0363 (0.006256)	4.3038E-6 (3.2974E-6)		-0.0309 (0.0177)
United State Tobacco	0.005057 (0.004465)	-0.000354 (0.000196)		
VF Corp.	0.0007422 (0.0207)			
Vulcan Materials			0.000439 (0.000220)	-0.000968 (0.000502)

* Significant at $p < .05$

CHAPTER 6

DISCUSSION

As reviewed and hypothesized previously, significant positive relationships between marketing communication and corporate reputation and between marketing communication and sales revenue were expected. However, the significant negative or non-significant relationships are surprising and notable. This study provides a few possible explanations for these phenomena.

First, even though this study assumes a linear relationship between marketing communication and corporate reputation or sales revenues, perhaps, theoretically, marketing communication may have nonlinear influences on corporate reputation or market performance. For example, diminishing returns may exist. That is, an initial increase in marketing communication will enhance corporate reputation or market performance, but beyond an optimal point, further increases in marketing communication may be harmful. This finding has been well-established in the advertising and sales relationship studies (Simom and Arndt, 1980). Many economic models regarding the advertising and sales relationship imply diminishing returns to increased advertising. No literature or empirical study, however, has explored a nonlinear effect of marketing communication on corporate reputation. Moreover, there has been no theoretical

framework or empirical study regarding a nonlinear effect or diminishing returns of public relations efforts to market performance.

A recent study provides evidence that nonlinear relationships or diminishing returns could be possible in explaining the presence of non-significant or negative relationships in the present study. Luo and Donthu (2006)[2] found a curvilinear relationship with an inverted U-shape between marketing communication productivity and shareholder value, suggesting that an unrestricted increase in marketing communication productivity may be harmful and cause negative market returns. Therefore, it could be possible that non-linear relationships, such as diminishing returns or a s-shape response function, may exist in the relationship between marketing communication and corporate reputation or market performance. Further studies should examine the presence of non-linear relationships.

A second possible explanation for the presence of non-significant or negative influences of marketing communication on corporate reputation or sales revenues is heterogeneity of the industries or product types of the firms included

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[2] Luo and Donthu (2006) define marketing communication productivity (MCP) as the conversion ratio of marketing communication inputs (advertising media spending and sales promotion expenditures) to outputs (sales level, sales growth, and corporate reputation). The logic of this approach is that firms attempt to consume the least possible amount of inputs to achieve the same level of desired outputs from time t to time t+1. If a firm cannot reduce its inputs without hurting its output level, it is considered productive over time. Otherwise, it is unproductive and inefficient. The authors estimated MCP using the dynamic Malmquist approach. To calculate MCP from time t to time t+1 for each firm, Malmquist (1953) initially developed dynamic models to assess the total factor productivity of general economic activities over time. Later, Fare and colleages (1992, 1994) constructed the time-series linear programming Malmquist productivity index (for more details, see Luo and Donthu's (2006) article).

in the sample. That is, industry category or product type could be one possible explanation for these unexpected relationships. According to prior studies (Blassubramanian and Kumar, 1990; Zinkhan and Cheng, 1992; Graham and Frankenberger, 2000; Chan, Lakonishok, and Soughiannis, 2001; Mizik and Jacobson, 2003), model estimates regarding marketing communication may be different depending on the industry classification or product classification. In general, for example, consumer products firms are believed to have a higher advertising intensity than industrial products firms. Also, consumer products firms typically have broad target markets and are more likely to rely on mass-mediated types of marketing communication, whereas business-to-business product firms typically have more focused targets and are more likely to utilize customized marketing communications.

Since companies included in this study are heterogeneous, it might be useful to explore whether there are any different effects by type of firm. The 18 companies included in the study were classified into four categories based on the industry and product type, as presented in Table 1. They consist of 10 consumer products firms, 4 industrial products firms, 2 consumer and industrial products firms, and 2 services firms. Table 11 presents a summary of findings by firm classifications.

Table 11

Summary of Hypotheses Tests by Firm Classification

	Consumer Products Firm (all: 10 firms)	Industrial Products Firm (all:4 firms)	Consumer/ Industrial Firm (all: 2 firms)	Services Firm (all: 2 firms)
H1: Advertising – Reputation	3(+), 5(-), 2(n.s.)	2(+), 2(n.s.)	2(n.s)	2(-)
H2: Publicity – Reputation	4(+), 2(-), 4(n.s.)	1(+), 3(n.s.)	1(+), 1(-)	2(n.s.)
H3: Advertising – Sales	9 (+), 1(n.s.)	2(+), 2(n.s.)	1(+), 1(n.s.)	1(+)
H4: Publicity – Sales	2(+), 2(-), 6(n.s.)	1(+), 3(n.s.)	2(n.s.)	2(n.s.)

Note: Number before parenthesis refers to the number of firms with a relationship.
(+) refers to a positive relationship, (-) represents a negative relationship, and n.s. indicates a non-significant relationship.

When examined in this context, advertising effects by firm's classification were obvious. The effect of advertising on sales was supported in most consumer products firms, which is not surprising given a higher advertising investment and the greater importance of advertising for consumer products firms than industrial products firms. In services firms, even though some relationships were negative (the advertising-reputation relationship), only advertising was significantly related to corporate reputation and sales revenue. Publicity did not exhibit any significant association to corporate reputation or sales revenues in services firms. This finding is inconsistent with one's expectation that products firms can better use

145

advertising to communicate products' value to potential customers, whereas service firms may need to use more reliable, credible media as communication instruments for their services.

No specific pattern regarding the effect of publicity by a firm's classification was evident, except for the fact that publicity did not show any significant relationship with corporate reputation or sales in services firms. That is, no specific pattern by a firm's classification was found in the relationship between publicity and corporate reputation and between publicity and sales revenues. However, it seems to be difficult to generalize these findings, because of the small and convenient sample composition of this study. Details on the limitations of the sample composition are discussed in the limitations and further study section.

Even though this study did not find any clear pattern based on a firm's classifications, further research that explores firm and/or industry specific effects of marketing communication on corporate reputation or sales revenues may uncover consistent findings.

Theoretical Implication

This is the first empirical study to use a multi-industry sample of firms over a 21-year period to examine the idea that higher advertising and favorable

publicity generate favorable assessment of corporate reputation and increase sales revenues. Also, this is the first study to attempt to examine the simultaneous effect of advertising and publicity using longitudinal panel data at the firm level.

Additionally, this study suggests a new measure of publicity. Many prior studies have examined the effect of publicity as measured as a positive or negative manipulation of a news story in an experimental setting. Or, publicity has been measured by the number of news stories, the volume of nonnegative media coverage, or advertising equivalency. The measure of publicity used in this study is not a newly developed method, but a new application. In this study, publicity was measured as the extent to which media reports are favorable, using the Janis-Fadner coefficient of imbalance (Janis and Fadner, 1965; [Equation 1]). It measures the relative proportion of favorable to unfavorable news stories while controlling for the overall volume of news stories. This method was initially developed for analyzing wartime propaganda and has been used in strategy research involving media to assess the degree of media favorability (Carroll, 2004; Deephouse, 2000; Pollock and Rindova, 2003). However, few studies have used this method as a publicity measure of public relations. Because one of the main purposes of public relations is to obtain favorable publicity from media, it appears reasonable to use favorableness as a publicity measure.

Finally, this study includes accounting/financial (e.g., dividend yield, market-to-book ratio, profitability) and strategy (e.g., diversification, focus of the firm, R&D) factors in the corporate reputation model and the sales revenue model, as well as marketing communication (advertising, publicity) variables. Also, firm characteristics or contextual variables such as firm size controlled for the relationship between marketing communication and corporate reputation or market performance. Including alternate variables in the model could improve the model's accuracy. Furthermore, the positive impacts of marketing communication on corporate reputation and sales revenues in the models with these many variables imply that there may be an interaction effect of marketing communication variables and financial/accounting/strategy variables in managing corporate reputation or sales revenues. For example, the effect of marketing communication on corporate reputation can differ depending on a firm's strategy, such as diversification or branding strategy. Further research that examines how marketing communication and financial/accounting or strategy variables interact with each other to improve corporate reputation and market performance would be valuable to justify advertising expenditures and public relations efforts. These further studies would be also useful for developing marketing communication strategies.

Managerial Implications

The findings of this study also generate useful implications for managerial considerations. The primary finding of this study appears to imply that a firm can take advantage of advertising and publicity to achieve dual benefits, namely, corporate reputation and sales revenues. Prior research has assessed the accountability of marketing communication as mainly market or financial performance output. This study stresses the impact of advertising and publicity on corporate reputation, as well as their effect on market performance. A firm's marketing communication expenditures and efforts should be proven by its customers (sales revenues). At the same time, however, it can also be supported by the managerial community. It should be noted that the dependent measure, corporate reputation, is an assessment by executives, directors, and financial analysts. It implies that a firm's marketing communication can affect a firm's reputation ranking in its industry, which comes from managerial properties. In turn, reputation rankings (e.g., *Fortune*'s Most Admired American Corporations) publicized through the media can be used as an evaluative criterion to form the public's attitude and opinion about the firm. Thus, the study's findings that advertising and publicity have a positive impact on corporate reputation as well as

149

sales revenues can be used to justify the accountability for marketing communication efforts.

Although this study demonstrates that advertising and publicity have a significant impact on corporate reputation and sales revenues for certain companies, the overall results found through the time-series analysis for 18 companies are somewhat inconsistent with the prior expectations. Non-significant or negative impacts of advertising and publicity on corporate reputation and sales revenues occur for some companies. These findings suggest that advertising and publicity may not be the most effective marketing communication tools for managing corporate reputation and market performance. Also, these findings shed light on the current trend of firms' reliance on nontraditional marketing communication.

In recent years, companies have experienced an increase in the number and diversity of communications options to reach consumers. Traditional advertising media have fragmented, and new, nontraditional media, promotion, and other communication alternatives have emerged. Thus, many companies are faced with the challenge of determining the best method of allocating marketing communication dollars across not only the traditional media but also nontraditional media, such as new media, social networking sites, database and direct marketing, and word-of-mouth. Further studies that extend the present

study to include other nontraditional marketing communication activities would

be beneficial to marketing managers who determine the marketing

communication mix.

CHAPTER 7

CONCLUSION

The accountability of marketing communication expenditure or efforts has long been a central issue. Many prior studies have concentrated on market performance to assess the effectiveness of marketing communication. In spite of the interest in new metrics of marketing communication effects, such as shareholder value or systemic risk, market performance has still been of key interest among marketing scholars and practitioners. In addition, recent developments of the market-based assets theory (Srivastava, Shervani, and Fahey, 1998) focus on intangible market-based assets such as brand equity or corporate reputation. The resource-based view of the firm proposes that a favorable reputation is an intangible asset that increases a firm's performance (Barney, 1991; Hall, 1992).

This study examines the impact of a firm's advertising and publicity, two important marketing communication activities, on its corporate reputation and sales revenues. There is no doubt that advertising is an important marketing communication tool. As media circumstances and the customers' needs have changed, however, traditional advertising struggles to catch consumers' attention, and public relations has been recognized as a vital marketing communication tool.

152

While a few studies have examined the effects of advertising and publicity at a consumer attitude or behavior level, no attention has been given to the simultaneous effects of advertising and publicity at the firm level. Furthermore, there are few insights that relate advertising and publicity to corporate reputation. Thus, advertising, publicity, corporate reputation and sales revenues are the main interests of this study.

Two regression models were established for testing the hypotheses: (1) a model for the marketing communication-corporate reputation relationship and (2) a model for the marketing communication-sales revenue relationship.

For the marketing communication and corporate reputation relationship, the major finding of this study is that advertising and publicity have significant effects on corporate reputation for certain companies. Other variables, such as a firm's dividend yield to investors, market value, diversification, and profitability were significantly related to assessments of corporate reputation for certain companies, but the direction of the relationship varied from company to company. For example, as expected, low dividend yields induce high assessments of corporate reputation for certain companies. A firm's current market value also affects assessments of a firm's reputation. More diversified companies yield lower corporate reputations for certain companies.

Regarding the relationship between marketing communication and sales revenues, the major finding is that advertising and publicity have significant effects on sales revenues for some companies. A firm's R&D expenditures, the focus of the firm, and firm size also showed a significant positive relevance to sales revenues for certain companies. Reputation, when included in the marketing communication and sales model, exhibited a significant relationship to sales revenues, but, contrary to expectations, the direction of the relationship differed among companies in the sample.

Despite the contributions of the present study as discussed previously, it is not free from limitations. This chapter points out this study's limitations and suggests further research directions.

Limitations and Future Research

First, it should be noted that the composition of the sample is a potential limitation. Although it is a valid sample, the sample of this study is not truly representative of the population of firms in the economy. Data limitation constrained the focus of this study to firms that are large, publicly held companies. The sample of this study was obtained from *Fortune*'s annual reputation survey of the most admired U.S. corporations, which consisted of mostly large American

firms. Furthermore, this study limited the sample to only firms with available data

for the whole 21-year period. Thus, the representativeness and generalizability of

the findings are limited. The results cannot be generalized beyond relatively large

American firms without further investigation. Further research will be needed to

examine whether the relationship between advertising/publicity and corporate

reputation/sales holds under other conditions, such as a more general sample that

includes poorly performing firms or small firms. However, it was impossible to

include small-sized firms or poorly performing firms in this study since it was

difficult to obtain the necessary longitudinal data regarding these firms.

Second, although this study controlled for many accounting/financial,

strategy, and firm characteristic variables, other variables not included in the

model may impact the relationship between marketing communication and

corporate reputation and between marketing communication and market

performance. For example, non-economic variables, such as a firm's social

responsibility and charitable donations, or industry competition effects, may

influence judgments about the firm or market performance. Further research that

includes the effects of historical performance measures rather than short-term

performance, non-economic measures, and a firm's brand level strategy on

corporate reputation and market performance would be valuable

155

The third limitation is found in the measure of publicity. Even though this study measured publicity in a new way, in measuring publicity with content analysis, the data included only two daily newspapers (*The New York Times* and *Wall Street Journal*). The selection of these two daily newspapers is based on the fact that they have been frequently used in many prior studies and that they have the largest circulation among U.S. newspapers. However, including other media sources, such as news wire services or broadcast media, may improve the specificity of the analyses or measurement accuracy and increase our understanding of publicity measure.

More importantly, there may be a concern that publicity is a weak measure of public relations (PR). Publicity may not represent the whole spectrum of PR activities. In contrast to the advertising measurement in terms of dollar spending, there has been no agreement on the best way to measure and quantify PR. PR has been measured by counting the number of news releases, the number of column inches, coverage in specific publications, and so on. PR does not provide any measurable numbers at all.

The absence of the method to measure PR appears to be attributable to the different orientations and definitions of PR. Among PR scholars and professionals, PR has been viewed as the management function that establishes and maintains a mutually beneficial relationship between an organization and the various

stakeholders (Cutlip, Center, and Broom, 1985; Dozier and Broom, 1995; Lindenmann et. al., 1997). Among advertising and marketing scholars, however, PR is still perceived as a set of technical tools, such as publicity and media relationship, intended to support marketing goals. In recent years, a few PR scholars (Grunig and Grunig, 1998; Harris, 1999) have distinguished corporate public relations (CPR) and marketing public relations (MPR). MPR is recognized as one of several marketing activities intended to support the relationships customers have with a brand and company. They include all non-traditional marketing communications, other than advertising. CPR is seen as having much broader communication management functions than MPR. Beyond the marketing function, CPR emphasizes all communication activities for building a good relationship with various stakeholders surrounding an organization, such as shareholders, employees, suppliers, communities, and governments, as well as customers. These different orientations of PR may make it difficult to measure PR in a standardized way.

In order to develop a measure of PR that could theoretically represent the whole spectrum of PR activity, it is important to go beyond the idea of advertising and PR as different disciplines with different perspectives and find a way for various marketing communications to interact with each other to improve the overall value of a firm. A focus group or in-depth interview with PR/advertising

professionals would be helpful to develop a theoretical framework for finding the most effective PR measurement for a firm. Technically, systematic data management regarding PR activities will provide a basis for quantifying PR. Tasks to identify PR as a revenue generator have become important. However, PR measurement is more than the barometer of PR success, and PR success is impossible without measurement. Thus, qualifying PR activity is a primary issue for further marketing communication research development.

For future study, an alternative measure of corporate reputation is suggested. Corporate reputation of this study was derived from *Fortune*'s reputation score, which came from firms' executives, directors, and financial analysts. Despite many prior studies having successfully used *Fortune*'s corporate reputation score in both marketing and strategy studies, their focus may be different from other stakeholders of a firm, such as customers or media. Thus, the use of an alternative measure of corporate reputation from other stakeholders may provide different results and implications. For example, The Reputation Institute has created an overall reputation score called the Reputation Quotient (RQ, Fombrun, 1996) from the general U.S. population. To create the RQ score, respondents are asked to nominate firms they consider to have the best and worst reputations in the country and then provide a 20-item evaluation of the reputation of each firm. This RQ score can be used as an alternative measure of corporate

reputation ascribed to firms by general consumers. The methodology used to create RQ reputation scores by The Reputation Institute is presented in Appendix D. Further research should examine the firm's reputation from the perspective of different stakeholders.

The present study did not use normalized data of the variables because of the lack of data. For example, to normalize variables, one first calculates industry medians for the variables. Then, one normalizes each firm's data relative to the respective industry medians by subtracting the median values of the firms' corresponding industry groups. If data is available, normalization of the variables will make it possible to account for any systematic differences between industry groups and to investigate their relative importance by comparing estimates.

The results of this study imply the presence of the interaction or moderating effect of variables. Two interaction effects are suggested for further study: (1) the interaction of advertising and publicity on corporate reputation and market performance and (2) the interaction effect of corporate reputation and marketing communication on market performance.

First of all, the interaction of advertising and publicity can be expected. For methodological reasons, this study examined the main effect of advertising and publicity. The inclusion of interactions in the regression model, despite the study not being specifically designed to assess the interaction, can make it

159

difficult to estimate the other effects in the model. Thus, this study did not include the interaction effect of advertising and publicity so that other effects might be better assessed. However, sometimes the way advertising influences corporate reputation may depend on publicity. For example, firms with high advertising expenditures may build higher corporate reputations from favorable media coverage. Also, in judging corporate reputation or generating sales revenues, the reliance on publicity may increase when the confidence in advertising generated by a firm is absent. The descriptive analysis presented in Figures 13 and 14 supports this idea that there might be an interaction effect of advertising and publicity on sales revenues. The results of the descriptive analysis suggest that if the publicity condition is the same (unfavorable publicity or favorable publicity), firms that spend more on advertising (high advertising expenditures) generate much higher sales revenues. Thus, further studies that examine the interaction effect of advertising and publicity on corporate reputation or market performance in greater detail are necessary. Moreover, theoretical research using qualitative methods (e.g., in-depth interview, field studies, focus groups) to develop a conceptual framework and theoretical proposition of how advertising and PR work together would be useful for setting a future research agenda.

Second, the findings regarding the relationship between corporate reputation and sales revenues suggest another interesting issue for further

investigation: how corporate reputation moderates the relationship between marketing communication and market performance. This study focused on the main effects of marketing communication on corporate reputation and sales revenue, respectively. For examining the relationship between marketing communication and sales revenue, corporate reputation was used as one of the control variables to rule out the influence of any other effect on sales revenues other than marketing communication effects. It found the main effects of marketing communication on corporate reputation and sales revenue. Also, the main effect of corporate reputation on sales revenue was found for certain companies. On the basis of these findings, one can assume that the relationship between marketing communication and market performance can be influenced by corporate reputation.

Specifically, prior brand equity studies appear to provide a theoretical framework for a moderating role of corporate reputation on the relationship between advertising and market performance. Many academic studies have revealed that marketing activities influence brand equity. In marketing literature, it is widely accepted that advertising increases brand equity (Aaker and Biel, 1993, Kirmani and Zeithaml, 1993; Mela, Gupta, and Lehmann, 1997). Brand equity influences sales directly by means of consumer choice, and indirectly by enhancing the effectiveness of the brand's marketing efforts and insulating the

brand from competitive activity (Keller, 2003). This idea can be applied to the study of corporate reputation, in that reputation has the same conceptual association as brand equity. Based on well-known previous research regarding the role of brand equity on the advertising and market performance relationships, one can imagine that the incremental value that consumers give to a well-respected company will be greater than for an equivalent less-respected company. Thus, further studies can investigate how corporate reputation reinforces the impact of advertising in enhancing market performance (the moderating role of corporate reputation on the relationship between advertising and market performance).

Corporate reputation can also moderate the effect of publicity on market performance. As discussed in the hypotheses test section, the contribution of publicity to market performance may be measured by examining the moderating role of corporate reputation on market performance. As public relations scholars and practitioners insist, if public relations contributes to a firm's market performance by achieving public relations' goals of building corporate reputation or goodwill, the strength of the relationship between publicity and market performance will increase as corporate reputation increases. Thus, further studies that investigate how corporate reputation moderates the relationship between public relations and market performance would be useful to measure the contribution of public relations to market performance. The author hopes the

findings of the present study will be a solid basis for investigating how corporate reputation interacts with other marketing communication activities to affect a firm's market performance.

Finally, this study provides new research ideas for more thoroughly exploring the contribution of corporate reputation to market performance. Unlike prior studies that demonstrated the positive effect of corporate reputation on market performance, the positive relationship was not strongly supported by the current study, as shown in Table 5. Prior studies seem to provide a reason for the unexpected relationship between corporate reputation and sales revenues. Boulstridge and Carrigan (2000) and Page and Fearn (2005) suggested that corporate reputation is recognized as important to most consumers, but consumers do not think that corporate reputation is particularly important when making a buying decision. Page and Fearn (2005) found that 70% of consumers in the UK, 64% in the U.S., and 65% in Japan did not think about corporate reputation while they were shopping. These prior studies imply that there might be an alternative measure other than sales revenue to explore the contribution of corporate reputation to market performance. Thus, further research that considers an alternative measure of market performance may provide more robust findings.

In addition, in order for corporate reputation to play an important role in influencing buying decisions, customers need to link the products they are

considering with the company. However, there are some companies that have a different name than their major brands. That is, the effect of corporate reputation on sales revenue can differ depending on a firm's branding strategy[3]. For example, corporate branding strategy makes it easy to be aware of the link between a company name and brand name, but mixed branding or house of brands strategies may make it difficult to link the company name and brand name. This study failed to consider the branding strategy factor because of the data availability. It was difficult to obtain firms' complete brand level data for a 21-year period. For example, firms' mergers and acquisitions made it difficult to define and obtain firms' branding strategy variable for each year. When data was examined regarding the effect of brand strategy based on the information from companies as of 2005 (18 firms included in this study use different branding strategies. Among them, 11 firms employ mixed branding or house of brands strategies); no clear pattern was found regarding the relationship between corporate reputation and sales revenue. However, it appears to be natural for the composition of the sample in this study. Further studies that include the brand-level data would more

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[3] On the basis of a comprehensive content analysis of brands of major U.S. and European grocery products, Laforet and Saunders (1994) propose three categories of brands based on the use of the firm's name in products' brand names: (1) corporate branding: the name of the firm or its subsidiary is prominent in the brand names of the products or services (e.g., AT&T, Apple Computer); (2) mixed branding: a firm's name is combined with another name (e.g., Gillette's Gillette, Oral-B, Duracell, Braun, Waterman); (3) house of brands: a firm's name is not used at all to mark products or services (e.g., Procter & Gamble's Pampers, Crest, Tide, Bounty, Febreze) (Rao, Agarwal, Dahlhoff, 2004).

thoroughly explore the contribution of corporate reputation to market

performance.

Appendix A

HOW *FORTUNE* CONDUCTS THE MOST ADMIRED SURVEY

The Most Admired list is the definitive report card on corporate reputations. Our survey partners at Hay Group started with the FORTUNE 1,000 -- the 1,000 largest U.S. companies ranked by revenue -- and the top foreign companies operating in the U.S. They sorted the companies by industry and selected the ten largest companies in each.

To create the 65 industry lists, Hay asked executives, directors, and analysts to rate companies in their own industry on eight criteria, from investment value to social responsibility. This year only the best are listed as most admired: A company's score must rank in the top half of its industry survey. Ranks for the rest of the contenders are available online only.

To create the top 20 and overall list of Most Admired Companies, Hay Group asked the 10,000 executives, directors, and securities analysts who had responded to the industry surveys to select the ten companies they admired most. They chose from a list made up of the companies that ranked among the top 25% in last year's survey, plus those that finished in the top 20% of their industry. Anyone could vote for any company in any industry. The difference in the voting rolls is why some results can seem anomalous -- for example, FedEx is one of the top ten Most Admired Companies but only second in its own industry.

A total of 611 companies in 70 industries were surveyed. Due to an insufficient response rate, the results for 29 companies in five industries are not reported: advertising, consumer credit, health care, pharmacy and other services, precision equipment, and printing. Thus American Express (No. 17) and 3M (No. 20) are on the overall list even though their industries -- consumer credit and precision equipment -- did not have enough responses to merit a category.

Source: Fortune Magazine, Vol. 153, No. 4, March 6, 2006

Appendix B

VISUAL INFORMATION
(ADVERTISING, PUBLICITY, AND CORPORATE REPUTATION)

American Standard (1985-2005)

Legend: Advertising — Publicity - - - Reputation

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

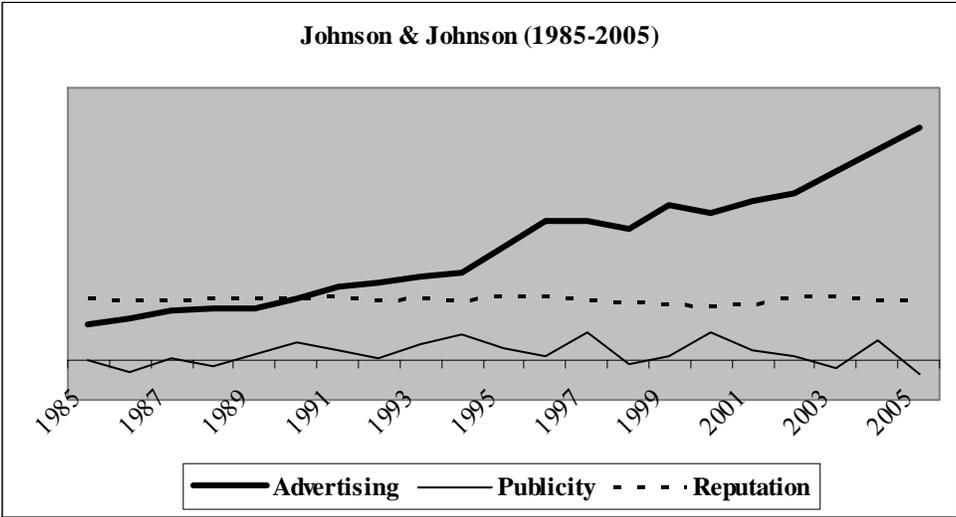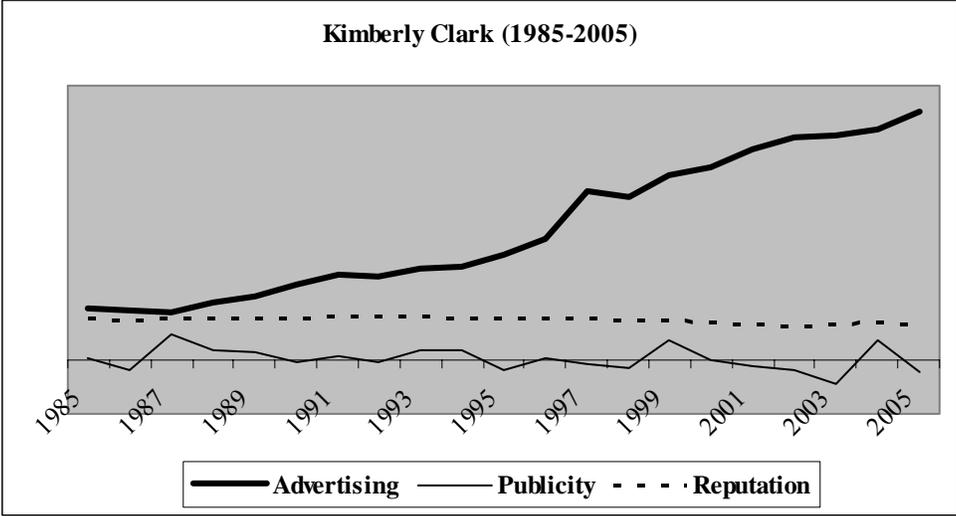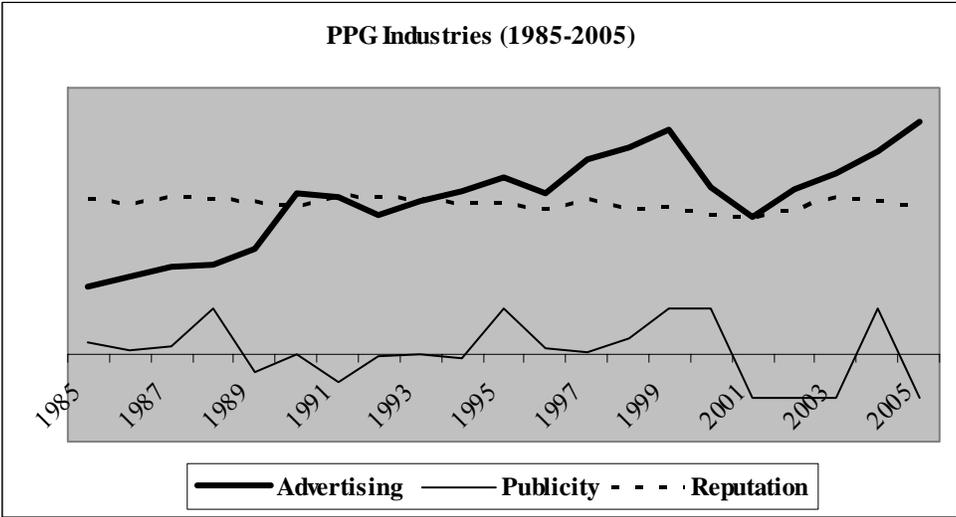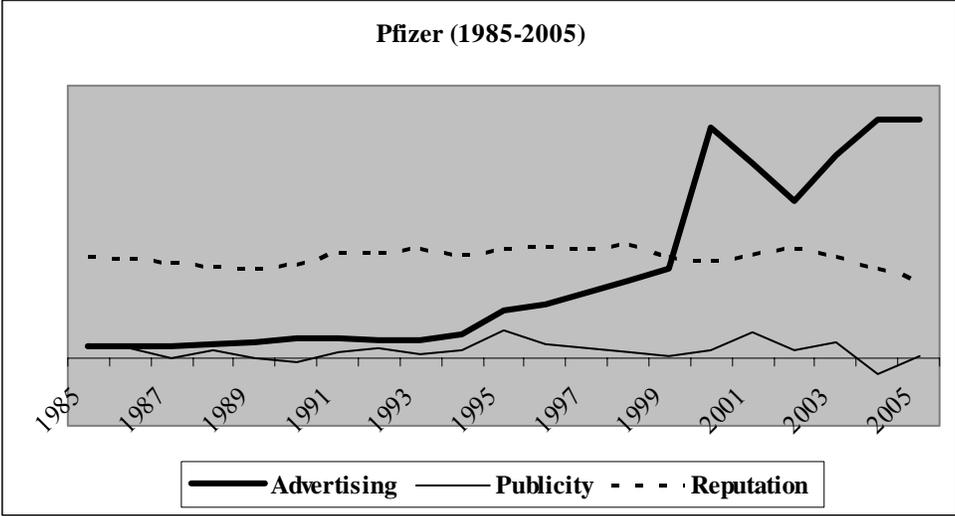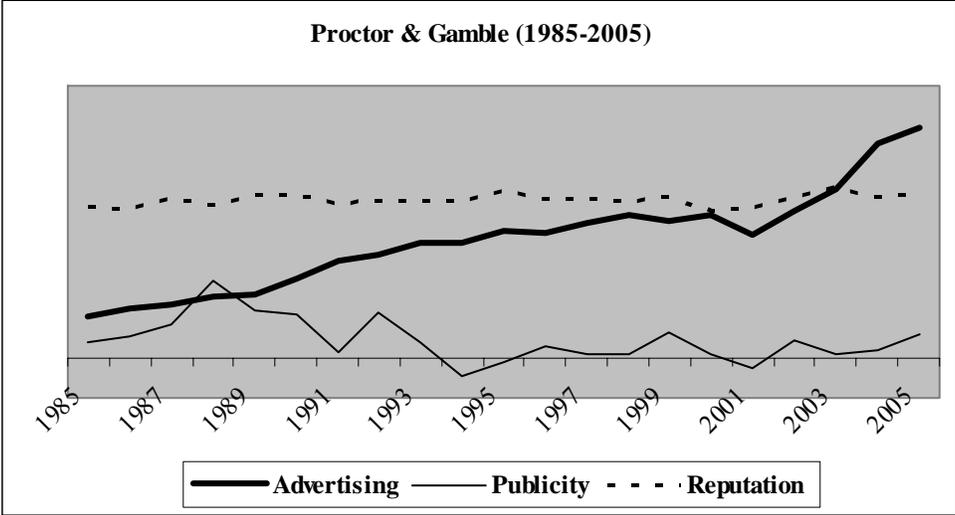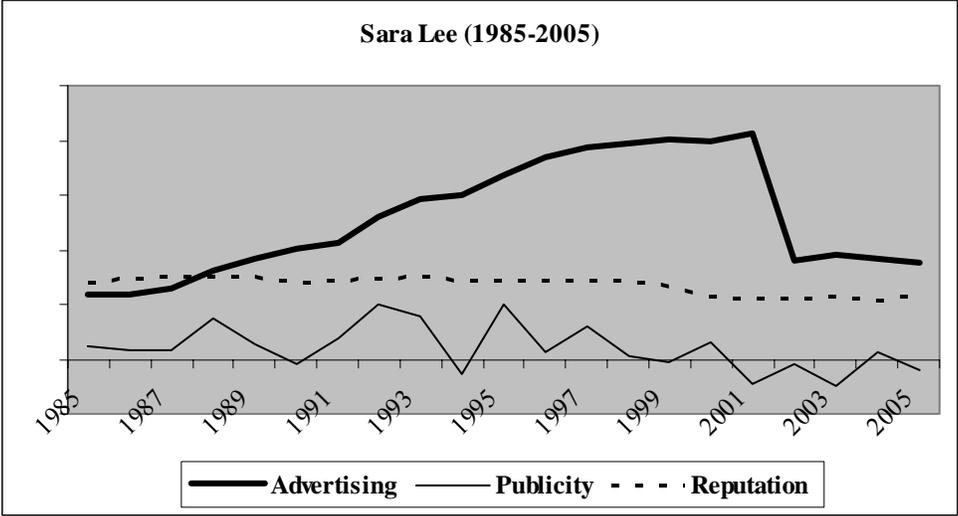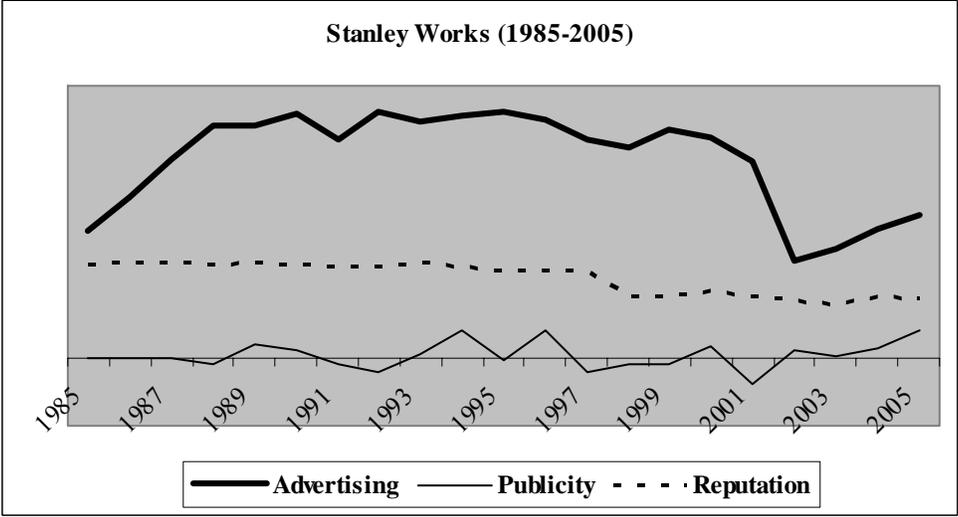**AT&T (1985-2005)**

Legend: Advertising — Publicity - - - Reputation

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

Apple Computer (1985-2005)

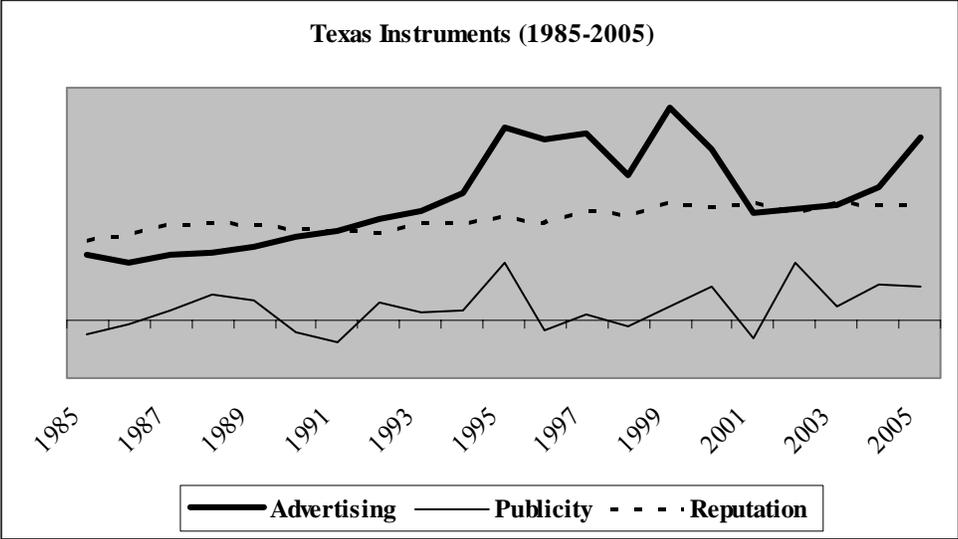Legend: **Advertising** ——— **Publicity** - - - **Reputation**

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

Coca Cola (1985-2005)

Legend: **Advertising** ——— **Publicity** - - - **Reputation**
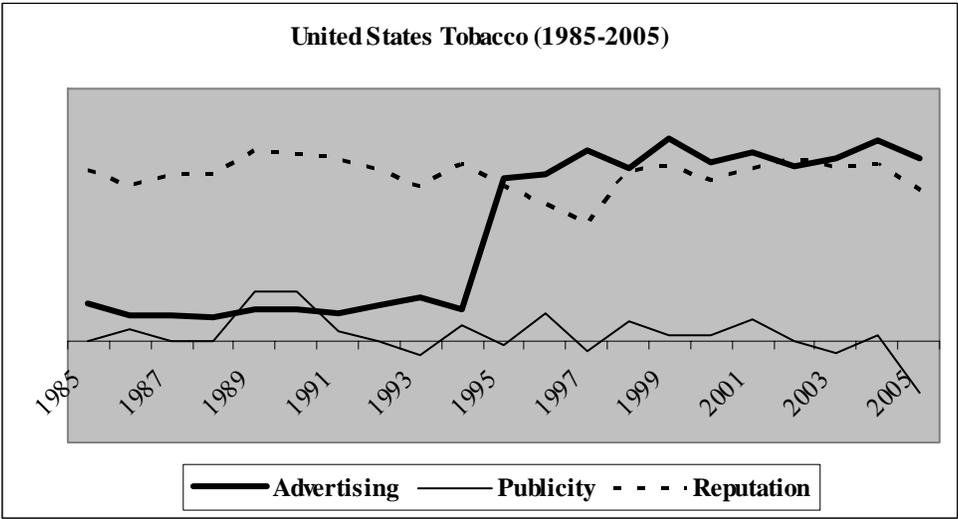
Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

168

Delta Air Lines (1985-2005)

Advertising ——— Publicity - - - Reputation
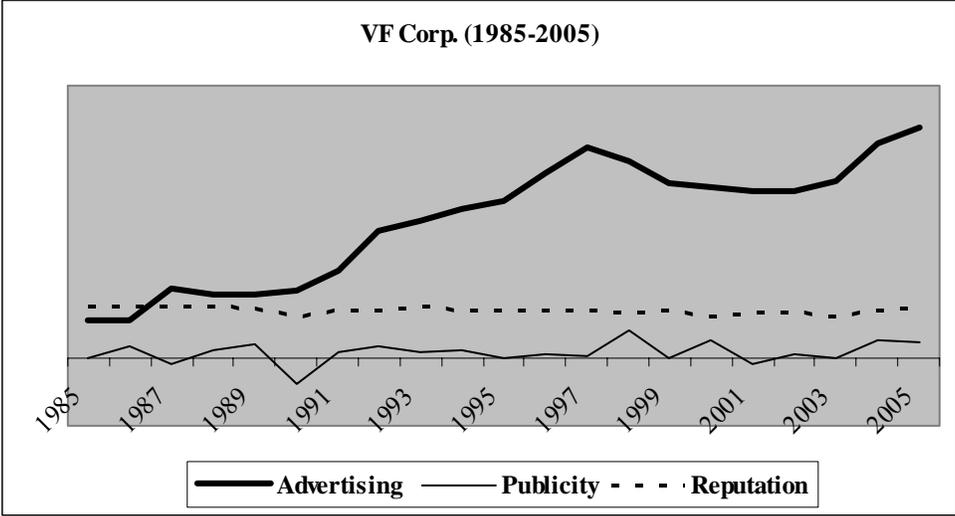
Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

Fortune Brands (1985-2005)

Advertising ——— Publicity - - - Reputation

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

Gillette (1985-2005)
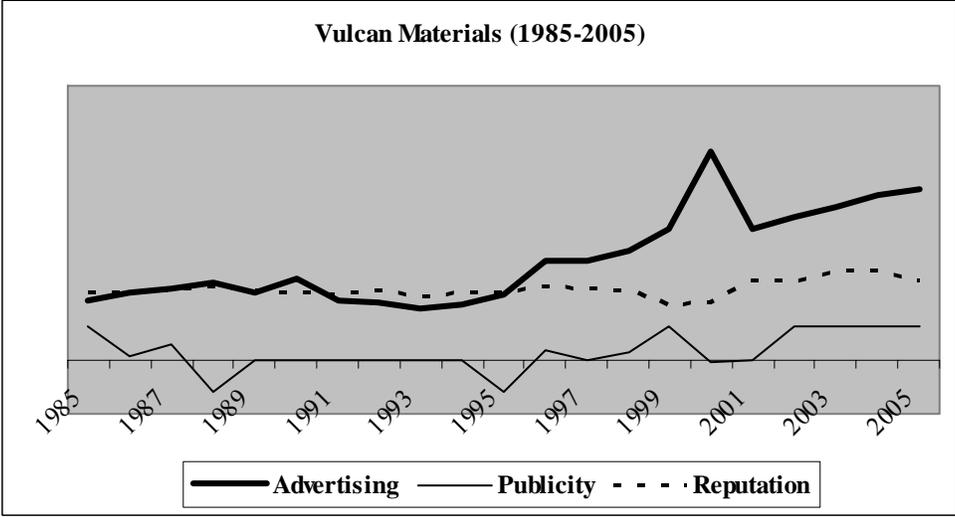
Legend: **Advertising** **Publicity** - - - **Reputation**

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

Johnson & Johnson (1985-2005)

Legend: **Advertising** **Publicity** - - - **Reputation**

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.
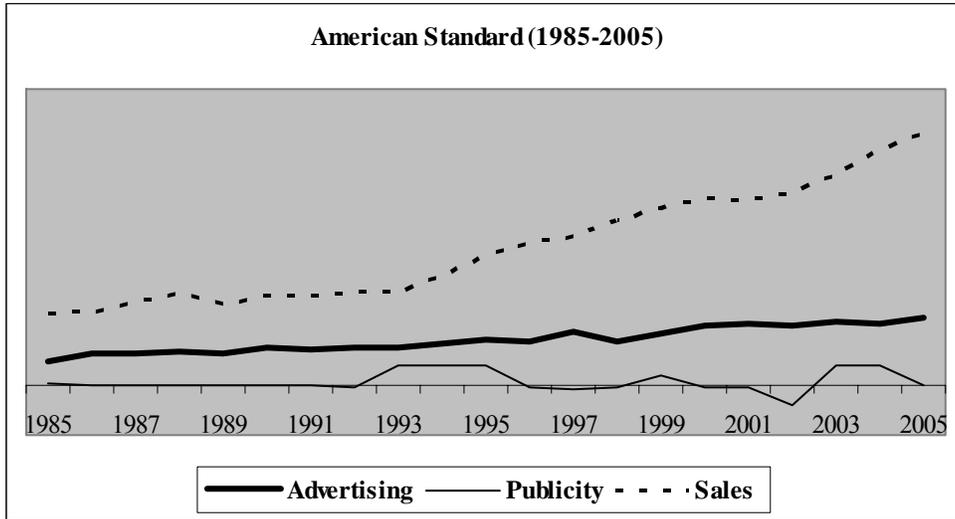
Kimberly Clark (1985-2005)

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

PPG Industries (1985-2005)

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.
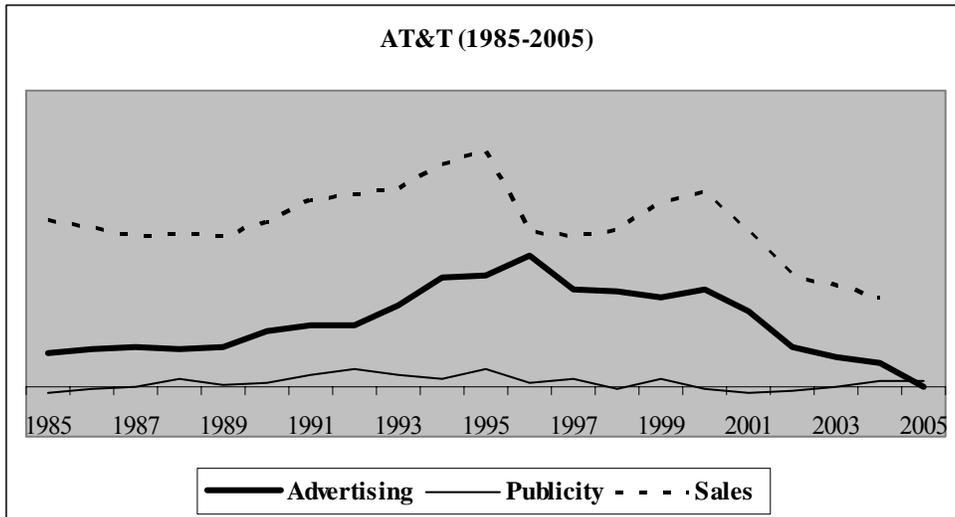
Pfizer (1985-2005)

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

Proctor & Gamble (1985-2005)

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

Sara Lee (1985-2005)

Legend: Advertising — Publicity - - - Reputation

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

Stanley Works (1985-2005)
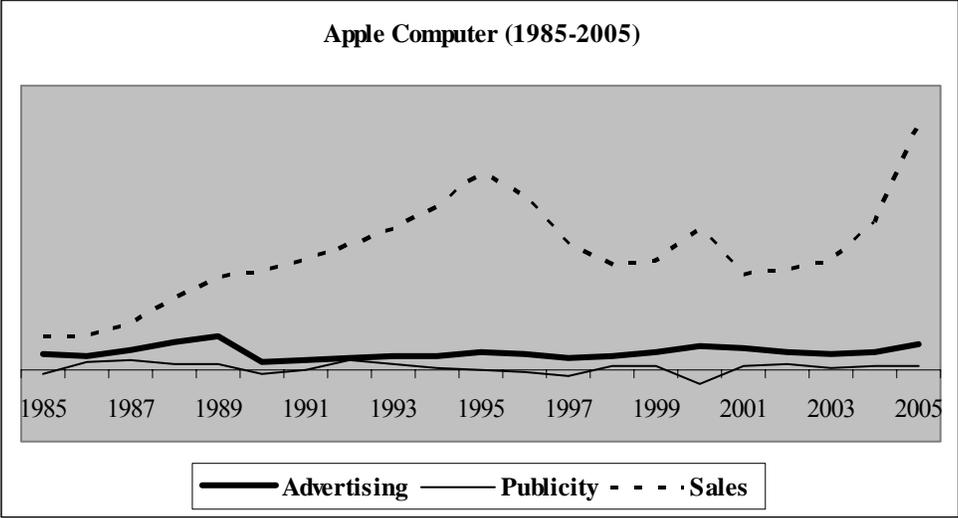
Legend: Advertising — Publicity - - - Reputation
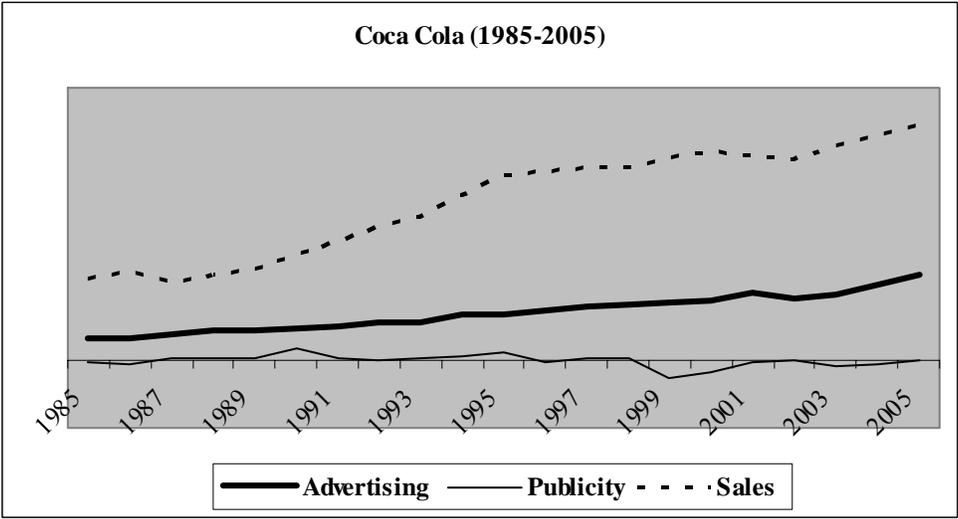
Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

Texas Instruments (1985-2005)
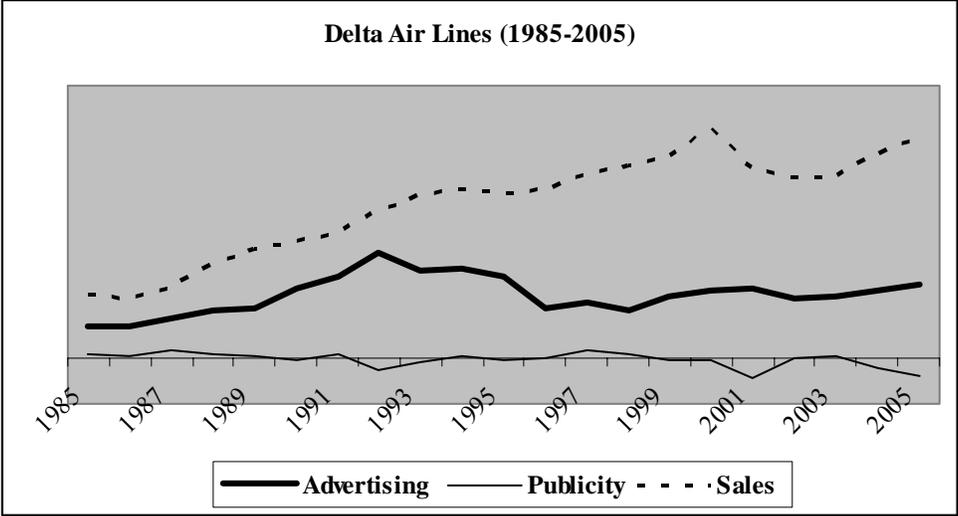

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

United States Tobacco (1985-2005)

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

VF Corp. (1985-2005)

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

Vulcan Materials (1985-2005)
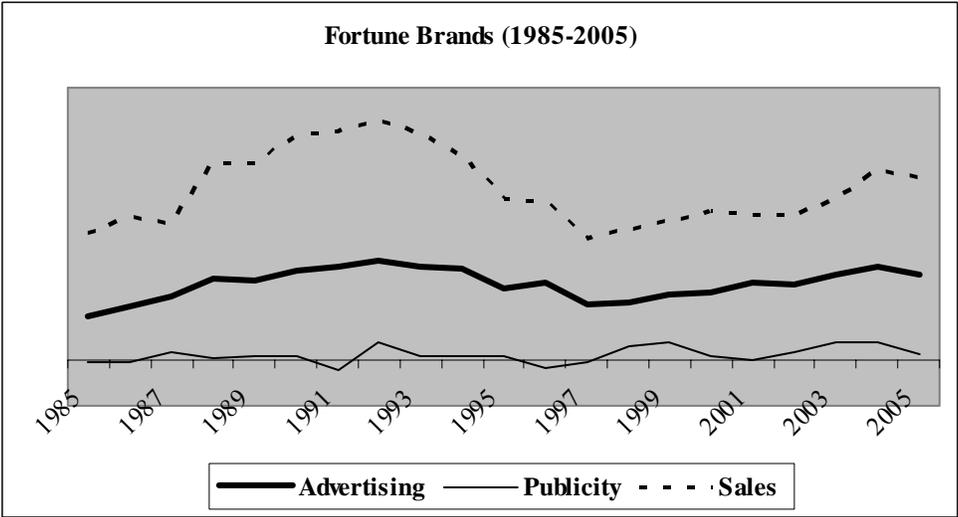

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

Appendix B (Cont)

VISUAL INFORMATION
(ADVERTISING, PUBLICITY, AND CORPORATE REPUTATION)

American Standard (1985-2005)

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

AT&T (1985-2005)

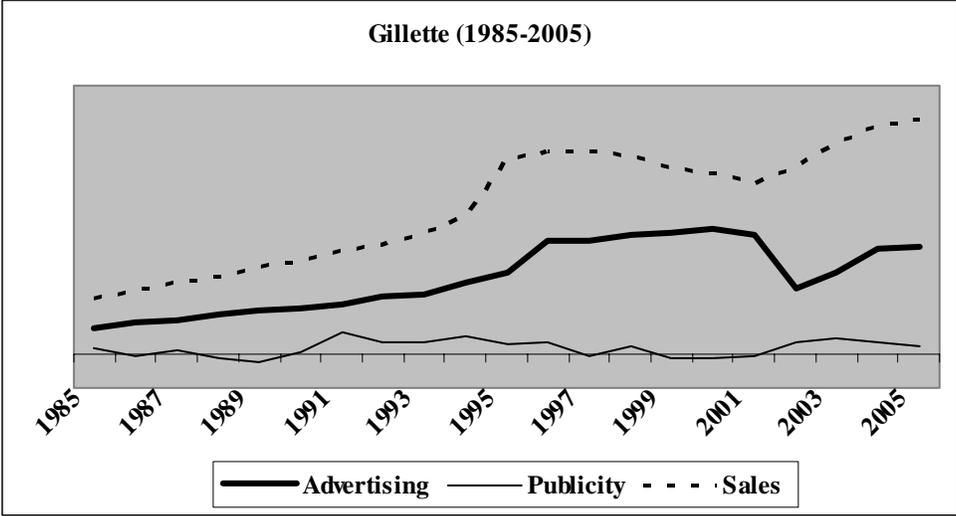

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

Apple Computer (1985-2005)

1985 1987 1989 1991 1993 1995 1997 1999 2001 2003 2005
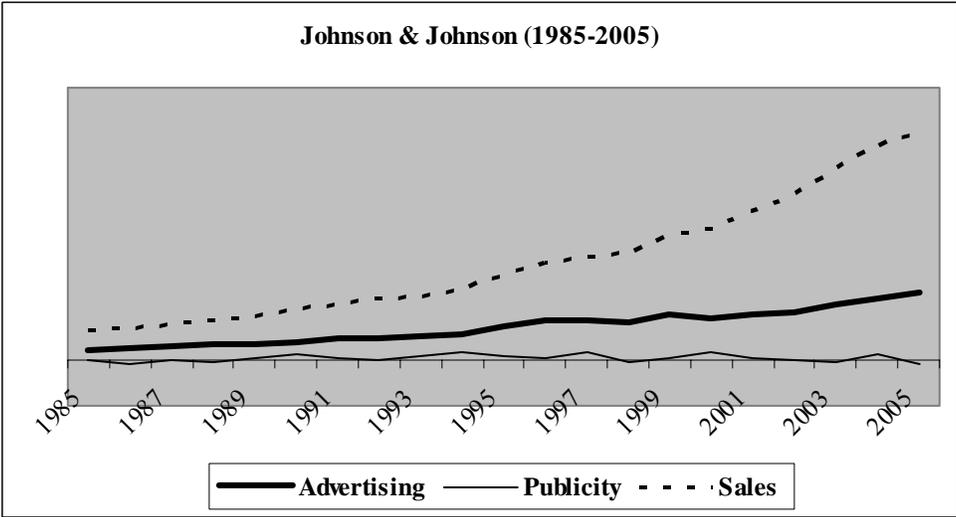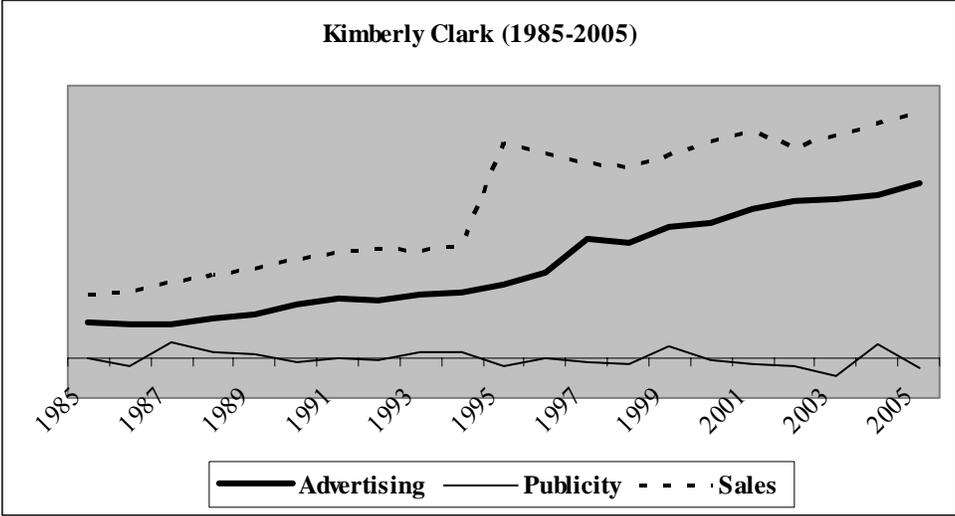
Advertising —— **Publicity** - - - **Sales**

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

Coca Cola (1985-2005)

1985 1987 1989 1991 1993 1995 1997 1999 2001 2003 2005

Advertising —— **Publicity** - - - **Sales**

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.
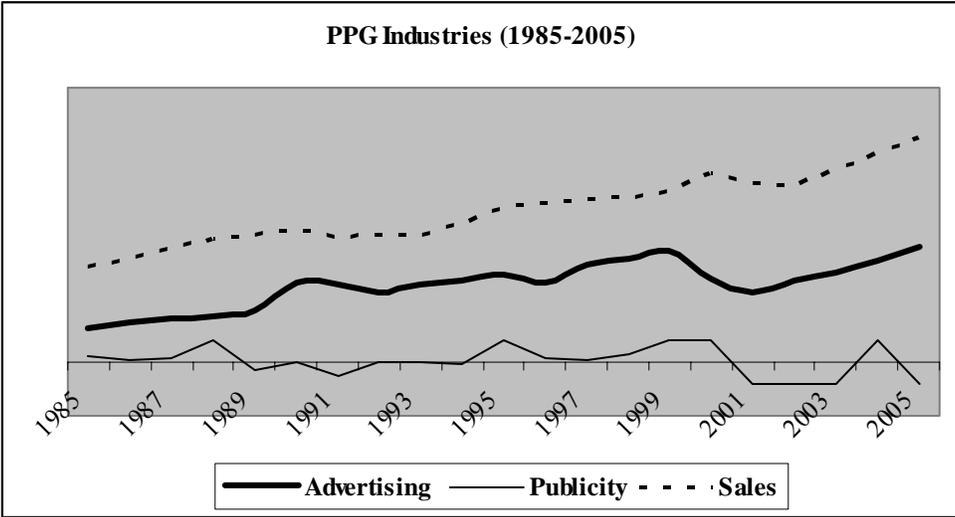
Delta Air Lines (1985-2005)

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

Fortune Brands (1985-2005)

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

Gillette (1985-2005)

Advertising ——— **Publicity** - - - **Sales**
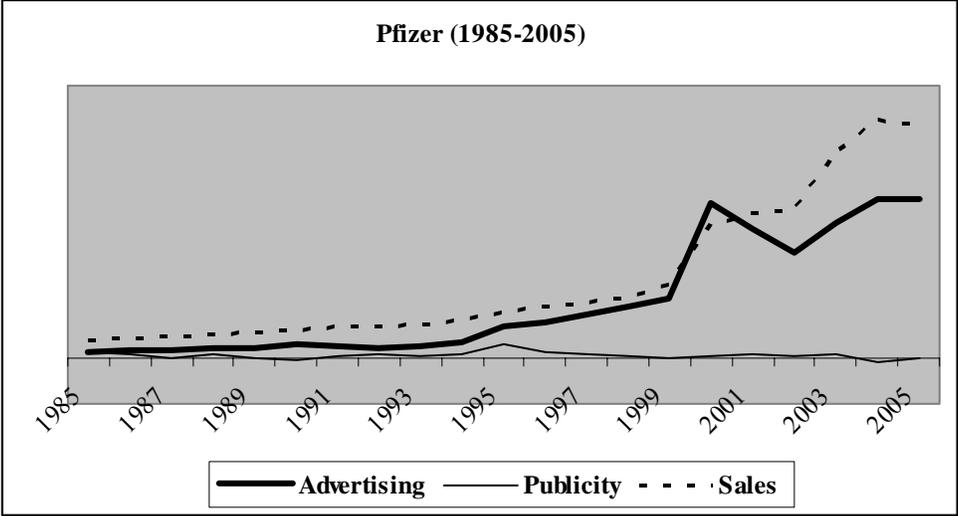
Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

Johnson & Johnson (1985-2005)

Advertising ——— **Publicity** - - - **Sales**

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

Kimberly Clark (1985-2005)
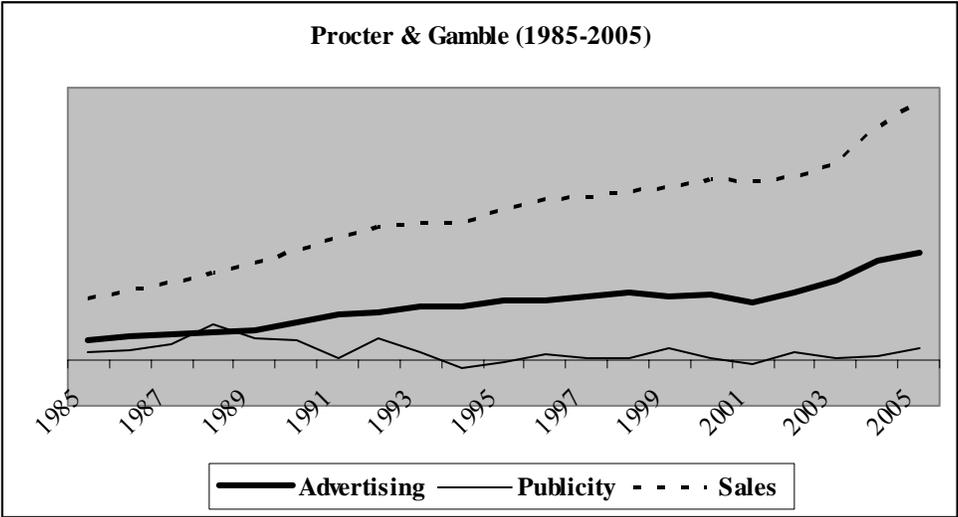

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

PPG Industries (1985-2005)

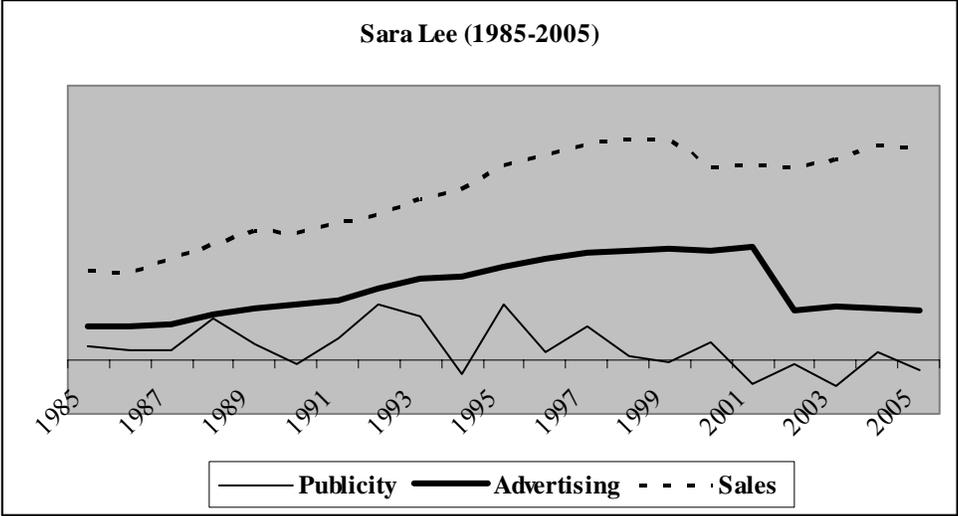
Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

Pfizer (1985-2005)

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

Procter & Gamble (1985-2005)
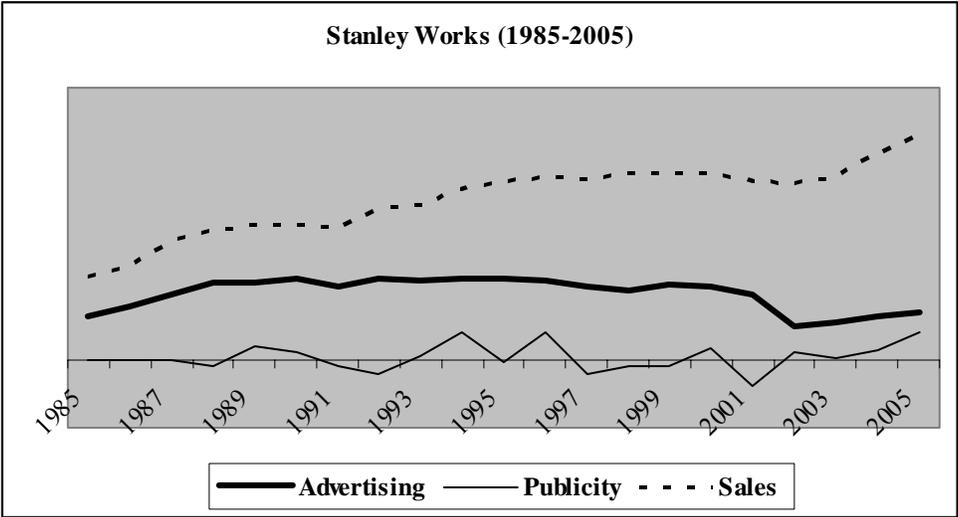

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

Sara Lee (1985-2005)

| — Publicity | ▬▬ Advertising | - - - Sales |

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

Stanley Works (1985-2005)

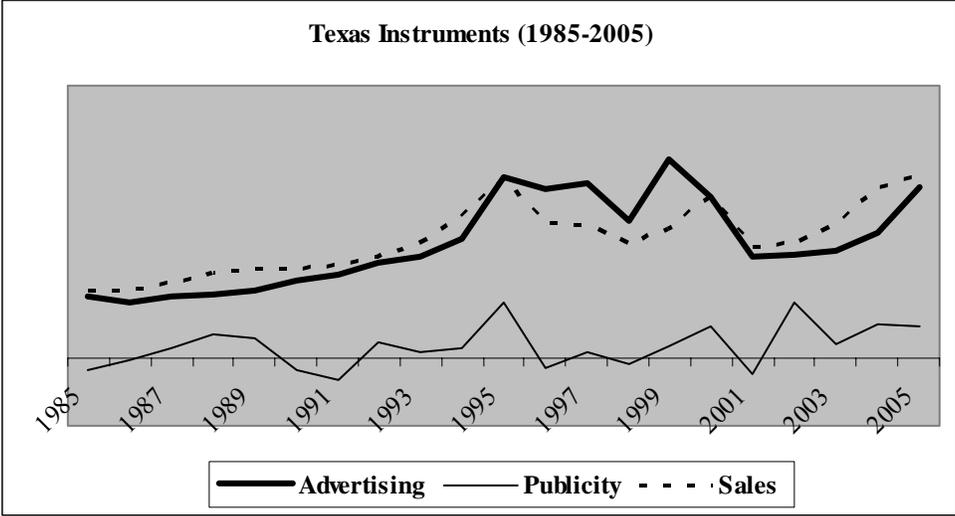| ▬▬ Advertising | — Publicity | - - - Sales |

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

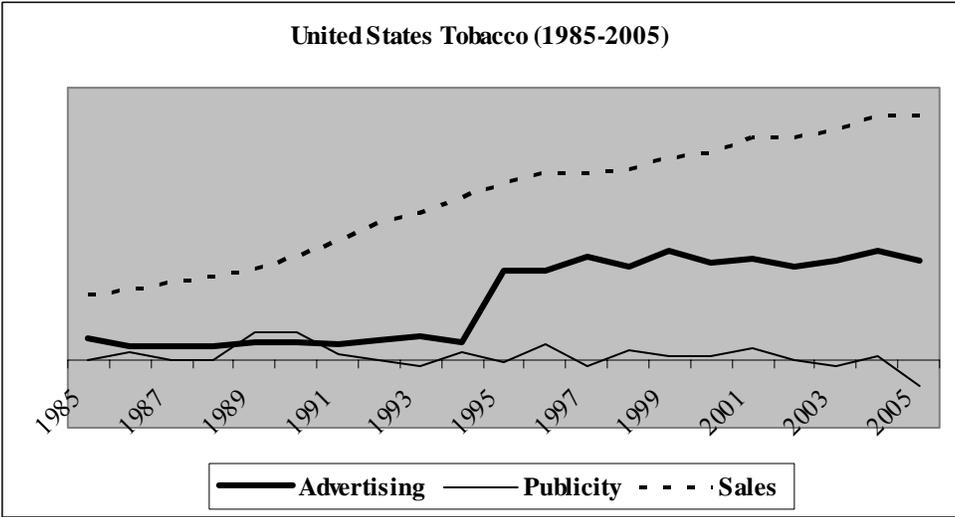**Texas Instruments (1985-2005)**

Legend: —— Advertising —— Publicity - - - Sales

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

United States Tobacco (1985-2005)

Legend: —— Advertising —— Publicity - - - Sales

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.
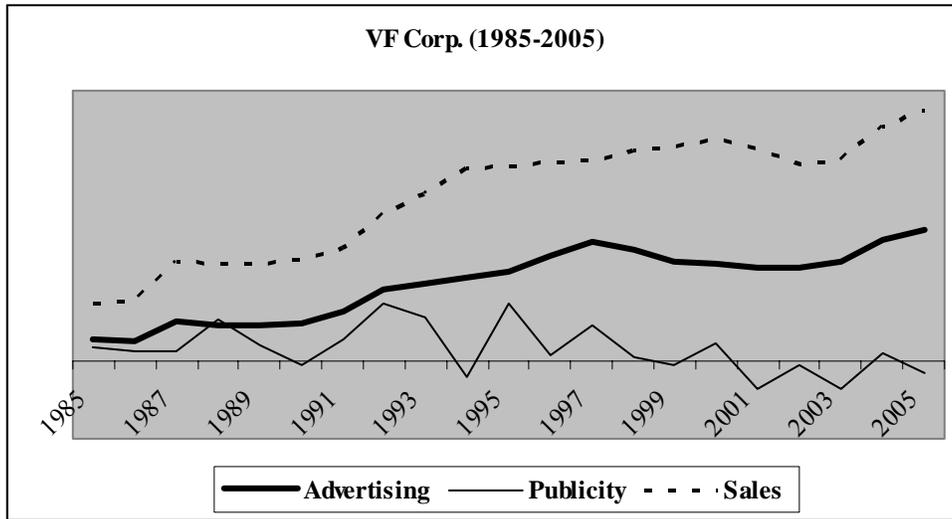
VF Corp. (1985-2005)

Advertising ——— Publicity - - - Sales

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.

Vulcan Materials (1985-2005)

Advertising ——— Publicity - - - Sales

Note: in case of publicity, above the line (+) refers to favorable publicity and below the line (-) refers to unfavorable publicity.
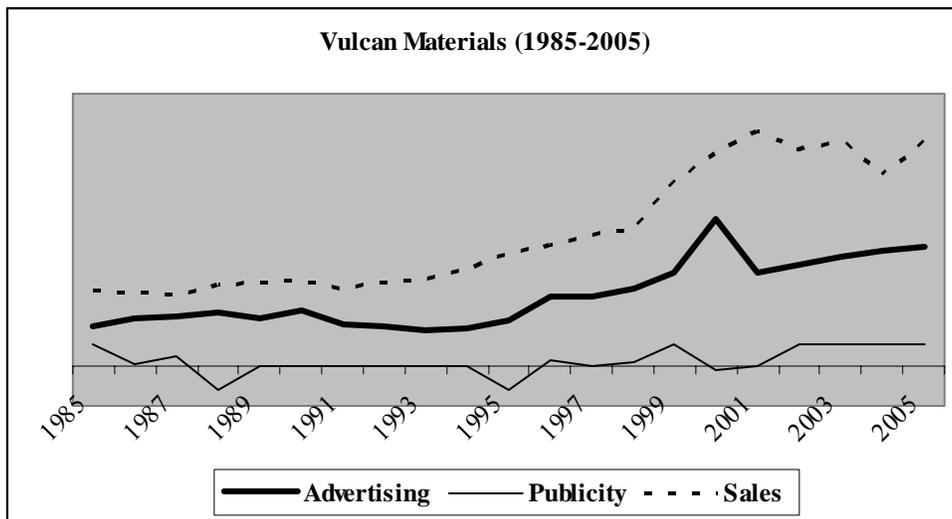
184

Appendix C

DATA TRANSFORMATION

Data Transformations for Corporate Reputation Model

$$CR_{it} = \alpha + B_1\, AD_{it-1} + B_2\, PB_{it} + B_3\, DY_t + B_4\, MB_{it} + B_5\, DV_{it-1} + B_6\, PF_{it-1} + B_7\, FS_{it} + e_{it}$$

Company	Advertising	Publicity	Dividend Yield	M/B Ratio	Diversification	Profit	Firm Size
American Standard	Logarithmic	Original	Original	Logarithmic	Original	Original	Logarithmic
AT&T	Logarithmic	Original	Original	Original	Original	Original	Original
Apple Computer	Original	Original	Original	Original	Original	Original	Original
Coca Cola	Original	Original	Logarithmic	Original	Logarithmic	Original	Original
Delta Air Lines	Logarithmic	Original	Logarithmic	Original	Original	Logarithmic	Original
Fortune Brands	Original	Original	Original/log	Logarithmic	Logarithmic	Original	Logarithmic
Gillette	Original	Original	Original	Logarithmic	Original	Original	Original
Johnson & Johnson	Original	Original	Original	Original	Original	Original	Original
Kimberly Clark	Original	Original	Original	Original	Original	Original	Original
PPG Industries	Original	Original	Original	Original	Original	Original	Original
Pfizer	Original	Original	Original	Original	Original	Original	Original
Procter & Gamble	Original	Original	Logarithmic	Logarithmic	Original	Original	Original
Sara Lee	Original	Original	Original	Logarithmic	Original	Original	Original
Stanley Works	Original	Logarithmic	Original	Logarithmic	Original	Original	Original
Texas Instruments	Original	Original	Original	Logarithmic	Original	Original	Original
UST Inc.	Original	Original	Original	Original	Logarithmic	Original	Original
VF Corp.	Original	Original	Original	Original	Original	Original	Original
Vulcan Materials	Original	Original	Original	Original	Original	Original	Logarithmic

Data Transformation for Sales Revenue Model

$$SR_{it} = \alpha + B_1\,AD_{it-1} + B_2\,PB_{it} + B_3\,CR_{it-1} + B_4\,RD_{it-1} + B_5\,FF_{it} + B_6\,FS_{it} + e_{it}$$

Company	Advertising	Publicity	R&D	Focus of the Firm	Firm Size
American Standard	Original	Original	Original	Original	Original
AT&T	Original	Original	Original	Original	Original
Apple Computer	Logarithmic	Logarithmic	Original	Original	Original
Coca Cola	Logarithmic	Original	Original	Original	Original
Delta Air Lines	Logarithmic	Original	Original	Logarithmic	Original
Fortune Brands	Original	Logarithmic	Original	Original	Logarithmic
Gillette	Logarithmic	Original	Original	Original	Logarithmic
Johnson & Johnson	Original	Logarithmic	Logarithmic	Original	Original
Kimberly Clark	Original	Original	Original	Logarithmic	Original
PPG Industries	Original	Logarithmic	Logarithmic	Original	Original
Pfizer	Original	Logarithmic	Original	Original	Original
Procter & Gamble	Original	Original	Original	Original	Original
Sara Lee	Original	Original	Original	Original	Original
Stanley Works	Original	Logarithmic	Original	Original	Original
Texas Instruments	Logarithmic	Original	Original	Original	Original
UST Inc.	Original	Original	Original	Original	Original
VF Corp.	Original	Original	Logarithmic	Original	Original
Vulcan Materials	Original	Original	Original	Original	Original

Note: Data transformation was determined in terms of the increase in R^2 and the redistribution of points along both sides of the fit line.

Appendix D

SURBEY METHODOLOGY – THE REPUTATION INSTITUTE

The study was carried out in two phases: a nominations phase, from March to June, 2005, and a ratings phase, from Aug. 30 to Sept. 26, 2005.

In the nominations phase, Harris Interactive conducted 6,977 interviews throughout the U.S., using a combined online and telephone methodology. The online respondents were randomly selected from the Harris Interactive online panel. All respondents were asked to nominate two companies that they feel have the best reputations overall and two companies that they feel have the worst reputations overall. Nominations were open-ended, and all responses were tallied, placing subsidiaries and brand names within the parent company.

By totaling the mentions for best and worst companies provided during the nominations phase, Harris Interactive identified the list of 60 most visible companies in the U.S. to be measured in the ratings phase.

In the ratings phase, 19,564 respondents were randomly selected to complete a detailed rating of one or two companies with which they were "very or somewhat familiar." All interviews were conducted online. Respondents rated companies on 20 attributes in the six key dimensions of the Harris-Fombrun Reputation Quotient (RQ), including products and services, financial performance, workplace environment, social responsibility, vision and leadership, and emotional appeal. After the first company rating was completed, a respondent was given the option to rate a second company.

Each of the 60 companies was rated by at least 253 people; the average number of respondents per company was 650. All data were weighted to be representative of the U.S. adult population. Weighting variables for this study included demographic variables (i.e., age, sex, education, race, ethnicity, household income and region) and some non-demographic variables to project findings to the U.S. adult population.

Finally, reputation quotient (RQ) figures were calculated for each company to determine the rankings. Each company's RQ is based on the respondents' ratings of each company on the 20 attributes. RQs are calculated by summing the ratings

on the individual RQ attributes, dividing by the total possible score (i.e., 7 x the total number of attributes answered) and multiplying by 100. The highest possible score is 100. In comparing any two RQ scores, a t-test was used to determine statistically significant differences at a confidence level of 95%.

Source: http://www.reputationinstitute.com/main/home.php

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