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The joint impact of brand value and advertising on corporate financial performance and on stock return: A case study of the computer industry

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ABSTRACT

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by

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M. B. A., Regis University, Denver, 2005
B.S., College of Agriculture, Ibadan, 1995

Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree of
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ABSTRACT

Firm's advertising and marketing expenditures do not always translate to measurable financial returns. Understanding brand value appropriation and financial consequences of advertising is important for more focused investments in branding and marketing. This quantitative study sought to understand the joint effects of advertising expenditure and brand value (BV) on firms return on assets (ROA) and on stock return (SR) in the computer industry. The theoretical framework of the study was the resource-based view theory that proposes that the intangible assets of a corporation have a direct relationship to its ability to sustain its competitive advantage. The key research question involved the joint and positive effect of a firm's advertising expenditure and brand value on return on assets and on stock return. The research design was a non randomized cross sectional study. The data consisted of advertising expenditures and brand value of 17 firms listed on the Interbrand annual global brand list from 2000 to 2007, ROA and SR extracted from each firms 10K and Morningstar financial report. The study used panel data modeling and time series of cross section analysis. Results showed positive correlation between ROA and BV, and between AER and BV. The association between brand value and ROA, even after accounting for the effect of advertising expenditure and the interaction effect between brand value and advertising expenditure, was statistically significant. Further research is needed to confirm the findings. Effective marketing increases firms' profitability. Profitable firms contribute more to causes that drive social changes in the areas of education, healthcare and food sustainability.

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DEDICATION

To Ikechi, Ure, and Michelle - may you all never lose your sense of wonder and taste for knowledge. Above all, i hope you all will consider taking this path someday.

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CHAPTER 1:

INTRODUCTION TO THE STUDY

Overview

According to Aaker (1991), the most important assets of a company are the intangible assets. The problem; however, in measuring the effectiveness of intangible assets is that the latter are usually not capitalized and do not usually appear in a company's balance sheet and financial statements (Aaker, 1991). Over the last decade, companies have become more and more aware of the importance of strengthening their intangible assets. In the past, building and strengthening company value was all about focusing on its tangible assets such as physical assets like land or buildings, or capital funds and investments.

> The predominant thinking of the world's most successful brand builders these days is not so much the old game of reach (how many customers see my ad?) and frequency (how often do they see it?), but rather finding ways to get customers to invite brands into their lives. (BusinessWeek, 2005)

The emergence of the concept of brand management has placed the brand valuation, possibly the most significant intangible asset for a company, into the spotlight. As a result, companies have invested more and more on advertising, marketing, and promotional activities in order to create brand equity not only for their products but also for their company as a whole (Herreman, Ryan, and Aggarwal, 2000) . Advertising, in particular, has been the most popular business strategy selected by companies in their efforts to create brand value (Jacobson, 2008).

In this study, the researcher examined the relationship between advertising and intangible assets of a company, particularly brand value. The research used brand values developed by Interbrand Corporation and published in Business Week's annual list of 100 Best Global Brands to compute a company's advertising turnover in relation to its advertising expenditures. This paper adopted Herremans, Ryans, and Aggarwal's (2000) formula for the computation of advertising turnover to further understand the relationship between brand value and advertising expenditures.

Statement of the Problem

Research on concrete measure of brand value appropriation and financial consequences of advertising and brand value is limited. Mizik and Jacobson (2008) submitted that marketing managers are under increasing pressure to justify advertising and marketing expenditures. Quantifying the returns to advertising and marketing activities in financial terms is one of the greatest challenges facing marketing, brand managers and corporations. According to Rust et al. (2004, p. 76), marketing managers have not been held accountable to demonstrate the effect of advertising and marketing on shareholder value. Similarly, this lack of accountability has undermined marketers' credibility, threatened the standing of the marketing function within the firm, and even threatened marketing's existence as a distinct capability within the firm. (Rust et al., 2004, p. 76)

The marketing decisions of a company can have serious implications on the company's operational and its financial performance. Marketing expenditures accounts for a significant component of a corporation cost structure (Eng and Keh, 2007). Yet,

despite such expenditures, there has been a notable lack of literature as to the effectiveness and efficiency of these expenditures on the company's financial bottom line (Herremans, Ryans, & Aggarwal, 2000). In this study, the researcher will examine the joint effects of advertising and brand value on firm's financial performance, specifically, return on assets (ROA) and on its stock return.

Nature of the study

Research Objectives

The dissertation will have the following research objectives:

1. To understand the relationship between an organizations internal and intangible resources and its ability to sustain its company's competitive advantage over a long period.
2. To discuss the relevance of brand value to the success and longevity of a company, particularly with regard to its operational and financial performance through ROA and stock return
3. To examine the joint effects of advertising and brand value on firms return on assets and stock return.

Research Questions and Hypotheses

RBV theory is the foundational basis for the main research question of this study:

I. Is there a joint effect of a company's advertising expenditure and brand value on return on assets?"

However, return on assets is an accounting measure of profitability and a company's success. Shareholders of the company are interested in the return on their

investments in the stock of the company. Therefore, the corollary research question, in relation to the research questions stated above is as follows:

II. Is there a joint effect of a company's advertising expenditure and brand value on its stock return?"

Following the above-presented research questions, the researcher then proposes to test the following research hypotheses:

Hypothesis 1: Advertisement expenditure and brand value are jointly and positively associated with return on assets.

Berkowitz, Allaway, and D'Souza (2001a, 2001b) demonstrated that advertising has a lagging effect. This lagging effect can last up to 3 to 4years (Abraham & Lodish, 1990; Lodish et al., 1995; Naik 1999); similarly, Eng and Keh (2007) used a model that lasted for 4 years. Consistent with Rao (1972), Srinivasan and Weir (1988) and Stafford, Lippold, and Sherron (2003), this paper used the current effects regression model to specify the lag structure. According to Saunders (1987), this model functions as well as the more complex ones. The underlying regression equation for hypothesis 1 is:

$$RY_{it} = \alpha + \beta_1 BV_{it} + \beta_2 AER_{i(t-j)} + \beta_3 (BV_f t * AER_{i(t-j)}) + e_t$$

Where RY_{it} = ROA in year *t* for a firm *i*, where i=1, 2, 3….17 and *t* = 1, 2, 3….7

BV_{it} is the brand value at time *t* for firm *f* and $AER_{i(t-j)}$ is adverting expenditure at time t-j where j =1, 2, 3….to 7.

The null and alternate hypotheses to be tested are:

$H_0 : \beta = 0$
$H_1 : \beta > 0$

The researcher will use one-tail *t* test to test hypothesis 1.

Because adverting has carry over effects over time, to test hypothesis 1 for each year *t*, the brand values and advertising expenditure of the sample firms are regressed against their return on assets first with 0 time lag and then with one year, two years, and all the possible time lags. Therefore for the year 2000 brand values and advertising expenditure of sample companies are regressed against their return on assets with no time lag, for year 2001, both zero and 1 year time lags are regressed, for year 2002 with zero, one year, and two years time lags, and so on. The joint effects of advertising expenditure and brand value on return on assets from the result of the hypothesis test. This researcher will tabulate the information obtained from this test of hypothesis to find out the pattern of joint advertising and brand effects on return on assets through time.

Hypothesis 2: Advertising expenditure and brand value is jointly and positively associated with firms' stock return.

The researcher will use the following regression model to test the effect of brand value and advertising on stock return:

$$SR_{it} = \alpha + \beta_1 BV_{it} + \beta_2 AER_{i(t-j)} + \beta_3 (BV_{ft} * AER_{i(t-j)}) + e_t$$

Where:

SR_{ft} = Stock return, $\{$ $(MktCap_{ft} - MktCap_{f(t-1)} + TD_{ft}) / MktCap_{f(t-1)}$, percentage return on the stock of the company

($MktCap_{ft}$, market capitalization of firm *f* at time *t*

$MktCap_{f(t-1)}$, market capitalization of firm *f* at time *t-1*

TD_{ft}, total dividends paid by firm *f* at time *t*

$BV_{f(t-i)}$ = brand value in year $t-i$; i = 0, 1, 2, 3.....to 7

$AER_{f(t-j)}$ is adverting expenditure at time t-j where j =1, 2, 3….to 7.

The null and alternate hypotheses to be tested are;

$$H_0 : \beta = 0$$
$$H_1 : \beta > 0$$

The researcher will use one-tail *t* test to test hypothesis 2.

Brand values and advertising expenditures of the sample firms will be regressed against their stock return, starting with 0 time lags to 6 years time lag. The joint effect of advertising expenditure and brand value on stock return will be determined from the

hypothesis test result. This researcher will tabulate the information obtained from this test of hypothesis to find out the pattern of the joint effects on stock return through time.

Purpose of the Study

In investing time and resources, businesses benefit from identifying areas that represent the greatest potential value for their products (Wyner, 2004). Examination of brand drivers and how brand affects consumer attitudes and behavior is critical in understanding brand equity (Cobb-Walgren, Ruble, & Donthu, 1996). In their study, Eng and Keh (2007) showed that brand value creation is a key element for the success of any corporation. However, there is a need to recognize that merely spending money to build or create brand value does not necessarily result in positive and long-term effects on corporate operational and financial performance (Eng & Keh, 2007). The focus of this quantitative study is to conduct eight cross-sectional, observational study of all PC related corporations listed in the annual Interbrand /BusinessWeek global brand report for the years 2000 through 2007.

There is a need to identify more concrete measures of brand value appropriation to show the financial benefit of brand value for a company (Cobb-Walgren, Ruble, & Donthu, 1996). The researcher will examine the joint effects of advertising expenditures and brand value on return on assets and stock return.

Theoretical basis of the study

This paper used published data, with no requirement for manipulation or control by the researcher, to test the theory of Resourced-Based Review (RVB) strategy. This theory pertains to the company's reputation quotient and brand value, in relation to the company's return on assets. This study; however, veered a way from the standard RVB strategy in that it did not seek to examine a company's reputation quotient. The RVB strategy was the framework for the test of hypotheses in this study. Central to the RVB approach is the theory that firm growth is equally sustained by a company's internal characteristics (in addition to its external characteristics) (Penrose, 1959). Thus, brand value is one of the internal characteristics which this dissertation proposes as a key intangible asset for a corporation's growth sustainability.

Advertising spending has a positive effect on the creation of brand value for a carryover period of up to three to four years (Eng & Keh, 2007). Brand-based advertising also creates a comparative advantage for companies since it provides for product differentiation and prevents competitor entry. Advertising turnover can measure the effectiveness and efficiency of conversion of advertising expenditure to positive and long-term brand value for a corporation (Herremans, Ryans, & Aggarwal, 2000).

Definition of Terms

Advertising turnover: This is the ratio of brand value to advertising expense, it is used to convey the relationship of advertising expenditures to a product's brand value

and how effective and efficiently a company has been able to convert its advertising spending into positive brand value (Herremans et al., 2000).

Brand: A name, symbol, design, or mark that enhances the value of a product beyond its functional value (Farquhar, 1989, p. 24).

Brand equity: A brand's capacity to generate a future value stream, either through its ability to extract a premium price from consumers, or through its ability to attract capital, or otherwise facilitate relations with interested parties (Arvidsson, 2006, p. 189). It is the values add that a brand adds to a product (Aaker, 1991).

Brand value: "In financial terms, the value of a brand, like the value of any asset, is determined by assessing the present value of future returns associated with that asset" (Herremans et al., 2000, p. 21). Taken from this view, "returns" is interpreted as the cash flows or operating income of the company (Herremans et al., 2000)

Conjoint analysis: A multivariate technique that determines the relative importance of a product's multidimensional attributes (Cobb-Walgren, Ruble, & Donthu, 1996, p. 32).

Consumer-based brand equity: Also known as customer-based brand equity. This is the set of associations or attitudes that consumers have in relation to the brand, and that contribute its value for them (Arvidsson, 2006, p. 189).

Hierarchy of Effects Model: A framework for understanding the antecedents and consequences of brand equity from the perspective of the individual consumer by examining the latter's perceptions as to the physical and psychological features of a brand based on various information sources (Cobb-Walgren, Ruble, & Donthu, 1996).

Original Equipment Manufacturer (OEM): An OEM is a firm that supplies equipment to other companies to resell or incorporate into another product using the reseller's brand name. (Whatis.com, 2008)

Product: Something that offers a functional benefit (Farquhar, 1989, p. 24).

Pure PC OEM: Corporations that derive 80% or more of their revenue from the manufacturing and sale of computer products and services (Intel Corporation, 2008).

Return on Asset (ROA): As an accounting measure of profitability, ROA is the ratio of net income to total asset. ROA is a backward looking indicator of performance (Eng & Keh, 2007)

Stock Return: Stock return is the percentage change in market value (Mizik & Jacobson, 2008)

Strongly branded companies: Companies owning brands that represent significant market leadership or dominance in a market segment. Also known as "mega brands," these brands are instantly recognizable and perceived favorably by consumers across the world (Cravens & Guilding, 2000, p. 28).

Scope and Limitations of the Study

The study used a resource-based view (RBV) approach to understand the joint effects of a company's brand value (intangible asset) and advertising expense on return on asset (ROA) and stock return. Sampling was non randomized, the research used corporate brand values of all PC related firms published in BusinessWeek's Best Global Brands listings from 2000 to 2007 and advertising expenditures from 10K's and 10Q's of

these firms. Nielsen Media monitors and Adage were secondary data sources for advertising expenditures. Advertising expense and brand value are regressed against return on assets and stock return trends to determine relationship between the variables.

The study focused on marketing and advertising as the two components to measure operational and financial performance of a company. Other management components and other measures of performance were not used, particularly those components which pertain more to the accounting aspects of financial performance. To measure the effects of advertising expenditures on the creation of brand value, without the influences from other business activities and strategies of a company, advertising expenditures are analyzed independently and separately from other components of a company. One limitation of this study is the inability to verify the brand value computations by Interbrand. Hence, calculation of the brand values will not be part of this study. Sampling is also non-randomized.

There are several brand value sources, such as *Interbrand/BusinessWeek*, *Millward Brown, Corebrand, and Financial World*. This study will use data only from the Interbarnd/Business*W*eek annual Global brand list, this is the most widely known and have accurately predicted both S&P 500 Index and MSCI World Index. Soh, M. (2005) also used the Interbrand data. In addition to the 10K and 10Q's, this study will also use Nielsen Media monitors and Adage as secondary data sources for advertising expense for all firms.

Significance of the Study

There is a lack of research on the effectiveness and efficiency of a company's marketing and advertising expenditures in creating brand value. Brand value, as one of the key intangible assets of a company, has significant impact on the perception of the company and product by its customers, competitors, and the public in general. According to Eng and Keh, (2007), brand value creation is a good thing. However, a mere knowledge of the effect of brand value on purchase intent is inadequate (Cobb-Walgren, Ruble, & Donthu 1995). Greater understanding of the financial implications of brand value (Chu & Keh, 2006) and a concrete measure of brand value appropriation (financial benefit from brand value) is important.

Triangulation of advertising expense, brand value, and financial return is important to management for long term strategic planning and sustainability. In order to link profitability and accountability, marketing should be more financially accountable (Srivastava, Shervani, & Fahey,1998). Consequently, this paper examined the joint effects between of advertising expense and brand value on return on assets and stock return.

Corporations have ignored the financial implications of marketing decisions and this is a serious form of marketing myopia (Anderson, 1982). Similarly, although marketing expense accounts for significant component of a corporations cost structure, there have not been serious efforts in addressing marketing efficiency, resulting in significant gap between the usefulness of information from the accounting systems and information useful for marketing decisions (Herremans, Ryans, & Aggarwal, 2000).

Consistent with corporations' strategic intent of maximizing shareholders wealth, this paper intends to bridge the knowledge gap by examining the financial return on investment of advertising dollars, first through the relationship between advertising expenditures and brand value; and then the relationship between brand value and corporate performance – return on assets.

Summary

There has been a growing awareness among companies for the need to strengthen their intangible and internal resources or assets. Brand value has emerged as one of the most significant, if not the most relevant, intangible asset of a company (Herremans, Ryans, & Aggarwal, 2000). Yet spending on marketing or advertising in order to create or strengthen brand value does not necessarily translate to higher return on assets or investments for a company (Eng & Keh, 2007). It does not necessarily mean sustained growth for the company; as such returns may be short-term.

Chapter 1 described the research objectives and background of the problem for this study. The dissertation sought to understand the relationship between a corporation's intangible resources and its ability to sustain its competitive advantage over a long period. Based on such a basic framework, the study then proposed to examine the joint effects of advertising and brand value on return on assets and stock return.

Chapter 2 presents a comprehensive literature review that includes case studies. Brand value connotes awareness among consumers and the company's communication efforts. It is an intangible asset or an added value to a company that may not be easily measured using traditional matrixes or formulas normally utilized for tangible assets.

Chapter 2 of this paper covered the concept of brand value and how it involves a sharing of mind among consumers and customers on a global scale, such that a shared idea of what a brand represents on a global level goes a long way in strengthening and sustaining a brand's reputation and competitive edge. Various case studies discussed in this chapter further lend weight to the proposition that brand value is as an intangible asset, is very important to the long term sustainability of a firm.

Chapter 3 describes the methodology of the study, mainly from the resource based view theory. The researcher used quantitative research method to show the correlation and statistical analysis of the data, mainly using the methods of multiple regression, descriptive statistics, Pearson correlation coefficient, and test of statistics. Advertising turnover is examined to understand the relationship between advertising expenditures and brand value. The researcher extracted corporate brand value of all PC based firms listed on the Interbrand/ Business Week's Best Global Brands listing from 2000 to 2007 for the study.

Chapter 4 describes the results and the statistical methodologies used in the study. The first section covers the research questions and hypotheses, followed by the description of the research and statistical techniques employed. Second part of this section covers presentation and analysis of results. The researcher also used descriptive and inferential statistics to answer the original research questions through the test of hypothesis stated in prior chapters. Chapter 4 concluded with a summary of the results and a brief preview of chapter 5.

Chapter 5 summarized the research findings presented in chapter 4. This is Followed by the summary is the research purpose, research questions and related hypothesis. The researcher presented detailed interpretation of the results, key conclusions and recommendations.

CHAPTER 2:

LITERATURE REVIEW

"Factories rust away, packages become obsolete, products lose their relevance. But great brands live forever." (Becker Spielvogel Bates, cited by Cobb-Walgren, Ruble, & Donthu, 1996)

Corporate value is "determined by what the organization might be worth in the future, not what it was worth in the past" (Schultz, 2002, p. 8). Schultz argued that estimating future cash flows and income is a better way of valuing a company. A value-based approach in analyzing organizational performance helps to determine the future value of an organization. The value-based framework is commonly analyzed in line with what is called the economic value added to an organization wherein the future of the organization is determined by its customers and consumers, income flows and market share, and brand investments and returns. These intangible assets, as largely directed by marketing, branding, and sales strategies by an organization, will dictate how an organization is valued in the future (Schultz, 2002).

As such, Schultz raised these fundamental questions:

1. How can an organization value brands?
2. How can organizations determine customer value?
3. How can organizations estimate future income flows from customers or consumers?

Marketing, branding, and sales strategies of an organization would thus greatly benefit from adapting a value-based approach. The relationship of brand value and brand

financial returns thus becomes crucial in determining the future of an organization (Schultz, 2002).

Most brand valuation methodologies focus on measuring the increased financial returns that a brand generates for the organization (Schultz, 2004). The knowledge created about the brand in the customers' minds from the organization's investment in previous marketing programs is perhaps one of the most valuable assets of a company for improving its marketing productivity (Keller, 1993).

Brand Equity

Consumers often use the terms product and brand interchangeably, but in the realm of brand management, there are important distinctions between these two concepts. A product is "something that offers a functional benefit" (Farquhar, 1989, p. 24). On the other hand, a brand is "a name, symbol, design, or mark that enhances the value of a product beyond its functional value (Farquhar, 1989, p. 24). Take the case of the Quaker Oats brand, for instance. Quaker Oats oatmeal is essentially a commodity product, but the Quaker Oats brand has resulted in the price of the product to be 3,000% higher than the price of its basic ingredient in 1991, despite the fact that oats are commodity products and the wholesale price of which decreased by 33 percent between 1980 and 1990 (Morgenson, 1991). What carried Quaker Oats forward was not the product itself, but the brand. The reason behind this is that brand names add value to the product.

Aaker (1991) described the relevance of a brand name to a product as follows:

> The name is the basic indicator of the brand, the basis for both awareness and communication efforts. Often even more important is the fact that it can generate associations that serve to describe the brand – what it is and

> does. In other words, the name can actually form the essence of the brand concept. (p. 187)

The management of a brand, or brand management has evolved beyond the traditional notion that advertising was the only avenue in order to engage a consumer and to allow the latter to experience the brand. For instance, trademark laws have traditionally focused on making sure that brands were distinct enough to avoid confusion to the consumer as to the origins of a particular branded product (Arvidsson, 2006). Arvidsson also submitted that infringement typically occurs when a branded product is confusingly similar with another branded product, even if the two products and the marks they use are entirely distinct.

In more recent times, there have been increasing efforts to experience a brand outside of the actual product it represents (Arvidsson, 2006). Similarly, Arvidsson argued that beyond the product, that there has been a growing emphasis on defining and understanding the value of the brand itself, and what it brings to a product. The brand has become an important management concept that, by itself, lends greater value to the product.

Consider again the case of Quaker Oats in the example. The brand of a product adds value to the latter, and this added value has been commonly referred to as "brand equity" (Aaker, 1991, p. 195). A review of the literature showed that brand value may well reside in brand equity which is defined as the brand's

> capacity to generate a future value stream, either through its ability to extract a premium price from consumers (for example, being prepared to pay more for a

> Rolex watch than for an unbranded, if functionally equivalent, watch), or through its ability to attract capital (for example, investors prefer to place their funds in a company that they know and sympathize with), or otherwise facilitate relations with interested parties (distributors, producers, etc.). (Arvidsson, 2006, p. 189).

In other words, brand equity is the added value that the product achieves as a result of past investments in the marketing activity for such brand (Keller, 2003).

It is difficult to understand how to manage the added value of a brand without knowing the actual value that a brand adds to a product (Cobb-Walgren, Ruble, & Donthu, 1996). An examination of the nature and measurement of brand equity thus becomes imperative for purposes of this study.

Sharing of Mind

In brand management, the concept of brand equity can be understood from the perspective of four main players: the investor (or brand-owner), the manufacturer, the retailer, and the consumer or customer. The brand adds value to the product for each of these four groups. Investors are financially motivated to extract the value of a brand from the value of the company's other assets (Cobb-Walgren, et al., 1996). On the other hand, manufacturers and retailers are motivated more by the strategic implications of brand equity (Keller, 1993). For manufacturers, brand equity can provide an advantage to the company in terms of greater volume and greater margins. It provides for a strong platform for the manufacturer to introduce new products and to secure the brand against competitor products. For retailers, brand equity contributes to the overall image of the

retail outlet and helps to build store traffic, maintain consistent volume, and reduce risk in allocation of shelf space (Cobb-Walgren, et al., 1996).

The advantages of brand equity; however, to the investor, manufacturer, and retailer are meaningless if the brand has no value to the consumer or customer. In other words, a brand has value to the investor, manufacturer, and retailer if and only if the brand has value to the consumer (Crimmins, 1992; Farquhar, 1989). It thus becomes imperative to understand how brand value is created in the mind of the consumer and how brand value translates into choice behavior (Cobb-Walgren, et al., 1996). This study focused on how the added value of a brand to a product, or brand equity, is established in the mind of the consumer.

Consumer Brand Equity

From the basic concept of brand equity, the more evolved model of customer bran equity or consumer mind equity emerged. Customer-based brand equity is "the set of associations or attitudes that consumers have in relation to the brand, and that contribute to its value for them" (Arvidsson, 2006, p. 189). From the definition of customer-based brand equity, brand value resides in the minds of consumers, what consumers associate, think, or feel about a brand is what gives the brand value.

Schultz (2005) provided for a classification of what customers do with respect to a brand: (a) Observations, (b) Conversations, and (c) Recommendation. The first classification, Observations, consumers rely on observations about the brand based on the people they see using the brand, and the people who are not using the same brand. Consumers build their own understanding of what the brand is, is not, or never will be,

based on their observations. Some of these observations may be influenced by the brand-owner or marketer's activities. This has an impact on how customers process marketer-generated communication, no matter what form it takes (Schultz, 2005).

The second category in Schultz's (2005) classification was Conversations. Customers and consumers have conversations about brands, usually without even intending to, such as by comments they may make about brand usage, brand success, or brand failures in the course of everyday conversations. Brand conversations do not even have to be between two people who know each other, but may even be, for example, from a casual comment in an elevator between two strangers regarding a restaurant, a movie, or even a building. These conversations may and do happen everywhere and all the time (Schultz, 2005).

The third and last category in Schultz's (2005) classification was Recommendation. The most common form is when one customer asks another to make a suggestion on something being considered. These requests are usually made of "market mavens" or people who are experts in a particular area. Recommendations may come from solicited opinions, and from personal expressions of satisfaction or dissatisfaction made publicly or privately. The Internet, especially, has been a major source for customer recommendations on brands since customers can access information through the Internet, join chat groups, surf blogs, and the like. Even though Internet information cannot be deemed as traditional conversations, they nevertheless represent implied recommendations or implied slams (sometimes, very express or explicit slams or recommendations, in fact) against the brand or the brand's activities or value (Schultz,

2005). Schultz pointed out that recommendations are probably the most identifiable of marketplace networks, and seem to be growing exponentially, especially since information technology has followed recommendations to become accessible and influential on a hugely global scale.

The global impact of customer recommendations and on how customers react to a brand in general, is pivotal in establishing and creating brand value. It is important to emphasize that, in adapting the "share of mind" notion, for brand value to emerge; such sharing of mind must be collective (Miller, 1998). Miller further argued that it cannot pertain to an individual's associations and attitude towards a brand alone. Furthermore, Miller (1998) pointed out that in a consumer society, goods derive their value from their ability to construct and reinforce social relations and shared meanings and experiences. For a brand to have value, particularly from the perspective of the brand-owner, then brand equity must be collectively recognized by a community of people. Otherwise, the brand-owner would be placed in a situation wherein he or she would have to cater to the each specific consumer's own individual sense of what the value of the brand is supposed to be (Miller, 1998). The sharing of mind must thus be based on a common framework. Yet marketing writers as too simplistic have criticized this collective sharing of mind among consumers as to the value of brand (Arvidsson, 2006). Brand-owners strive to make sure that a brand enters "into each consumer's life in such ways that what they do with it, and how they experience doing things with it, adds to its brand equity" (Arvidsson, 2006, p. 190).

Affect Modulation

In establishing brand value, the brand-owner faces the dilemma of managing both collective sharing of mind among consumers, but in also ensuring that the brand reaches out to each consumer in such a way as to make each consumer's experience with the brand relevant in his or her daily social life. In brand management, this is "affect modulation" which has been described as shaping the very basic bonds that serve as the foundation for social life (Massumi, 2002, p. 8). Affect, which is different from emotion, is the capacity of a body to affect or be affected by others, to open up to other bodies (Arvidsson, 2006). It is not something that is individual, but takes on a collective dimension. It is the most basic form of communication that forms the basis in construction of a common social world. Brand management is premised on the assumption that the brand constitutes a medium for the communication of affect. Therefore, the emphasis of brand management is on giving the medium of a brand a particular affect in a social world that, in turn, will allow certain affective patterns to be maintained.

In affect modulation, the medium of a particular branded product may trigger affective reaction that may be enough to produce certain forms of behavior among consumers. The swoosh in the Nike logo, for instance, may trigger a consumers to purchase a Nike product because it is associated with good quality footwear.

Contemporary brand management posits that for brand-owners to trigger individual actions – or to allow each consumer to individually "experience" a brand – then the emphasis must move away from the programming of individual affect. In its place, the focus should be about programming mass affect or, more specifically, a pattern

of mass affect. Such a pattern would be similar for a wide group of individuals, thereby allowing each consumer to "experience" the brand on an individual level, but at the same time, these "individual" experiences are common and shared by a large number of individuals. The emerging pattern is thus premised on a common perception of brand value even though it is experienced by a huge variety of individuals in different situations (Arvidsson, 2006).

Going back to the example of the Nike swoosh earlier, taken on a collective perspective, then the purchasing behavior triggered in an individual consumer is actually reproduced across a wide variety of people over a huge range of different locations. There is a pattern across the world premised on a collective or shared reaction by a multitude of different consumers that the swoosh in the Nike logo is associated with a product known for good quality footwear (Yu, 2003, p. 13)

Brands such as Nike enjoy what has been described by the literature reviewed as the "global brand advantage" (Yu, 2003, p. 13). A brand that is perceived by consumers to be global creates value in the mind of consumers. Most of the value creation is through the fact that consumers ascribe products that are global to be of good quality. Brands that tend to be successful around the world also tend to be of higher quality and are thus promoted as such. In addition, the consumer concept of a global brand is accompanied with a perception of the brand's prestige. Global brands thus become desirable to consumers not merely because they are global, but because their very "globalness" implies other traits which the consumer perceives and values – such as quality and prestige. This does not mean, however, that local brands cannot remain competitive

unless they go global. Local brands can able their brand very strongly unto the local culture, and may serve as strong indicators of the local consumer culture (Yu, 2003, p. 13)

Media

Media culture has played a huge rule in "sharing of minds" among consumers. It has provided a form of "general intellect" that has effectively empowered the communicative productivity of consumers' worldwide (Virno, 1996). Media is a way of programming the social world wherein the brand can be constituted as an "operational" medium which does not necessarily represent a reality but rather produces a reality composed of both the virtual (as something which can be shaped and manipulated by the people making using of the medium, such as the brand-owners) and the material (representing the actual physical product or commodity itself, which cannot be changed) (Crandall, 2005).

Advertising

A review of the related literature showed that one of the major contributors to brand equity is advertising (Aaker & Biel, 1993; Cobb-Walgren, Ruble, & Donthu, 1996; Eng & Keh, 2007; Prentice, 1991; Ryan, 1991). It has been a common trend for companies to spend huge amounts every year on advertising in order to create or strengthen their product's brand equity or brand value. Such expenditures, of course, are coupled with the company's expectation that such advertising spending will results in greater returns and profits. The literature reviewed however has shown that higher

advertising spending does not always automatically translate to stronger brand equity for a corporation.

Perceived Quality, Advertising Expense

Advertising also affects the perceived quality of a brand and influence on usage experience (Cobb-Walgren, Ruble, & Donthu, 1996). According to Light (1990), there is a correlation between advertising spending and perceived quality of a brand, but that there is no correlation between promotional weight for a brand and the perception of quality. An earlier study by Nelson (1974) demonstrated that heavy advertising could improve the perceived quality of consumers for "experience goods" which, by definition, are difficult to evaluate prior to purchase thereof. Similarly, Kirmani, and Wright (1969) found that the perceived expense of a brand's advertising campaign can influence the consumers' expectations of product quality.

According to Cobb-Walgren, Ruble, and Donthu (1996), advertising also has a big influence on behavioral manifestations of brand equity. The authors cited Johnson's (1984) study that examined the relationship between advertising spending and brand loyalty, and found out that one of the major factors why certain brands suffer through a decline in brand loyalty over time is lack of advertising support. After all, even if brands have high market shares, this factor alone is not enough to distinguish the brand from all the other brands in the same playing field (Biel, 1993).

Blackston (n.d.), in his research study, warned against considering merely the positive consequences of advertising on brand equity and that brand owners should focus instead on a continuous measure of advertising effectiveness. According to Blackston, to

evaluate advertising's effectiveness, then the consequences of advertising must be measured across a full spectrum of time scales from the very short term to the very long term. Blackston posits that "making advertising truly accountable means being able to quantify the return on the investment in it – over any length time period" (Blackston, n.d., p. RC-4). In other words, the measurement of advertising effectiveness relative to brand equity must be independent of period.

Blackston (n.d.) shared the view of Cobb-Walgren et al. 1996, in that the effect of advertising is that it makes more people buy the brand, makes them buy it more often, or makes them willing to pay more for it. When these positive consequences occur, then advertising is deemed to have made the brand more desirable and more valuable – advertising has then succeeded in increasing the value of a brand. The increase in the value of a brand translates into higher sales volume and/or revenue stream either immediately or over a longer subsequent period. However, Blackston (n.d.) stressed that a direct measure of the value added by advertising necessarily has to be independent of the period of the sales effect resulting from that increased value.

Measuring the long-term effect of advertising on the company's brand value or brand equity has thus been established in the related literature as pivotal in understanding the relevance of advertising in brand management. Similar to Blackston's (n.d.) and Cobb-Walgren, Ruble, and Donthu's (1996) assertions, the study of Eng and Keh (2007) sought to focus on the long-term impact of advertising on the company's performance. A more comprehensive discussion of the research study by Eng and Keh (2007) will be presented in this next section of the dissertation.

The Relationship between Advertising and Brand Equity

The following review of the related literature will involve an analysis of past studies that specifically analyzed the relationship between advertising expenses and brand equity or brand value creation. These studies will be analyzed for possible adaptation of the models and brand value calculations that, in turn, may prove to be applicable to this study.

Eng and Keh's (2007) Study

According to the research of Eng and Keh (2007), advertising contributes to the creation of brand value since brand-based advertising allows a company's product to be differentiated from its competitors. It makes it harder to imitate the company's product, for instance, because such brand-based advertising provides a comparative advantage for the company. It is not easy to copy or imitate a company's brand equity. Eng and Keh provided that advertising influences value creation in a firm by acting as an appropriate mechanism to build brand names and erect market barriers deterring competitor entry" (p. 91). The authors emphasized that the main role of advertising is that it creates brand equity for a company's product through the promotion of ideas, goods, or services.

Advertising creates brand awareness and increases the probability that the brand is included in the consumer's evoked set Cobb-Walgren, et al. 1996). According to Farquhar (1989), advertising can make positive brand evaluations and attitudes that are readily accessible in memory for the consumer. When stored in the consumer's accessible memory, these brand associations translate into "non-conscious but reliable behavioral predispositions" (Krishnan & Chakravarti, 1993, p. 214). Stigler (1961) in particular

found that advertising which provides information on objective attributes such as price and physical traits have a big influence on consumers' brand associations. Further, the study of Herr and Fazlo (1992) showed that favorable brand attitudes will only guide perceptions and behavior if and only if the consumers can instantly evoke those attitudes.

Eng and Keh's (2007) research showed that key intangible assets like brand value, product differentiation, and goodwill are the outcomes of investing in advertising for a company. In their research, the authors stressed that it is important to analysis the impact of advertising expense on the company's short-term or immediate profits but, more importantly, to examine its "lagged effects" (Eng & Keh, 2007, p. 92). These lagged effects pertain to the company's future operating and market performance (Eng & Keh, 2007).

In understanding the relationship of advertising and brand equity, Eng and Keh (2007), in their research study, developed the following hypotheses:

Hypothesis 1 – Advertising expense and brand value are positively correlated;

Hypothesis 2 – Advertising expense and brand value are jointly and positively associated with the brand's future operating performance.

Eng and Keh (2007) measured return on assets (ROA) and excess stock returns in order to determine the impact of advertising on the company's future operating and market performance, respectively. ROA was used to measure the company's future operating performance since it is an indicator of performance that tends to look backward. On the other hand, excess stock returns are market measures that look forward, and as thus were used to examine the company's future market performance. It should be

noted that the key difference in Eng and Keh's (2007) Hypothesis 1 and Hypothesis 2 is that the authors made use of a firm-level analysis of the effects of advertising and brand value in terms of proving or disproving Hypothesis 1.

For Hypothesis 2, the authors made use of a brand-level analysis to understand the effects of advertising and brand value on brand-operating performance. For their research, Eng and Keh (2007) made use of brand value, brand-level sales, and operating-income data from *Financial World* magazine, while they made use of advertising expense data from *Adweek.* The authors then performed correlation analysis to analyze the data gathered for their research (Eng & Keh, 2007).

The results of Eng and Keh's (2007) study showed that advertising does indeed have carryover effects, or lagged effects. Advertising was found to be positively associated with companies' contemporaneous ROA and had positive impact on operating performance as measured by accounting results. The study showed that the carryover effects of advertising could have an impact on the company's profitability for up to 4 years. On the other hand, brand value was shown to have a positive impact on ROA as well, with positive carryover effects lasting for up to 3 years (after which, the authors predicted, a decline will most likely occur over time). The time limit of 3-4 years shown in Eng and Keh's (2007) findings, and the decline thereafter which the authors predicted, shows that companies should continuously invest in advertising to strengthen or boost brand value before it starts declining.

The authors; however, warned that while advertising and brand value both had effects on the future ROA of a company, increasing advertising in the presence of brand

value might actually reduce the benefit to the company. The results of their study also showed that advertising did not have a significant impact on stock returns.

> Advertising lagged three years has a positive impact on stock returns. Brand value lagged three years and lagged four years has a negative impact on stock returns. Advertising and brand value lagged four years jointly have a positive impact on stock returns. (Eng & Keh, 2007, p. 96).

In other words, the authors concluded that the market does not view advertising spending or brand value as creating growth in future firm value. From the firm-level analysis for Hypothesis 1, thus, Eng and Keh (2007) concluded that advertising and brand value benefit firms by improving future accounting performance, but do not affect growth in the market value of the firms.

On the other hand, from the brand-level analysis framework for Hypothesis 2, the results of Eng and Keh's (2007) study showed that advertising had a positive impact on brand sales only for the first two years. Beyond the 2 years, the effect of advertising on brand sales was not significant. The results also showed that while brand value had a positive effect on brand sales, the effect of the former on the latter continues up to four lags, or up to four years. Advertising was also found to have a positive effect on brand profitability for up to four years. Brand value, similarly, also had a positive effect on brand profitability for four lags.

As such, Eng and Keh (2007) concluded that, from the brand-level analysis, advertising resulted in better performance for the company at the brand level, especially

in terms of brand sales and brand profitability. Thus, advertising and brand value were deemed as bringing positive benefits to the company's brands.

Eng and Keh's (2007) research study was examined at length in this paper because it has significant theoretical and managerial implications that strengthen the hypotheses of this research. Their study showed that advertising effects for top brands could have positive results for the company for up to 4 years. On the other hand, the positive effects of brand value on the company's accounting returns last up to three years, and it has a positive effect on both brand sales and brand profitability. Overall, brand value creation is expected to pay off in terms of financial returns through the company's advertising spending every 3 to 4 years. Advertising campaigns produce sales beyond the life of the campaign itself. Indeed, the values of the brands… were created in large part as a direct result of the companies' advertising campaigns over the years. (Kimelman, 1993, p. 50)

The implications for managers in this case are that brand building should thus be done systematically in order to avoid wasting time, money, and resources for the company. Companies should not indiscriminately throw away their money on advertising spending – they must consider the carryover effects of previous advertising activities, and determine when it would be a good time to step in and re-invigorate their advertising efforts to create or strengthen brand value (Eng & Keh, 2007).

Herremans, Ryans, and Aggarwal's (2000) Study

The study by Herremans, Ryans, and Aggarwal (2000) is similar to Eng and Keh's (2007) research in that it examined the link between advertising and brand value. In their research, the authors focused on the advertising turnover factor and how this may or may not translate to profits for a company. The authors acknowledged that, based on past research and trends, companies do actively invest in advertising, marketing and promotions in order to boost company brand equity. Growing awareness in the importance of brand management has had corporations recognizing that the value of a company's brands or, in other words, its brand equity, is one of its most important assets.

Herremans, et al., (2000), however, pointed out that while companies may spend millions and billions of dollars on advertising, such investments might actually be inefficient and ineffective. The authors thus stressed the importance of examining the "efficiency versus effectiveness of marketing expenditures" (Herremans, et al., 2000, p. 19). The need to focus on this framework is, according to the authors, because:

> [g]iven the large investment in advertising and marketing and the high failure rate of new products (six or seven out of every ten), marketing managers must have some means to justify the continued investment in brands, especially when budgets are tight. (Herremans, et al., 2000, p. 20)

First, the authors emphasized the need to isolate the examination of the return on brand values, just as with the company's other capital investments, in order to measure the effect of brand values in creating shareholder value. Advertising is recognized as a means to communicate a product's availability, to understand its characteristics, and to build the product's image. The authors pointed out that brand asset measurements should address the extent that the firm is successful by following this process:

"Creation of a product → Providing marketing support → Retention of customers → Building of brand value → Reduction of return volatility" (Herremans, Ryans, & Aggarwal, 2000).

The authors warned that the process might not always occur in the manner indicated above. For instance, marketing support might result directly to building of brand value, without necessarily having to go through the retention of customers steps in the process flow. It is not so important to focus on the sequence, but to define the important elements which create a brand value in order to suggest an appropriate performance measurement system for the company (Herremans, et al., 2000, p. 20)

The focus of (Herremans, et al., 2000, p. 20) research was on the advertising component of marketing support – in other words, advertising expenditures were examined separately from other forms of support within the company. This again emphasized the authors' approach of isolating the examination of the return on brand values – because when advertising expenditures is thus examined separately from other forms of support, only then could they understand the relationship of such expenditures to the company's brand value. The authors called this calculation of the relationship between advertising and brand value as "advertising turnover" (Herremans, Ryans, Aggarwal, 2000, p. 21). They provided for the following formula in computing the advertising turnover of a company:

$$\text{Advertising turnover} = \frac{\text{Brand Value}}{\text{Advertising Expenditures}}$$

The second step provided for by Herremans, Ryans, and Aggarwal (2000) for computing advertising turnover in their study was to need to find a database of externally reported brand values. For their own study, the authors made use of the brand values reported by *Financial World* magazine over the period of 1991 to 1996.

Third, the researchers then set criteria to determine which firms should be included in their study:

1) Both brand values and advertising expenses had to be available for the selected company for a period of at least 4 years;
2) The product brand sales had to be at least 70% of the company's total sales.

For the second criteria, specifically, it meant that the brand had to be a company brand, rather than a product brand (Herremans, Ryans, & Aggarwal, 2000).

The authors then proceeded to categorize the selected firms according to the dynamics of the relationship between advertising expenditures and their brand values, as follows:

High-Efficiency Brand Enhancers. According to Herremans, Ryans, and Aggarwal (2000), companies which are characterized as high-efficiency brand enhances have rising brand values and advertising expenditures. Brand values rise at a faster rate than advertising spending, which results in an advertising turnover which is on a slightly increasing trend.

Low-Efficiency Brand Enhancers. In these types of companies, both brand values and advertising expenditures are typically high. Herremans, Ryans, and Aggarwal (2000) however noted that with these types of firms, advertising expenditures usually rise at a much faster rate than brand values. Even though the absolute brand value for these kinds

of companies reflect an increasing trend, the resulting advertising turnover is characterized as volatile simple because the relationship between advertising expenses and brand value remains less clear.

Brand Future Unknown. These types of firms have increasing brand values but decreasing advertising expenditures. As a result, the advertising turnover shows a sharp increase, but then one is left wondering as to how long such a trend can continue. In short, the future of the brand cannot be determined with certainty as to how long its advertising expenses will be efficient and effective for its brand value (Herremans, Ryans, & Aggarwal, 2000).

Brand Deterioration. For these types of companies, advertising expenditures are constantly rising, while brand values are constantly decreasing. The advertising turnover indicates a downward trend for these kinds of firms (Herremans, Ryans, & Aggarwal, 2000).

Brand Neglect. With these kinds of companies, both brand values and advertising expenditures are on the decline or constantly decreasing. The resulting advertising turnover may increase or decrease depending on the declining rate of each variable (Herremans, Ryans, & Aggarwal, 2000).

The categories provided for by Herremans, Ryans, and Aggarwal (2000) can serve as useful tools in characterizing the companies selected for purposes of this dissertation, and to help characterize the relationship of advertising spending and brand value for each firm thus selected for this research study.

Kinds of Brand Value

Product-Driven Brands

Product market-based methods identify a brand's value based on how they compete with other brands in their specific product categories (Wyner, 2004). The goal of product market-based brand value management it to develop a range of product brands that could compete within the same product category (Schultz, 2004). This kind of brand value has been shown to be responsive to marketing mix drivers such as advertising, promotion, and pricing. This type of brand value can help determine brand value opportunity, competitive comparison, product volatility over time, and marketing drivers that can increase brand value (Wyner, 2004). This approach was designed to give an organization brand domination or even monopoly power in chosen product categories (Schultz, 2004).

In a product-drive system, identifying the brand's corporate owner has very little value. In fact, attaching a corporate name to a brand can even be detrimental since research has shown that there is very little added value that could provide a competitive advantage to any brand (Schultz, 2004). Procter & Gamble, for instance, makes extensive use of product market-based methods. Schultz (2004) described it as such: "Knowing a product originates from Procter & Gamble adds little to the value of Pampers or Charmin and even less to Max Factor cosmetics" (p. 10). On the other hand, corporate brands focus on just the opposite – rather than developing a wide range of product brands competing within the same product categories, the focus is on single-brand, single-product, or single-category brands. Examples of companies making use of this approach are Dell, IBM, Intel, Starbucks, Evian, and Perrier. These companies represent corporate

brands that do not stray far from, for instance, their computer roots, or coffee roots. In this case, the product brand is the product brand itself, and vice versa (Schultz, 2004).

Another way of measuring brand value is to construct brand strength measures from consumer performance brand equity research across a multitude of categories and brands which in turn creates brand strength measures (Wyner, 2004). This method helps to capture the process of building brands through expanding presence and consumer relevance in the market. More importantly, it helps to enhance performance on perceptual dimensions which are most relevant to consumers. The overall strength of the brand is then linked to its actual performance in the market (Wyner, 2004).

The relationship between a brand's perceived strength and its subsequent financial performance provides a method for measuring financial value (Wyner, 2004).

Determining brand strength measures is also directly connected to identifying marketing strategies which help to build the brand. It allows brand-owners to determine the contributions of bringing new consumers to the brand through the creation of brand presence, increased brand relationships through delivering key performance dimensions, and retention of high-value consumer relationships through loyalty building (Wyner, 2004).

Measuring Brand Value

Traditionally, components such as price premiums, customer retention, increased retail distribution, and trade-offs against competitor offerings are used to define product brand value. Most product brand valuation methods make use of short-term incremental

financial return in determining the added value of a brand to the organization's bottomline (Schultz, 2004).

This is all good and well for product brands, but a different approach may be necessary for corporate brands. Corporate brand value may be bound up in the organization's reputation and may occur among people, groups, or units which have an indirect impact on the brand's measurable value. These factors may not necessarily increase short-term cash flows, which is the most typical measure of brand success and value. Yet the factors affecting corporate brand value – no matter how indirectly – can nevertheless have substantial impact on overall organizational success in the future (Schultz, 2004).

In his research, Schultz (2004) provided guidelines that can assist in determining what framework or approach to use in measuring brand value for product brands and corporate brands. First, it is critical for the valuation methodology to separate corporate and product market value. This involves valuing the corporate brand and separately valuing the different product brands. Second, some type of tracking or scorecard system is necessary in order to allow for a determination on whether corporate brand value is being added to or subtracted as a result of the organization's marketing, communication, or advertising programs and activities. Third, it is important to recognize that there are groups of people or organizations that have a direct impact on the financial value of the corporate brand, while others may simply have an indirect impact. The groups that have a direct impact are typically customers, distributors, dealers, suppliers, financial/investment community, and employees (Schultz, 2004).

On the other hand, groups that have an indirect impact to the financial value of a corporate brand include governments, nongovernment organizations, and regulatory commissions. These groups make it possible to manufacture and market to environment and social groups which can influence costs, but also restrict corporate capabilities. In other words, this "indirect group" may impact how efficiently and effectively the organization can manage its business and this may influence the value of the brand as well (Schultz, 2004).

In his article, Schultz (2005) provided another term for these groups of people which may have a direct or indirect impact on brand value – "marketplace networks." These are the:

> various types of brand-influencing activities that generally take place well below the radar of most marketing organizations. Commonly, these marketplace networks consist of individuals, groups, and even recognized constituencies that are almost continuously operating – talking about, discussing, commenting on, or simply demonstrating – their view of brands and branding. Clearly, these networks create or destroy brand value. (Schulz, 2005, p. 12).

Case Studies

Hierarchy of Effects Model

In their research study, Cobb-Walgren, Ruble, and Donthu (1996) adapting a Hierarchy of Effects Model as their framework for understanding the different antecedents and consequences of brand equity from the perspective of the individual consumer. In adapting this framework, the authors examined consumer perceptions as to the physical and psychological features of a brand from various information sources.

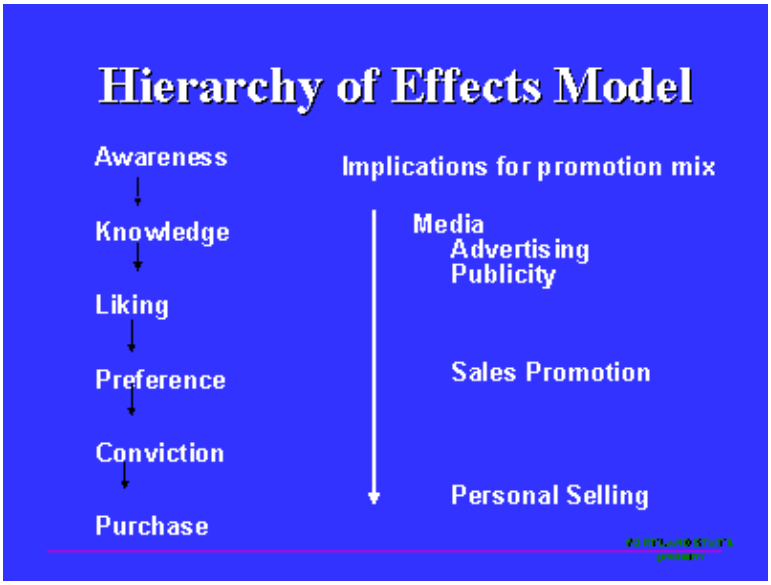

Figure 1. Hierarchy of effects model (Source: Cobb-Walgren, et al, 1996, p. 29)

For purposes of their study, Cobb-Walgren, et al., (1996) sought to examine the impact of advertising support by comparing both products and services. For the product category, the authors selected the household cleanser category and went about comparing the brands Soft Scrub and Bon Ami. For the services category, the authors picked the hotel industry category, using the brands Holiday Inn and Howard Johnson for comparison. In turn, the two product categories were also compared with the two services categories to determine the impact of advertising on consumer perceptions and, ultimately, on brand equity.

In identifying the perceptual components of the products and services selected, the authors made use of Aaker's (1991) enumeration: awareness, brand associations, and perceived quality. Cobb-Walgren, Ruble, and Donthu (1996) examined each of these three components for their research study by measuring each component equally by using

a simple average. In analyzing their data, the authors made use of the conjoint procedure. Conjoint analysis makes use of "a multivariate technique which determines the relative importance of a product's multidimensional attributes" (Cobb-Walgren, Ruble, & Donthu, 1996, p. 32, citing Green & Wind, 1975). Similarly, in his research, Blackston (n.d.) adapted a Brand/Price Trade-Off methodology by making use of the conjoint analysis to measure only two variables – brand and price. According to Blackston (n.d.), with conjoint analysis, consumers are faced with a series of simulated purchase choices between different combinations of brands and prices. Every choice triggers an increase in the price of the selected brand, which in turn forces the consumer to trade-off between choosing a preferred brand and paying less. In this sense, consumers reveal to the brand owners how much their brand loyalty is worth and, conversely, which brands they would relinquish for a lower price.

By using the same type of conjoint analysis technique, Cobb-Walgren, Ruble, and Donthu (1996) in their study were able to determine which brand yielded the higher preference among consumers, and allowed them to determine the importance of a brand name as compared to other brand attributes.

Cobb-Walgren, Ruble, and Donthu (1996) collected data by conducting surveys among users of the respective product and service categories they selected. The surveys given out were structured into sets of questions:

i. the objective behind the first set of questions was for the measurement of brand equity, using the perceptual components based on Aaker's (1991) definition, as cited earlier; and

ii. for the second part, the questions were intended for the measurement of brand preferences and usage intentions.

For the first part of questions, respondents were asked to list as many brands as they could, off the top of their minds, relative to the product or service category. Brand awareness and degree of brand familiarity were measured from these survey results. The respondents were then asked to list all descriptive words, thoughts, characteristics, symbols or images that cam to mind when the selected brand was mentioned (Soft Scrub vs. Bon Ami; Holiday Inn vs. Howard Johnson). From the survey results, the authors created total associations, total positive association, total neutral and total negative associations (Cobb-Walgren, Ruble, & Donthu, 1996). Next, the authors measured advertising awareness by asking respondent if they had ever seen any advertising for the respective brand and, as a follow up question, to describe what the advertising said or showed.

For the second set of survey questions, the authors started with conjoint questions, respondents were asked to assume they were making a decision among the brands in the respective categories selected for the study (Soft Scrub vs. Bon Ami; Holiday Inn vs. Howard Johnson). Then the respondents were asked to rate five brands in the category, including the test brands (two for the household cleanser category, and two for the hotel category, as mentioned). Regression analysis was used through a 7-point rating scale (ranging from very bad to very good) for the set of questions covering the product category and for the set of questions covering the hotel category.

The authors placed much emphasis on the impact of advertising spending on consumer perception. According to their study, hotel services such as Holiday Inn and Howard Johnson may maintain different advertising budgets based on the number of properties owned and operated by each particular hotel chain. On the other hand, for household cleanser, the varying advertising budgets are attributable to differences in distribution and product availability.

The findings of their study showed that across both categories (household cleanser and hotels), the brand with the greater advertising budget yielded substantially higher levels of brand equity. In turn, the brand with the higher equity in each category generated significantly greater preference and purchase intentions. The results of the research study confirmed the authors' findings, "advertising equals knowledge, and knowledge equals liking" (Cobb-Walgren, Ruble, & Donthu, 1996, p. 37).

According to Cobb-Walgren, Ruble, and Donthu (1996), consumers form perceptions of the physical product from objective sources (such as *Consumer Reports*) or from more subjective sources (such as advertising or personal experience). On the other hand, consumers form perceptions on the psychological features of a product primarily through advertising. Both the physical and psychological perceptions contribute to the meaning or value which the brand adds to the consumer. In other words, the consumer's perceptions of the physical and psychological features of a product creates brand equity, which in turn, influences consumer preferences and purchase intentions, and ultimately, the consumer's brand choice.

Cobb-Walgren, Ruble, and Donthu (1996) were cautious about providing any definitive conclusions as to advertising spending actually causing brand equity for a product, or that insufficient advertising spending will destroy the value of a brand. However, the authors pointed out that if a brand owner chooses to stop investing in the creation and maintenance of a brand franchise, then that brand owner must be prepared for the possibility of losing equity over time. The research study also stressed that products with lower risk and lower advertising involvement may depend even more heavily on differences created through advertising. According to the authors:

> [I]t could be that for high involvement products, consumers consider a wide range of features, with brand name being one of many attributes evaluated. For low involvement products were fewer features are likely to be evaluated, a brand name might serve as a 'halo' through which consumers can make a quick assessment of the brand. (Cobb-Walgren, Ruble, & Donthu, 1996, p. 38)

Lastly, Cobb-Walgren, Ruble, and Donthu (1996) concluded that higher advertising spending does not automatically or necessarily translate to higher total association of a product by consumers. Rather, the mix of associations – both negative and positive – contributes to consumer perceptions. According to Cobb-Walgren, Ruble, and Donthu (1996), the point is that advertising allows brand owners to control the message their brand sends out to consumers, and thus, gives the brand owner a certain level of control in creating positive associations as to their product.

Blackston (n.d.) likewise examined the concepts of high involvement products and low involvement products discussed by Cobb-Walgren, Ruble, and Donthu (1996) in their research in his research article. Blackston (n.d.) referred to high involvement

products as high value brands and low involvement products as low value brands. High value brands command higher prices and margins. As a result, this type of brands lose relatively little share of volume as the price increase. According to Blackston (n.d.), this is a measure of how the brand responds to changes in its own price, which is an indicator of the brand's intrinsic value.

High value brands also better resist competition, and as such, lose relatively little share or volume as a result of competitive price promotion. This, in turn, is a measure of how the brand responds to changes in the price of its competitors, which is an indicator of the brand's relative value (Blackston, n.d.).

Market Orientation Approach

The market orientation approach is the organization's ultimate expression of its intent to focus on customer value (Cravens & Guilding, 2000). The organization's objective is to provide superior customer value, and as such it focuses more on the customer or consumer rather than on its competition.

Market orientation can be defined as "the organization culture (i.e., culture and climate) that most effectively and efficiently creates the necessary behaviors for the creation of superior value for buyers and, thus, continuous superior performance for the business (Narver & Slater, 1990, p. 21). Strongly branded firms require a way of valuing the effect of the brand in terms of the entire customer relationship. As such, according to Cravens and Guilding (2000), brand valuation represents the most effective means of measuring the creation and maintenance of superior customer value. It creates a financial value for all of the intangible elements of a brand and yet remains focused on the

customer. On the other hand, Slater, Olson, and Reddy (1997) described market orientation as both a culture and a process used throughout the entire organization with a central focus on customers' needs to create superior customer value. It is a process which requires getting and sharing information from throughout the entire organization itself (Kohli & Jaworski, 1990).

According to Cravens and Guilding (2000), it is important to understand the relationship between market orientation and brand valuation, especially in strongly branded firms. A market orientation strategy can result in superior performance for a brand if all aspects of the organization's management strategy are linked to the actual active management of the brand itself and the brand system. Table 1 below provides for an analysis on how the components of brand valuation match the dimensions of market orientation.

Table 1

Market Orientation and Brand Valuation

Market orientation dimension	*Description*	*Brand valuation components*

Customer focus	Place customers' interest first.	Overall brand profitability; Perceived quality; Brand personality
External orientation	Focuses outside organizational boundaries.	Leadership; Leadership or popularity
Customer responsiveness	Provide value to customers	Stability; Satisfaction or loyalty; Perceived value; Distribution coverage; Price premium
Focus on customers and competition	Increase focus to include competitors	Market measures; Market share and price
Industry foresight	Ability of the organization to anticipate and shape evolution of markets	Trend measure; Protection; Brand awareness
Quality of market orientation process	Extent to which organization successfully engages in generation, dissemination and responsiveness to market intelligence	Support; Organization associations

(Adapted from: Cravens & Guilding, 2000, p. 30).

In trying to understand how brand valuation was associated with market orientation and customer value, Cravens and Guilding (2000) made use of two formulary methods of brand valuation:

i. the approach developed by Interbrand (Keller, 1998, pp. 362-363)

ii. Aaker's (1996) "brand equity ten" (p. 319).

One similarity between these two formulary methods is that they both treat future income flow as a comprehensive measure that is discounted to the present. Keller's (1998) Interbrand approach provides that future income flow from owning a brand is determined based upon an assessment of earnings, which is then adjusted for qualitative measures of brand strength. The Interbrand method further arrives at a measure which

incorporates quantifiable estimates of brand leadership, market structure, degree of internationality, consistency in customer perception and brand support, and legal protection. On the other hand, Aaker's (1996) brand equity ten approach uses similar measures in ten categories: price premium, satisfaction or loyalty, perceived quality, leadership or popularity, perceived value, brand personality, organizational associations, brand awareness, market share and market price, and distribution coverage.

Table 1 shows that there are various components in the brand value methodology which captures the critical elements which are necessary for a market orientation approach which emphasizes customer value. Market orientation becomes more effective when it is taken into account with the complete strategic environment of the entire organization. The components of the market orientation strategy in Table 1 are discussed in detail below.

Customer focus. This is perhaps the most pivotal component of the market orientation approach (Cravens & Guilding, 2000). Keller's (1998) Interbrand approach uses an overall brand profitability measure to capture the customer focus dimension of market orientation. On the other hand, Aaker's (1996) brand equity ten approach makes use of perceived quality and brand personality function in a similar manner as Keller's (1998) approach.

External orientation. This dimension focuses outside the organization's boundaries (Jaworski and Kohli, 1996). Brand valuation provides a consistent, comparative measure for evaluating the position of a company in the external environment. Keller's (1998) Interbrand approach captures this dimension in the

measure of leadership used in its approach. This measure is the most heavily weighted item in the set of Interbrand measures reflected in Table 1. In Aaker's (1996) brand equity ten approach, the dimensions of leadership or popularity are measured in much the same manner. Aaker's (1996) also specifically noted that the measure should include an awareness of the importance of innovation.

Customer responsiveness. According to Jaworski and Kohli (1996), to achieve a market orientation approach, customer responsiveness should not be about recognizing customers but should also involve providing value to customers. After all, the provision of customer value is already the most fundamental notion which is inherent in the brand approach. According to Keller's (1998) Interbrand approach: "[b]y creating perceived differences among products through branding and developing loyal consumer franchises, marketers create value, which can translate to financial profits for the firm" (Keller, 1998, p. 5). Aaker's (1996) brand equity ten approach included several measures in his brand valuation approach which indicated customer responsiveness, such as: satisfaction or loyalty, perceived value, distribution coverage and price premium over competition, which indicate the value which the brand represents to the customers. On the other hand, Interbrand uses the measure of stability to capture the multiple elements of customer responsiveness.

Focus on customers and competition. Even though customer focus is the main emphasis in the market orientation method, it is equally important to expand this focus to include competitors (Day, 1994; Narver & Slater, 1990). According to Cravens and Guilding (2000), brand valuation facilitates a focus on competitors since "the brand is

valued as distinguished from the competition by virtue of possessing an identity as a brand" (p. 32). Pursuant to Keller's (1998) Interbrand method, successful branding strategies are created only where the customer is convinced that a meaningful difference exists between brands in the same product category. The competitive focus in market orientation is incorporated in valuing the future earning potential of the brand. In Table 1, Interbrand's (1998) market measure and Aaker's (1996) market share and price are specific components of brand valuation which reflect the inclusion of competition.

Industry foresight. According to Jaworski and Kohli (1996), it is through industry foresight that the notion of market orientation gets to expand beyond merely focusing on the customer. Industry foresight "allows a company to be pro-active rather than reactive and includes a consideration of future or potential customers" (Cravens & Guilding, 2000, pp. 32-33). In Table 1, Interbrand's trend measure addresses the industry foresight component, since that dimension captures the current perception of the brand in the minds of consumers. Interbrand's protection measure also considers legal issues concerned with the protection of the brand in the market place. All these components, as reflected in Table 1, illustrates the concept of industry foresight since they help to estimate the potential earning power of the brand in the market for both existing and future customers. On the other hand, Aaker's (1998) brand equity ten approach in Table 1 covers industry foresight as well in the measure of brand awareness.

Quality of the market orientation process. Brand valuation helps to support the quality of the market orientation process by focusing on maximizing brand value, which in turn results in increased strategic brand planning and control. According to Cravens

and Guilding (2000), "[t]he quality of the market orientation process is also supported by the potential for brand valuation in elevating the role and visibility of the brand in the organization" (p. 33). Even in strongly branded companies, the brand or system of brands may not be receiving adequate attention, which makes it even more difficult to achieve a successful market orientation. Thus, brand valuation can be viewed as a way of increasing the authorization of expenditures for brand development and act as a reminder that brands are indeed important assets for organizations (Cravens & Guilding, 2000). In Table 1, Keller's (1998) Interbrand approach provides for a support measure which reflects the consistency (and as such, quality) applied to the brand management function over time. This measure represents the degree of organization investment and also indirectly reflects the quality of the process. It implies that if the brand management were shown to be unsuccessful, then the organization should just discontinue the resources it has previously been investing in support of a brand. On the other hand, Aaker's (1996) brand equity ten approach used a measure of organizational associations in Table 1 which may also be taken as reflecting the quality of the process since, in this measure, the brand is perceived as "a driver of differentiation" (Cravens & Guilding, 2000, p. 34) when associated with the organization. In both Keller's (1998) and Aaker's (1996) valuation systems, the quality of the market orientation process can best be seen in how closely the brand is actually identified with the organization itself.

In applying the brand value methodology in relation to the market orientation approach for measuring customer value, Cravens and Guilding (2000) proposed to test the following three hypotheses: Hypodissertation 1 – Companies with strong brands

which are more market oriented are more likely to employ brand valuation; Hypodissertation 2 – Companies with strong brands which are more market oriented are more likely to display positive organizational performance; Hypodissertation 3 – Companies with strong brands which are more market oriented are less likely to have a short-term orientation (Cravens & Guilding, 2000, pp. 35-37). To test their hypotheses, Cravens and Guilding conducted surveys on 47 employees from US companies with strong brands.

For their survey questionnaires, Cravens and Guilding (2000) determined the organization's market orientation by using five items to measure market orientation, based on Narver and Slater's (1990) criteria. (a) The functions of my organization work together to create super customer value; (b) In my organization, departments (such as production, finance, research and development) work closely in managing brands; (c) In my organization, management thinks in terms of serving the needs and wants of well-defined markets chosen for their long-run growth and profit potential for the company; (d) My company has a strong understanding of our customers; and (e) My company has a strong awareness of the strengths and weaknesses of current and future competitors (Cravens & Guilding, 2000, p. 38).

For the set of questions relating to market orientation, respondents were asked to indicate their level of agreement to each of the five statements above on a scale ranging from 1 (strongly disagree) to 7 (strongly agree). As for determining the short-term orientation, Cravens and Guilding (2000) made use of a seven-point scale wherein respondents were asked to indicate their level of agreement with the following two items:

a) My company places too much emphasis on short-term sales; and b) My company should place greater emphasis on long-term brand development (p. 38).

Lastly, Cravens & Guilding (2000) asked their respondents to measure the level of their organization's performance, by asking them how their brand performed relative to expectations in four areas over the previous twenty-four months preceding the research study conducted: customer satisfaction, sales volume, sales growth, and profits. The authors also made use of a seven-point scale for respondents to rate the level of organizational performance, with answers ranging from 1 (much worse) to 7 (much better).

The results of the study by Cravens and Guilding (2000) lead to several implications and conclusions as to the three hypotheses tested by the authors. First, the study indicated that there was a positive relationship between market orientation and organizational performance. For companies with strong brands, a market orientation strategy yielded greater levels of organizational performance. Both the market orientation strategy and brand valuation approach encourage a long-term perspective for organizations, especially with regard to customer value. The results of the study conducted by Cravens and Guilding (2000) also showed that organizations with strong brands making use of a market orientation approach tended to have less of a short-term orientation. This allowed brand valuation to be used as a way of measuring the immediate effect of the organization's long-term decisions which will not be reflected in it short-term performance indicators. In the same vein, these organizations also displayed a greater recognition of the scope of brand equity. This recognition greatly

helped the organizations in information retrieval for maintaining a successful market orientation strategy (Cravens & Guilding, 2000).

Cravens and Guilding (2000) concluded that managers in organizations where brands are a central focus should consider the use of brand valuation as a performance measurement indicator in pursuing a market orientation. According to the authors, "Brand valuation as tool in conjunction with a brand equity management strategy provides a common comparative measure for all functional areas of the business. When functional distinctions are eliminated in achieving a market orientation strategy, then brand valuation can be a useful means of providing information for internal management decisions" (Cravens & Guilding, 2000, p. 42).

The LEGO Approach

In his case study, Iversen (2003) examined the cultural change that LEGO Company underwent in 1999 when the toy manufacturing company felt that it had lost touch with its consumer base. LEGO felt it had become too inward looking, and external factors, such as a drop in market share, was translated by its management to mean that it was time to refocus the company towards it customers. As such, the company prepared for an organizational cultural change which was rooted in building on the following new brand values: creativity, imagination, quality, fun, and learning (Iversen, 2003).

The first brand value, creativity, encouraged employees to express and empower themselves through a balance of work and play. It involved motivating employees to think outside of the box, with the company also setting up a work environment which motivated people to be comfortable to perform at their best (Iversen, 2003).

The second brand value, imagination, was linked to creativity and was fostered through a culture wherein employees were free to try new ways of doing things. LEGO employees were encouraged to take pride in developing new processes and designs, and were recognized when innovative methods were developed (Iversen, 2003).

The third brand value was quality, with employees encouraged to test both the physical quality and play quality of all its building blocks (Iversen, 2003).

The fourth brand value was fun. The management of LEGO believed that fun should be reflected in the employee's daily working environment as a way of encouraging employees to work at their best without inhibitions or fear of failure. As such, management made sure that LEGO bricks were readily available at all tables in company offices, to allow employees to take time out to play, as well as to think creatively and imaginatively while using their product (Iversen, 2003).

The fifth and last brand value built on by LEGO was learning. Childcare arrangements in company offices allowed employees not only to bring children to work, but also allowed fellow employees to observe how children play with LEGO blocks, thereby reinforcing the important role the child as their primary consumer and plays in creating a useful product. The company has offered programs to introduce employees to new opportunities, to encourage constructive learning, and to create on-the-job challenges. The emphasis on this brand value is on the most fundamental aspect behind LEGO – that children, their consumers, learn through curiosity, fearlessness, and "getting their hands dirty." This was what management wanted to mirror in their company among their own employees (Iversen, 2003).

Chapter Summary

Numerous studies have highlighted the role that brand equity plays in carrying the brand forward. In recent years, brand management has focused more and more on activities and endeavors which seek to engage a consumer in order to allow the latter to experience the brand, rather than focusing on the product itself. Experiencing the brand would necessarily involve the sharing of mind of a large number of consumers, as this translates into choice behavior (Cobb-Walgren, Ruble, & Donthu, 1996). In establishing customer-based brand equity, it would be helpful to keep in mind the classification provided by Schlutz (2005) on what customers do with respect to a brand: Observations, Conversations, and Recommendation. Sharing of mind further provides that there is a need for managing both collective sharing of mind among consumers globally (such as through media), but at the same time, there is also a need to reach out to each individual consumer so that each consumer will experience the relevance of the brand in his or her daily life.

The Hierarchy of Effects Model proposed by Cobb-Walgren, Ruble, and Donthu (1996) examined the different consequences of brand equity from the perspective of the consumer. Cravens and Guilding (2000), on the other hand, focused on the Market Orientation Approach which emphasized that organizational culture should be focused more on the company's customers rather than its competition.

Higher advertising spending or expenditures do not always automatically translate to greater or stronger brand equity (Blackston, n.d.; Cobb-Walgren, Ruble, & Donthu, 1996; Kirmani & Wright, 1969; Light, 1990; Nelson, 1974). There is a need to be able

to quantify the long-tern return on investments from the advertising expenditures of a corporation (Blackston, n.d.; Cobb-Walgren, Ruble, & Donthu, 1996). Measuring these long-term return have been the subject of several case studies, such as that of Eng and Keh (2007) wherein the authors examined the relationship between advertising and brand equity. In their study, Eng and Keh (2007) sought to determine whether key intangible assets such as brand value, product differentiation, and goodwill resulted from the advertising expenditures of a company, by testing the latter's short-term profits and, more importantly, lagged effects (which pertains to the company's long-term and future performance). The results of their study showed that advertising had lagged (or carryover) effects for up to three to four years, after which, a decline will most likely occur over time (Eng & Keh, 2007).

Herremans, Ryans, and Aggarwal (2000) also examined the relationship between advertising spending and brand equity by focusing on the advertising turnover factor. The authors pointed out that though companies may invest in advertising, marketing, and promotional efforts for a particular brand, such expenditures may actually be inefficient and ineffective if the company does not measure turnover factor. Similar to Eng and Keh's (2007) study, Herremans, Ryans, and Aggrawal (2000) stressed on the importance of measuring the long-term effect of such investments on the company's performance. In studying this long-term effect, the authors provided for a useful classification of companies based on their performance: high-efficiency brand enhancers; low-efficiency brand enhancers; brand future unknown; brand deterioration; and brand neglect.

Chapter 3 described the methodology of the study, mainly from the resource based view theory. The researcher used quantitative research method to show the correlation and statistical analysis of the data, mainly Panel data modeling and Time series of cross section analysis, descriptive statistics, Pearson correlation coefficient, and test of statistics. The researcher extracted corporate brand value of all PC based firms listed on the Interbrand/ Business Week's Best Global Brands listing from 2000 to 2007 for the study.

Chapter 4 described the results and the statistical methodologies used in the study. The first section covered the research questions and hypotheses, followed by the description of the research and statistical techniques employed. Second part of this section covered presentation and analysis of results. The researcher also used descriptive and inferential statistics to answer the original research questions through the test of hypothesis. The chapter concluded with a summary of the results and a brief preview of chapter 5.

Chapter 5 summarized the research findings presented in chapter 4. This is Followed by the summary is the research purpose, research questions and related hypothesis. The researcher presented detailed interpretation of the results, key conclusions and recommendations.

CHAPTER 3:

RESEARCH METHOD

Introduction

This chapter describes the methodology and research design used in the study. The first section will cover description of the research design, potential relationship between the variables under study, sample framework, sample design, population and unit of analysis. Second part of this section will cover data collection and the analytical approach of this study. The writer will also explain the nature of the data that will be collected and how statistical analysis will be used in testing the hypotheses.

Research Design and Approach

The underlying theoretical basis of this research study is the Resource-Based View (RBV) of Strategy. The RBV can be attributed to Penrose (1959) who proposed that sustained firm growth is based on the firm's internal characteristics, such as management capability and economies of scale of technological expertise. Later on, the resource-based view was further enhanced through the work of Wernerfelt (1984) who postulated that a firm's sustainable competitive advantage is derived from the diverse resources within the firm.

RBV begins with a theory and proceeds with the collection of data which either supports or refutes the proposed theory. This proposed theory is premised on a claim which the study will make early on in the research process. Such a research approach is called Postpositivism which pertains to a deterministic type of philosophy.

Postpositivism has also been described as reductionistic in its approach since it seeks to reduce ideas into small discreet sets for testing (Creswell, 2003).

The general research framework to be used by this study is the exploratory approach in understanding complex phenomena, tracking unique or unexpected events, and in understanding the experience and interpretation of events by actors or players with different stakes and roles (Yin, 1989).

The phenomena which this study seeks to understand is the joint effects of advertising expenditures and brand value creation on return on assets and stock return. The study will make use of the quantitative research method to understand this relationship. The quantitative research method is the appropriate framework to use for studying the relationships, patterns, and configurations among different factors, and the context in which these activities occur (Creswell & Plano-Clark, 2006).

The quantitative research method was used in this study since the research involved drawing correlations among statistical information on all PC based firms listed on the Interbrand global list from 2000 to 2007. It also involves controlling a variable to determine how other variables are influenced (Wolcott, 2001). However, as this study involves analysis of historical data that cannot be controlled by the researcher, this study used causal-comparative design to determine the relationship between advertising expenditure, brand value, and certain financial performance indicators.

The quantitative research method is also the strategy of inquiry commonly associated with Postpositivism, as the former includes correlational studies (Campbell & Stanley, 1963), which use nonrandomized designs (Keppel, 1991), as well as the use of

observational data in cross sectional studies which, in turn, result in statistical data with the purpose of forming a generalization or conclusion from a sample to a population (Babbie, 1990).

In exploring the phenomena of the joint effects of advertising expenditures and brand value on return on assets and stock return, this study sought to present several knowledge claims or hypotheses. These claims were analyzed in line with correlational studies and a theoretical framework which should either support or refute the hypotheses to be presented.

Research Questions and Hypotheses

The RBV theory of strategy provides that the more intangible resources a company has, then the greater it can sustain its competitive advantage (Barney, 1986). Based on the Research Objectives presented in Chapter 1 of this dissertation proposal, the main research question to test this prediction premised on the RBV theory of strategy is a non-directional hypothesis:

1. Is there a joint effect of a company's advertising expenditure and brand value on return on assets?"

The corollary research question, in relation to the main research questions stated above is as follows:

2. Is there a joint effect of a company's advertising expenditure and brand value on stock return?"

Following the above-presented research questions, the researcher then proposes to test the following research hypotheses:

Hypothesis 1: Advertisement expenditure and brand value are jointly and positively associated with return on assets.

Berkowitz, Allaway, and D'Souza (2001a, 2001b) demonstrated that advertising has a lagging effect. This lagging effect can last up to 3 to 4years (Abraham and Lodish 1990; Lodish et al. 1995; Naik 1999); similarly, Eng and Keh (2007) effectively used a model that lasted for 4 years. Consistent with Rao (1972), Srinivasan and Weir (1988) and Stafford, Lippold and Sherron (2003), this paper will use the current effects regression model to specify the lag structure. According to Saunders (1987), this model functions as well as the more complex ones. The underlying regression equation for hypothesis 1 would be:

$$RY_{it} = \alpha + \beta_1 BV_{it} + \beta_2 AER_{i(t-j)} + \beta_3 (BV_f t * AER_{i(t-j)}) + e_t$$

Where RY_{it} = ROA in year *t* for a firm *i*, where i=1, 2, 3….17 and *t* = 1, 2,3….7

BV_{it} is the brand value at time *t* for firm *f* and $AER_{i(t-j)}$ is adverting expenditure at time t-j where j =1, 2, 3….to 7.

The null and alternate hypotheses to be tested are;

$H_0 : \beta = 0$
$H_1 : \beta > 0$

The researcher will use one-tail t test to test hypothesis 1.

Because adverting has carry over effects over time, to test hypothesis 1 for each year *t*, the brand values and advertising expenditure of the sample firms are regressed against their return on assets first with 0 time lag and then with one year, two years, and all the possible time lags. Therefore for the year 2000 brand values and advertising expenditure of sample companies are regressed against their return on assets with no time lag, for year 2001, both zero and one year time lag are regressed, for year 2002 with zero, one year, and two years time lag, and so on. The joint effects of advertising expenditure and brand value on return on assets from the result of the hypothesis test. This researcher will tabulate the information obtained from this test of hypothesis to find out the pattern of joint advertising and brand effects on return on assets through time.

Hypothesis 2: Advertising expenditure and brand value are jointly and positively associated with firms' stock return.

The researcher will use the following regression model to test the effect of brand value and advertising on stock return:

$$SR_{it} = \alpha + \beta_1 BV_{it} + \beta_2 AER_{i(t-j)} + \beta_3 (BV_{ft} * AER_{i(t-j)}) + e_t$$

Where:

SR_{ft} = Stock return, $\{$ $(MktCap_{ft} - MktCap_{f(t-1)} + TD_{ft}) / MktCap_{f(t-1)}$, percentage return on the stock of the company

($MktCap_{ft}$, market capitalization of firm *f* at time *t*

$MktCap_{f(t-1)}$, market capitalization of firm *f* at time *t-1*

TD_{ft}, total dividends paid by firm *f* at time *t*

$BV_{f(t-i)}$ = brand value in year $t-i$; i = 0, 1, 2, 3.....to 7

$AER_{f(t-j)}$ is adverting expenditure at time t-j where j =1, 2, 3….to 7.

The null and alternate hypotheses to be tested are;

$$H_0 : \beta = 0$$
$$H_1 : \beta > 0$$

The researcher will use one-tail t test to test hypothesis 2.

Brand values and advertising expenditures of the sample firms will be regressed against their stock return, starting with 0 time lags to 6 years time lag. The joint effect of advertising expenditure and brand value on stock return will be determined from the hypothesis test result. This researcher will tabulate the information obtained from this test of hypothesis to find out the pattern of the joint effects on stock return through time.

Theoretical Perspectives of the Study

The research questions and hypotheses presented in this dissertation proposal are premised on the RVB theory or strategy. This resource-based view is in turn based on Selznick's (1957) pivotal work on "distinctive competencies" and Penrose's (1959)

argument that a company is a collection of resources, with its performance dependent on the company's ability to effectively and efficiently use all these different resources.

The RVB theory was subsequently reformulated by Wernerfelt (1984), Barney (1986), and Dierickx and Cool (1989) who showed how such intangible resources can be identified and how the latter can be managed in a way as to remain or become sources of sustainable advantage for organizations. RBV argues that, instead of constantly adjusting the company's operating category to fit environmental changes, the better strategy would be sustained construction of the company's core resources. Thus, organizations with abundant resources can then survive and grow due to their competitive advantages regardless of external environmental changes which under the ordinary course of things would have affected the growth of the company. Furthermore, this theory argues that the greater the degree of intangible resources that an organization has, then the greater the sustainability of competitive advantage for the company.

As applied to this study, should the RBV theory hold true, then it can be expected that the predictor variables of reputation quotient and brand value will be associated with the criterion variable return of assets since according to the RBV, such intangible resources are important sources of competitive advantage for a company.

Setting and Sample

Population

Original Equipment Manufacturers (OEM) of personal computer (PC) products often produce computers with the same quality and often carry the same manufacturer's warranty and specifications. Pure PC OEM's, corporations that derive more than 80% of their revenue from the manufacturing and sale of computer products and are listed on the Interbrand/Business Week annual brand value list will be the focus of the study. Therefore, the population of this research study is all PC based firm's that have consistently appeared on the Interbrand/businessWeek global brand from 2000 to 2007. These firms will be the focus of this study.

Sample

The sample in this study is the same as the population which will include all PC (Hardware, Software, and Internet) based firms which have appeared in the Top 100 firms in Interbrand's Best Global Brands listings from 2000 to 2007. Currently 17 PC firms are listed in the Interbrand's Best Global Brands listings from 2000 to 2007. Therefore, the sample under study will be 17 companies. Although there are several brand value sources, such as, Interbrand/BusinessWeek, Millward Brown, Corebrand and Financial World. This study will use data only from the Interbarnd/Business*W*eek annual Global brand list. This list is the most widely known and have accurately predicted both S&P 500 Index and MSCI World Index. Soh, M. (2005) also used the Interbrand data. This study will measure advertising expenditures of these firms and its relation to brand value creation gathering data from year 2000 to 2007.

Data Sources

Data Collection

Brand value is determined by assessing the present value of a brand and its future returns (Herremans, Ryans, & Aggarwal, 2000). To effectively examine the relationship between advertising expenditures and brand value, it is necessary to first find a database of externally reported brand values. In this case, this study will make use of statistical data collected from Interbrand and/or Business Week. Interbrand ranks only the strength of individual brand names and not portfolios of brands. To be valued and ranked, a company must meet the following conditions:

i. There must be substantial publicly available financial data
ii. The brand must have at least one-third of revenues outside of its country-of-origin
iii. The brand must be a market-facing brand
iv. The Economic Value Added (EVA) must be positive
v. The brand must not have a purely B2B single audience with no wider public profile and awareness

In computing the brand value, Interbrand uses analysts reports (JPMorgan Chase, Citigroup and Morgan Stanley) and projects 5 years of sales and earnings tied to each brand's products and services (Helm, B. 2008). To compute final earnings attributable to intangible assets, taxes, operating costs and charges for the capital employed are removed (Interbrand, 2008). Similarly, they estimate the brand's effect on earnings relative to other

intangible assets such as patents and management strength. Financial data of a firm and its qualitative and quantitative analysis are used to compute the net present value of those earnings. The earning is further discounted against current interest rates and the overall brand's risk profile to factor in brand strength. Other factors considered in the brand evaluations includes: market leadership, stability, and global reach or the ability to cross both geographic and cultural borders. The final result values the brand as a financial asset. *BusinessWeek* and Interbrand believe this figure comes closest to representing a brand's true economic worth" (Helm, B. 2008)

This research used of corporate brand values published in Business Week's Best Global Brands listings from 2000 to 2007. It will also review 10Ks and 10Qs filled with the Securities and Exchange Commissions (SEC), corporate annual reports, Yahoo financial data, and available financial reports of the selected companies from 2000 to 2007.

As such, the study will make use of secondary research for its data collection. Secondary Research is about the examination of the studies conducted in the past by other researchers regarding a specific subject. It involves data previously published by other researchers, and other second-hand data such as books and articles (Creswell & Plano-Clark, 2006). The secondary sources thus that will be mainly used for this dissertation are case studies and relevant related literature on brand value creation, brand management, and advertising turnover. Other sources that will be used would mainly be statistical data on the economic and financial performance of Intel, and its selected competitors, based on figures reported in Interbrand/Business Week.

Variables and Sources

- Corporate brand value*: Dependent variable*. This data was extracted from the annual Interbrand/Business Week list
- Financial scorecard*: Dependent variable* - Return on assets (ROA) , a ratio of net income to total asset was computed based on data collected from the 10K, 10Q and corporate annual financial reports .
- Advertising Expense: *Independent variable.* Advertising expense was collected from corporate financial reports – 10K and 10Q and validated with data from Nielson Media monitors and or Adage.

One glaring problem that this study may encounter is that the different companies chosen for analysis and comparison may make use of various definitions of terms with respect to describing their individual and respective net profit financial numbers required for computing its ratio of profits to assets. As such, only relevant data published in Business Week/Interbrand, from the years 2000 to 2007 specifically, as well as available financial statements from the selected companies filed with the Securities and Exchange Commission (SEC) were used for this study.

The reason why there is a need to limit the sources of data is to avoid the problem of having varying definition of financial and other business terms which may result in confusion. The assumption in using published data from reputable sources such as Business Week is that such data has been consistently computed from year to year to allow for easier comparison of the performance of companies, and even of industries.

Thus, for data collection, the study will make use secondary research. Time and financial constraints have prevented gathering primary sources from surveys and interviews.

Data Analysis

This study intends to establish whether there is a joint and positive effect of advertising expenditure and brand value on return on assets and stock return Parametric statistics such as the measurement of mean, standard deviation, and variance, will be used to describe key features of the data collected on all PC based firms listed on the Interbrand global brand value list from 2000 to 2007 and the advertising expense and financial data from the 10Ks and 10Qs of the firms.

Advertising Turnover

The research study used Herremans, et al., (2000) concept of "advertising turnover" in order to understand the relationship between advertising spending and brand value. Advertising turnover is the calculation used to not only convey the relationship of the company's advertising expenditures to its brand value but, more importantly, it measures how effectively and efficiently a company's advertising expenditures has been converted to positive brand value for its products (Herremans, Ryans, & Aggarwal, 2000).

The Interbrand Model

In analyzing the data, the dissertation proposal also takes note of the Interbrand Model which was also used in Business Week for the brand value computation for firms in its Best Global Brands listing. The Interbrand Model adapts an Economic Use

Approach in assessing brand value. Such an approach combines both brand equity and financial measures. The Interbrand (2004) study describes the Economic Use Approach and its advantages as such:

> the economic use approach is based on fundamental marketing and financial principles:
>
> - The marketing principle relates to the commercial function that brands perform within businesses. First, brands help to generate customer demand. Customers can be individual consumers as well as corporate consumers depending on the nature of the business and the purchase situation. Customer demand translates into revenues through purchase volume, price and frequency. Second, brands secure customer demand for the long term through repurchase and loyalty.
> - The financial principle relates to the net present value of future expected earnings, a concept widely used in business. The brand's future earnings are identified and then discounted to a net present value using a discount rate that reflects the risk of those earnings being realized. (Interbrand, 2004, pp. 6-7)

Test of Hypotheses

Hypothesis 1:

Advertising expense and brand value are jointly and positively associated with return on assets (ROA).

Berkowitz, Allaway, and D'Souza (2001a, 2001b) demonstrated that advertising has a lagging effect. This lagging effect can last up to 3 to 4years (Abraham and Lodish

1990; Lodish et al. 1995; Naik 1999); similarly, Eng and Keh (2007) effectively used a model that lasted for 4 years. Consistent with Rao (1972), Srinivasan and Weir (1988) and Stafford, Lippold and Sherron (2003), this paper will use the current effects regression model to specify the lag structure. According to Saunders (1987), this model functions as well as the more complex ones. The underlying regression model for hypothesis 1 would be:

$$RY_{it} = \alpha + \beta_1 BV_{it} + \beta_2 AER_{i(t-j)} + \beta_3 (BV_{f}t * AER_{i(t-j)}) + e_t$$

Where RY_{it} = ROA in year *t* for a firm *i*, where i=1, 2, 3….17 and *t* = 1, 2,3….7

BV_{it} is the brand value at time *t* for firm *f* and $AER_{i(t-j)}$ is adverting expenditure at time t-j where j =1, 2, 3….to 7.

The null and alternate hypotheses to be tested are;

$H_0 : \beta = 0$
$H_1 : \beta > 0$

The researcher used one-tail *t* test to test hypothesis 1.

Farley, and Lehmann (1984) and Berkowitz, Allaway, and D'Souza (2001a, 2001b) have shown that advertising has carryover (or "durable") effect over time. Therefore, to test hypothesis 1 for each year *t*, the brand values and advertising expenditure of the firms are regressed against their return on assets first with 0 time lag and then with one year, two years, and all the possible time lags. For the year 2000 brand values and advertising

expenditures of sample companies are regressed against their return on assets with no time lag, both zero and one year time lags are regressed for the, for year 2002 with zero, 1 year, and 2 years time lag, and so on. The study intends to use the information obtained from the test of hypothesis to determine the pattern of joint effects of advertising and brand value on return on assets through time. This method provides for the standardized version of covariance, which is an index to indicate the extent of the linear relationship between two continuous variables. In other words, the Pearson Correlation Coefficient describes the extent to which two continuous variables "covary" with each other at a constant rate.

The researcher will use the regression of brand value and advertising expenditure on return on assets to predict values of y when values of x are given. Rejection of the null hypothesis implies that advertising and brand value have joint and positive effects on return on assets. This researcher will tabulate the information obtained from this test of hypothesis to find out the pattern of the effects advertising effects and brand value on return on assets through time.

Hypothesis 2:

Advertising expense and brand value are jointly and positively associated with firms stock return.

The hypothesis establishes whether there a joint and positive effect of advertising expenditure and brand value on stock return. The researcher will use the

following regression model to test the joint effect of brand value and advertising on stock return:

$$SR_{it} = \alpha + \beta_1 BV_{it} + \beta_2 AER_{i(t-j)} + \beta_3 (BV_{ft} * AER_{i(t-j)}) + e_t$$

Where:

SR_{ft} = Stock return, $\{$ $(MktCap_{ft} - MktCap_{f(t-1)} + TD_{ft}) / MktCap_{f(t-1)}$, percentage return on the stock of the company

($MktCap_{ft}$, market capitalization of firm *f* at time *t*

$MktCap_{f(t-1)}$, market capitalization of firm *f* at time *t-1*

TD_{ft}, total dividends paid by firm *f* at time *t*

$BV_{f(t-i)}$ = brand value in year $t-i$; i = 0, 1, 2, 3.....to 7

$AER_{f(t-j)}$ is adverting expenditure at time t-j where j =1, 2, 3….to 7.

The null and alternate hypotheses to be tested are;

$$H_0 : \beta = 0$$
$$H_1 : \beta > 0$$

One-tail *t* test was used to test hypothesis 2.

Chu and Keh (2006) and Eng and Keh (2007) noted the lagged effect of brand value. To test hypothesis 1 for each year *t*, the brand values and advertising expenditures of the firms are regressed against their stock return first with 0 time lag and then with one year,

two years, and all the possible time lags. For the year 2000 brand values and advertising expenditures are regressed against stock return with no time lag, in year 2001 the regression is performed with zero time lag and one year time lag, for year 2002 with zero, one year, and two years time lag, and so on. The information obtained from this test of hypothesis are tabulated to find out the pattern of and joint effect brand value and advertising expenditure on stock return through time. Brand values and advertising expenditures of all the PC based firms listed on the Interbrand global brand value list from 2000 to 2007 are regressed against their stock return, starting with 0 time lag to 6 years.

The regression of the joint effect of brand value and advertising expenditure on stock return predicts the values of stock return when values of brand value and advertising expenditures are given. Rejecting the null hypothesis implies joint and positive effect of brand value and advertising expenditure on stock return. This researcher tabulated the information obtained from this test of hypothesis to determine the joint effect of brand value and advertising expenditure through time.

Chapter Summary

This study used the resource-based view (RBV) theory of strategy, which proposes that internal resources in the firm contribute to the latter's sustained growth. In this case, the primary internal resource sought to be examined was a company's corporate brand value. To pursue the RBV strategy, this study used of quantitative research method. The quantitative research method was used for statistical analysis, specifically

through the use of descriptive statistics and Pearson correlation coefficient analysis. These methods were used mainly to assess the correlation between advertising expenditures and corporate brand value.

The data collected for this dissertation came from secondary sources. Corporate brand values for all the PC based firms will be gathered from Business Week/Interbrand global brand list for the period of 2000 to 2007 (or eight years). The companies selected belong to the Top 100 of Business Week's Best Global Brands listing. The advertising turnover of the companies selected will also be computed to determine the joint effect of advertising expenses and brand value on return on assets and stock return. Of these firms, Intel has been the major company selected as the topic of research. The other firms will be analyzed mostly from a comparative viewpoint in order to determine how Intel has been successful or unsuccessful in converting its advertising expenses to improve or sustain its competitive advantage and ultimately, strengthen its brand value over a long-term period.

As such, the study worked around two main hypotheses which focused on the joint effects of advertising expense and brand value on return on assets and stock return of a firm over time. Chapter 4 described the results and the statistical methodologies used in the study. The first section covered the research questions and hypotheses, followed by the description of the research and statistical techniques employed. Second part of this section covered presentation and analysis of results. The researcher also used descriptive and inferential statistics to answer the original research questions through the test of

hypothesis. The chapter concluded with a summary of the results and a brief preview of chapter 5.

Chapter 5 summarized the research findings presented in chapter 4. This is Followed by the summary is the research purpose, research questions and related hypothesis. The researcher presented detailed interpretation of the results, key conclusions and recommendations.

CHAPTER 4:

RESULTS

Introduction

This chapter describes the results and the statistical methodologies used in the study. The first section will cover the research questions and hypotheses, followed by the description of the research and statistical techniques employed. Second part of this section will cover presentation and analysis of results. The researcher will use descriptive and inferential statistics to answer the original research questions through the test of hypothesis stated in prior chapters. The section will conclude with a summary of the results and a brief preview of chapter 5.

Research Purpose and Research Questions

The purpose of this study is to examine the joint impact of brand value and advertising on corporate financial performance and on stock return in the PC industry. The underlying theoretical basis of this research study is the Resource-Based View (RBV) theory. The RBV strategy provides that the more intangible resources (brand value) a company has, then the greater it can sustain its competitive advantage - return on assets and stock return (Barney, 1986). Based on the research objectives presented, the main research questions to test this prediction premised on the RBV theory of strategy, are as per the following:

1. Is there a joint and positive effect of a company's advertising expenditure and brand value on return on assets?"

2. Is there a joint and positive effect of a company's advertising expenditure and brand value on stock return?"

Prior to answering the two research questions, a detailed description of the statistical methods employed – pooled regression, fixed effects, random effects and associated statistical tests are presented. The results and interpretation of the modeling procedures are in the section after the descriptive statistics section.

The Hypotheses

This researcher proposes the following hypotheses based on the research questions outlined above.

Hypothesis 1: Advertisement expenditure and brand value are jointly and positively associated with return on assets.

The underlying regression equation is:

$$RY_{it} = \alpha + \beta_1 BV_{it} + \beta_2 AER_{i(t-j)} + \beta_3 (BV_f t * AER_{i(t-j)}) + e_t$$

Where RY_{it} = ROA in year *t* for a firm *i*, where i=1, 2, 3….17 and *t* = 1, 2, 3….7

BV_{it} is the brand value at time *t* for firm *f* and $AER_{i(t-j)}$ is adverting expenditure at time t-j where j =1, 2, 3….to 7.

Hypothesis 2: Advertising expenditure and brand value is jointly and positively associated with firms' stock return.

The underlining regression equation is:

$$SR_{it} = \alpha + \beta_1 BV_{it} + \beta_2 AER_{i(t-j)} + \beta_3 (BV_{ft} * AER_{i(t-j)}) + e_t$$

Where:

SR_{ft} = Stock return, $\{$ $(MktCap_{ft} - MktCap_{f(t-1)} + TD_{ft}) / MktCap_{f(t-1),}$ percentage return on the stock of the company

($MktCap_{ft}$, market capitalization of firm *f* at time *t*

$MktCap_{f(t-1),\ market}$ capitalization of firm *f* at time *t-1*

TD_{ft}, total dividends paid by firm *f* at time *t*

$BV_{f(t-i)}$ = brand value in year $t-i$; i = 0, 1, 2, 3.....to 7

$AER_{f(t-j)}$ is adverting expenditure at time t-j where j =1, 2, 3….to 7.

Methodology

Regression using Microsoft Excel

Using excel, the researcher considered each year of the sample period as a cross-section of 17 companies and ran the regressions with all possible combinations of independent variables for years 2000 through 2007 with no time lags. The researcher also ran the regression with various time lags. Return on asset (ROA) regressed against

brand value (BV), advertising expenditure (AER), and interaction effect (BV*AER) for all possible combinations of years.

Table 2

Correlations Among Variables for Model ROA

	ROA	*BV*	*AER*
ROA	1		
BV	0.272561	1	
AER	-0.11844	0.388362	1

Based on t test, the correlations between variables in ROA model are statistically significance (p-value 0.00, at 0.01 level). However, the regressions results for each year of the sample period as a cross-section of 17 companies, with no time lag and with all possible time lags did not produce results that could be generalized. The brand value coefficient was significant only for the years 2002 and 2007, with no lags. All the lagged equations produced insignificant coefficients. The coefficient of interaction term was insignificant for all possibilities.

Table 3

Correlations Among variables for SR Model

	SR	*BV*	*AER*
SR	1		
BV	0.034306	1	
AER	0.001847	0.388362	1

Correlation is not statistically significant

SR regression model with interaction.

Although there is positive correlation between SR and BV (0.034306) and between SR and AER (0.001847), the correlations are not statistically significant.

However, the regressions results for each year of the sample period as a cross-section of 17 companies, with no time lag and with all possible time lags did not produce results that could be generalized. The brand value coefficient was significant only for the year 2007, with no lags. All the lagged equations produced insignificant coefficients. The coefficient of interaction term was insignificant for all possibilities.

Residualization Method

The data presented a challenge for analysis because it consisted of repeated measures. If the independent variables had been categorical in nature, simple ANOVA or MANOVA would have been appropriate. However, the independent variables were continuous scales. It would not be appropriate to treat all 8 years of observations as independent cases due to correlation between the 8 years of observations, as they occurred within the same organizations. The researcher used successive residualization method (Kane, 2005) to remove the dependency between the repeated measures so that all overlapping variances were counted only once and all unique variances were retained. This was a two-step procedure. In the first step, to ensure that the maximum amount of true variance in the set of variables were retained, the variables were arranged in order of the amounts of variance they shared with the k-1 remaining variables that have not been assigned an ordinal position. The second step consisted of multiplying the

reordered data matrix by the inverse of the Cholesky decomposition of the correlation matrix. The resulting data were then standardized within each variable. This produced a new set of variables which retained all of the variance in the original set of variable but which are orthogonal (i.e., uncorrelated) to each other. Since these representations of all years of observation are now independent of each other, they were treated as independent observations on a single variable.

Although the researcher arrived at the same result using regression in excel and by the use of residualization method, this study will, however, use the time series of cross-sections (TSCS) or panel method for the analysis because of its rigor and higher level of accuracy.

Panel Data Modeling

Data sets that combine time series and cross sections are common in economics. Referred to as panel data sets, this kind of data contain observations on thousands of individuals or families, each observed at several points in time. These data sets provide rich sources of information. Modeling in this setting, however, calls for some complex specifications.

The data collection in this research contained observations on 17 firms; each observed from 2000 to 2007, that is, the data actually varied through time and across space. Data of this nature is commonly modeled as time series of cross-sections (TSCS) or as panel data sets. Time effects are often viewed as transitions or discrete changes of state. They are typically modeled as specific to the period in which they occur and are not

carried across periods within a cross-sectional unit. Panel data sets are more oriented toward cross-section analyses; they are wide but typically short.

The advantage of panel data model is obvious. First, it increases the number of observations. For this dataset, once a panel data analysis is performed, the researcher can combine eight years of data instead of using only one year of data. Secondly, the fundamental advantage of a panel data analysis over a cross section analysis is that it will allow the researcher great flexibility in modeling differences in behavior across individuals.

Ordinary List Square (OLS) regression model is based on the assumptions of constant variance and independent error terms. Inappropriately fit panel data with OLS regression model will lead to violation of the assumptions because of heteroscedasticity across units and possible auto correlation across time.

General Model of Panel Data Analysis

The general model framework for regression analysis using panel data approach is

$$Y_{it} = a_i + \beta X_{it} + \varepsilon_t$$

Where, $i = 1,2,\ldots\ldots N$ represents individual units (or groups) in the cross sections, $t=1, 2, 3,.T$ represents time, a_i is the intercept for unit i, β is the raw vector if K coeffiecients, X is column vector for K independent variable and e_{it} is the error term.

The general model expressed above can take three possibilities:

1. Pooled Regression without Individual effects: If $\boldsymbol{a_i}$ contains only a constant term for all the units, that is individual units have the same intercept , then ordinary least

squares provides consistent and efficient estimates of the common α and the slope vector β, provided assumptions of OLS are met.

2. Fixed Effects (FE): In the FE model each unit *i* has its distinct intercept $\boldsymbol{a_i}$ and each $\boldsymbol{a_i}$ is a nonrandom constant. The regression equation is solved using OLS by including $\boldsymbol{K}$ dummy variables in the model which take values of **1** if $i = j$ and **0** if $i \neq j$. This model is often referred to as Least Square with Dummy Variables (LSDV).

3. Random Effects (RE): In RE model it is assumed that each $\boldsymbol{a_i}$ contains a constant term, which is the same for all units, and random term, which is different for each unit. So, the RE model would be

$$Y_{it} = a_{+Ui} + \beta X_{it} + \varepsilon_{it}$$

Where, $i= 1,2,\ldots\ldots N$ represents individual units (or groups) in the cross sections, $t=1, 2, 3,.T$ represents time, a_i is the intercept for unit i, U is the random heterogenity specific to the i'th observation, β is the raw vector of K coeffiecients, X is column vector for K independent variable and e_{it} is the error term.

The RE model is solved using the Generalized Least Square (GLS) method

Testing for Fixed Effects

The *t* test for $\boldsymbol{\alpha_i}$ can be used for a test of the hypothesis that αi equals zero. This hypothesis about one specific group, however, is typically not useful for testing in this regression context. If we are interested in differences across groups, then we can test the hypothesis that the constant terms are all equal with an F test. Under the null hypothesis

of equality, the efficient estimator is pooled least squares. The F test assess whether the coefficients on these n − 1 individual effect variables are all zero. Rejection of the F test would suggest that fixed effects model is preferable to pooled regression model.

Testing for Random Effects

A Lagrange Multiplier (LM) test is used to test for the significance of random effects model with respect to simple linear regression. Motivation of this test is to assess whether the classical regression model with a single constant term is appropriate for the data or not. Rejection of the null hypothesis would be in favor of the random effects model. But, it is best to reserve judgment on that, because there is another competing specification that might induce these same results, the fixed effects model. Hausman's specification test is developed to address the selection between fixed effects model and random effects model.

Hausman's Specification Test

From a purely practical standpoint, the fixed effect is costly in terms of degrees of freedom lost. On the other hand, the fixed effects approach has one considerable virtue. There is little justification for treating the individual effects as uncorrelated with the other regressors, as is assumed in the random effects model. The random effects treatment, therefore, may suffer from the inconsistency due to this correlation between the included variables and the random effect.

The Hausman's specification test is used to test the hypothesis that the individual effects are uncorrelated with the other regressors in the model. Acceptance of this test, which suggests that these effects are uncorrelated with the other variables in the model, paired with rejection of the LM test, which is decisive that there are individual effects, would suggest that the random effects model is the better choice.

Results

The researcher used STATA and SPSS for the analysis. The result of the OLS, fixed effects, and random effects models (two-way error component regression) for hypotheses 1 and 2 are presented below.

Hypothesis 1

Advertisement expenditure and brand value are jointly and positively associated with return on assets (ROA).

The underlying regression equation is:

$$RY_{it} = \alpha + \beta_1 BV_{it} + \beta_2 AER_{i(t-j)} + \beta_3 (BV_f t * AER_{i(t-j)}) + e_t$$

Where RY_{it} = ROA in year *t* for a firm *i*, where i=1, 2, 3….17 and *t* = 1, 2, 3….7

BV_{it} is the brand value at time *t* for firm *f* and $AER_{i(t-j)}$ is adverting expenditure at time t-j where j =1, 2, 3….to 7.

Description of the Sample and the Study Variables

The summary statistics for variables with respect to return on asset are presented in Table 4. The findings show that the range of brand value is very large. The total observations are 136 (data of 17 firms from 2000 to 2008).

Table 4

Descriptive Statistics for Variables in ROA Model

	n	Minimum	Maximum	Mean	Std. Deviation
ROA	136	-10.400	61.930	8.77610	8.792380
BV	136	.	70200.000	17872.10294	1.723043E4
AER	136	3.540	3922.000	666.37831	927.026805

The correlations between variables in ROA model are presented in Table 6. Although the correlations are not very high (i.e, correlations ranged from -0.118 to 0.38), based a two tail t test, the correlation between brand value and advertising expenditure, and the correlation between ROA and brand value are statistically significant.

The researcher used the t test to determine the significance of the correlation coefficient, t distribution used was:

$$t = r\sqrt{\frac{n-2}{1-r^2}}$$

The degrees of freedom for entering the *t*-distribution is N – 2

Table 5

Correlations Among Variables for Model ROA

		ROA	BV	AER
ROA	Pearson Correlation	1.000	.273**	-.118
	p-value		.001	.170
BV	Pearson Correlation	.273**	1.000	.388**
	p-value	.001		.000
AER	Pearson Correlation	-.118	.388**	1.000
	p- value	.170	.000	

**. Correlation is significant at the 0.01 level (2-tailed).

Results for ROA Model

Hypothesis 1: Advertising expense and brand value are jointly and positively associated with return on assets (ROA).

To test the above hypothesis, three models - pooled regression, fixed-effects and random effects models were constructed and their appropriateness were assessed by specification test (t, F, LM, and Hausman test). Model and test results are shown in table 3. First, pooled regression model for ROA was constructed, assuming individual effect to be invariant across time and firms. Results from pooled regression are presented in Table 6.

ROA Model, Pooled Regression with interaction

The researcher first ran the regression of the model below:

$$ROA_{it} = \alpha + \beta_1[BV_{it}] + \beta_2[AER_{it}] + \beta_3[BV_{it} * AER_{it}] + \varepsilon_{it}$$

Results showed that there is convincing evidence that brand value is associated with ROA, even after accounting for the effect of advertising expenditure and the interaction effect between brand value and advertising expenditure(p-value<0.001, test is significant at 99% level). However, the interaction is not significant at 95% level, which means that the interaction effect is statistically not significant. The model is also not appropriate for regression, which is designed only for linear models. The third variable made the model nonlinear with high degree of collinearity (VIF = 12.449), to correct this,

the researcher transformed this model into a log-linear model (BV*AER, was removed) prior to running the regression analysis.

Table 6

Log-linear model: ROA Model, Pooled Regression with interaction

Model 1: log ROA = α + β1(log BV) + β2(log AER) + ε				
		Parameter Estimates		
Specification		bv	aer	Constant
Pooled Regression full	Coef.	0.904046	-0.34675	-4.94057
	Std. Err.	0.12347757	0.0553566	1.0517773
	t-value	7.3215385	-6.263968	-4.697353
	p-value	3.06E-11	6.08E-09	7.08E-06

Key: bv = logBV; aer = logAER

The estimate of regression equation for company *i* is shown below:

$$\log ROA_i = -4.94057 + 0.904046*\log BV_i - 0.34675 *\log AER_i + e_i$$

Results show joint and positive association between advertising expense and brand value on return on asset. (P-value, 0.0000; test is significant at 99% level). The interaction is also significant at 99% level, (VIF, 1.13) which means that the interaction effect is statistically significant.

Pooled regression was fitted again without interaction term. The result from reduced pooled regression is presented in Table 7.

Table 7

ROA Model, Pooled Regression without interaction

Model 2: ROA Model: $ROA_{it} = \alpha + \beta_1[BV_{it}] + \beta_2[AER_{it}] + \varepsilon_{it}$				
Parameter Estimates				
Specification		BV	AER	Constant
Pooled Regression reduced	Coef.	0.0001914***	-0.00251	7.024272***
	Std. Err.	4.47E-05	0.000831	1.049285
	t-value	4.28	-3.02	6.69
	p-value	0	0.003	0
	VIF	1.178	1.178	

The *p*-values in Table 4 indicate that both brand value and advertising have significant effect on ROA

Substituting the data to the regression equation:

$$ROA_i = 7.024272 + 0.0001914*BV_i - 0.00251*AER_i + e_i$$

The result suggests that 1 million increases in brand value would drive up ROA by 1.914% and this association is statistically significant (p-value is almost 0). One million increases in advertising expense would reduce ROA by 25.1%. The justification for negative effect of advertisement is that advertisement is expensed in the year that is

occurred while it takes time for advertisement efforts to affect sales and profitability. Therefore, given the fierce competition in the PC industry the findings of this research suggest that it takes more time that this study's sample period for advertisement expenditures to translate into positive returns.

To verify that the residuals meet the assumption of OLS, residuals were plotted against the predicted values of ROA, BV, AER, and the normal probability plot. As the two charts below indicate, the residual terms meet both the assumption of normality and the assumption of constant variance.

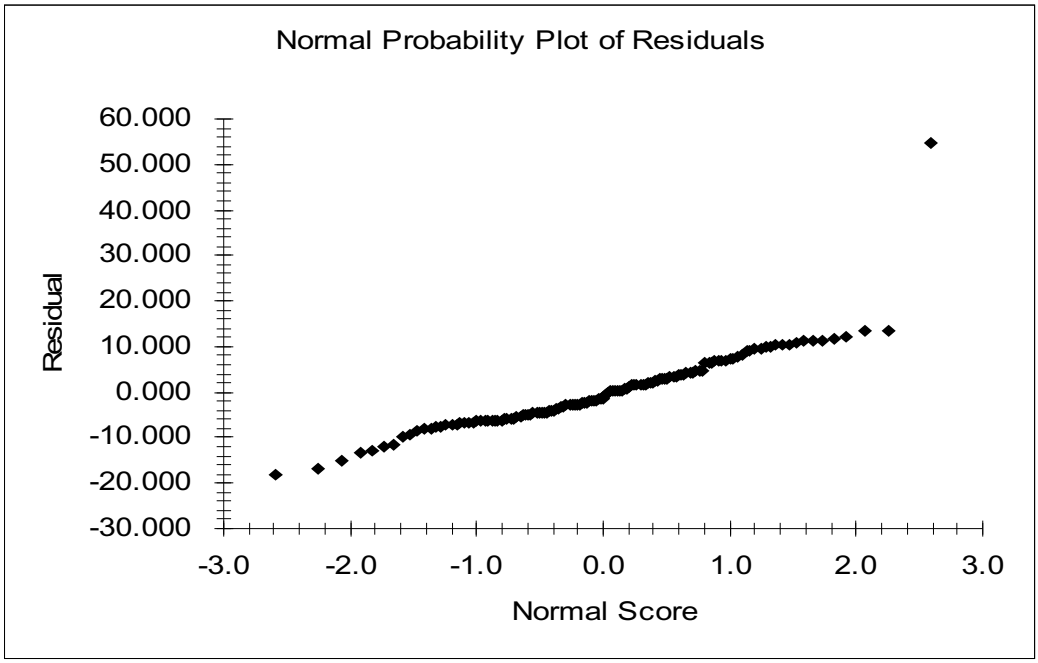

Figure 2. Normal probability plot of residuals.

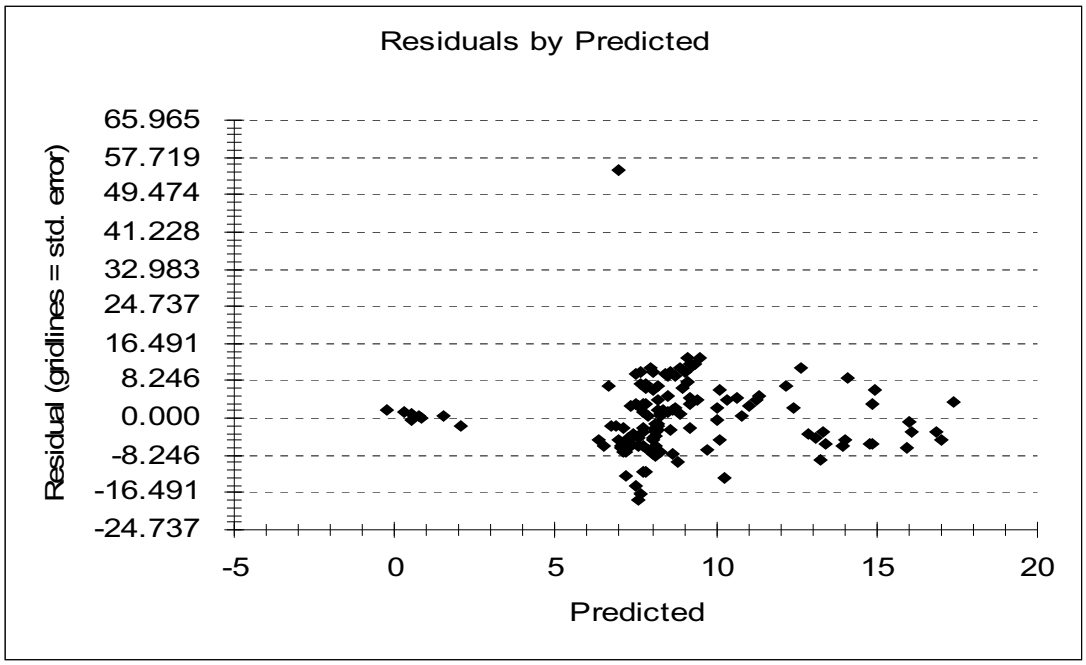

Figure 3. Residuals by predicted

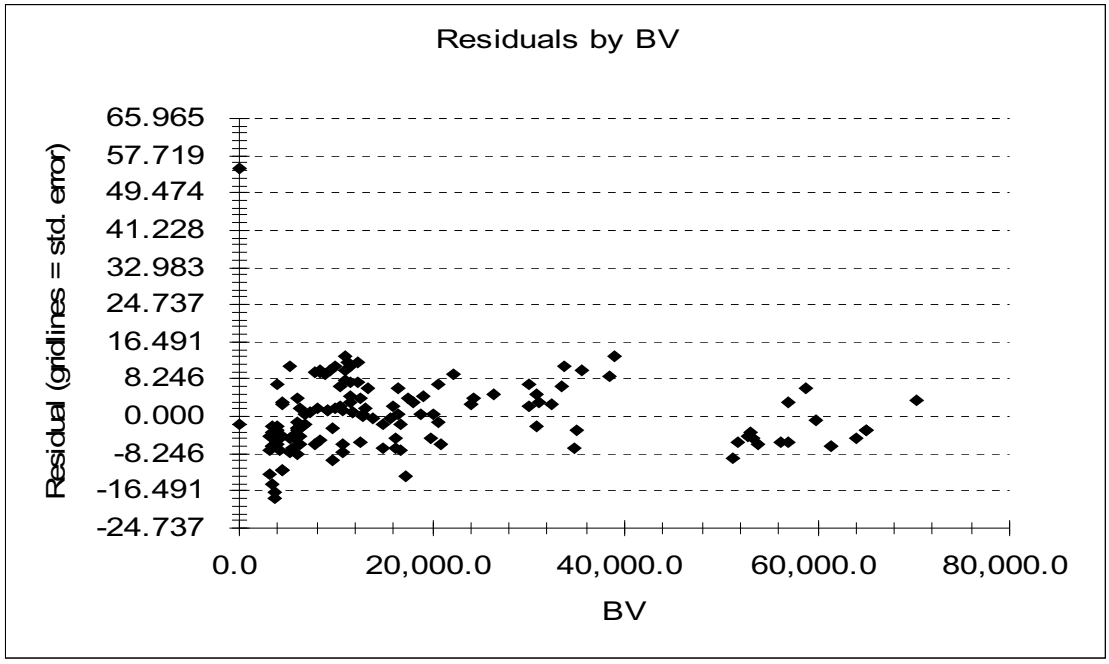

Figure 4. Residuals by brand value

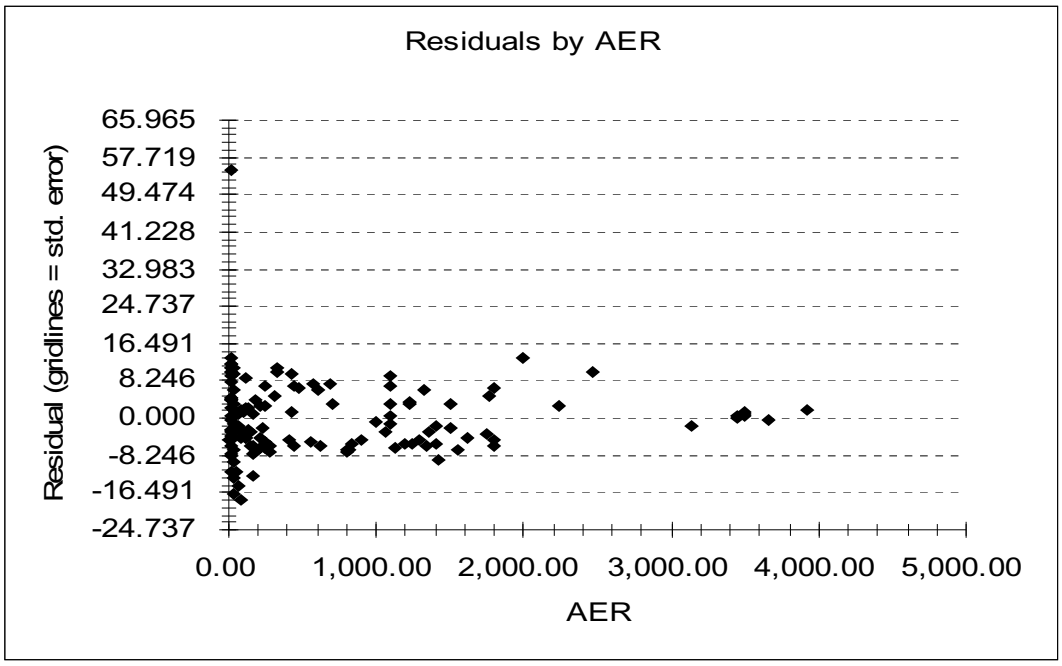

Figure 5: Residuals by advertising expense

The next approach is to fit panel data model for fixed effects and random effects separately. Results of fixed effects model is presented in Table 8.

Table 8

ROA Model, Fixed Effects

Model 3: ROA Model: $ROA_{it} = \alpha_i + \beta_1[BV_{it}] + \beta_2[AER_{it}] + \varepsilon_{it}$				
Parameter Estimates				
Specification		BV	AER	Constant
Fixed Effects	Coef.	-9.69E-05	0.0024423	8.881092
	Std. Err.	0.0001976	0.0035723	3.966095
	t-value	-0.49	0.68	2.24
	p-value	0.625	0.496	0.027
F test		F(2,117) =0.31 p-value=0.7351		

Substituting the data above the regression equation:

$$ROA_i = 8.881092 - 9.69E\text{-}05*BV_i + 0.0024423*AER_i + e_i$$

F test was conduct to see whether the pooled regression model could be the better one compared to the fixed effects model. Result show that the test is not significant at 95% level (F=0.31, p-value=0.7351), so we can conclude that the data is consistent with the null hypothesis that the pooled regression is a plausible model.

Turning to random effects model, results are shown in Table 9.

Table 9

ROA Model, Random Effects

Model 4: ROA Model: $ROA_{it} = \alpha + u_i + \beta_1[BV_{it}] + \beta_2[AER_{it}] + \varepsilon_{it}$				
Parameter Estimates				
Specification		BV	AER	Constant
Random Effects	Coef.	0.000131	-0.00141	7.378963
	Std. Err.	8.94E-05	0.001655	2.238147
	t-value	1.46	-0.85	3.3
	p-value	0.144	0.395	0.001
LM		Chi2=95.94*** p-value=0.0000		
Hausman		Chi2=2.84 p-value=0.2418		

Substituting the data into the regression equation:

$$ROA_i = 7.378963 + u + 0.000131*BV_i - 0.00141 *AER_i + e_i$$

The p-values for BV and AER are greater than 5% indicating that the coefficients of both BV and AER are insignificant. Besides, coefficient of AER is negative which means advertising is an expense that does not return anything in the short-run.

The null and alternate hypotheses to be tested are:

$H_0 : \beta = 0$
$H_1 : \beta > 0$

Lagrange multiplier (LM) test was used to asses the suitability of random effect model against pooled regression model. The LM test statistic follows the chi-square probability distribution with one degree of freedom. The critical value chi-square at 5% significance value with one degree of freedom is 3.84. Based on the least square residuals, the Lagrange multiplier test statistic is 95.94, which far exceeds the 3.84 critical value and, therefore, leads to the rejection of the null hypothesis. At this point, it is concluded that the pooled regression model is inappropriate for these data, suggesting that random effects model are preferable over pooled regression.

The Hausman test:

The null and alternate hypotheses to be tested are;

$H_0 : \beta = 0$
$H_1 : \beta > 0$

The Hausman test statistic follows the chi-square test statistic with (k-1) degrees of freedom, where k is the number of independent variables in the regression equation. The critical value of chi-square at 5% significance value with two degree of freedom is 5.99. The Hausman test statistic calculated from the data was 2.84, which is less than critical value, leading to not rejecting the null hypothesis. The hypothesis that the individual

effects are uncorrelated with the other regressors in the model cannot be rejected. Based together on the LM test results, which is decisive that there are individual effects, and the Hausman test, which suggests that these effects are uncorrelated with the other variables in the model, we would conclude that of the two alternatives we have considered, the random effects model is the better choice.

The average yearly brand value of selected firms from 2000 to 2007 is 17872.1 million. From random-effects model results, on average, brand value contributes 2.33 (17872.1*0.0001306) in ROA for each firm each year.

17,872.1 * 0.0001306 = 2.33

However, since the average advertising expenditure is 666.3783 million and the coefficient is negative, advertising on average decrease ROA by 0.93 for each firm each year.

Hypothesis 2

Hypothesis 2: Advertising expenditure and brand value is jointly and positively associated with firms' stock return.

The underlining regression equation is:

$$SR_{it} = \alpha + \beta_1 BV_{it} + \beta_2 AER_{i(t-j)} + \beta_3 (BV_{jt} * AER_{i(t-j)}) + e_t$$

Where:

SR_{ft} = Stock return, { (MktCap $_{ft}$ - $MktCap_{f(t-1)}$ +TD_{ft})/ $MktCap_{f(t-1),}$ percentage return on the stock of the company

(MktCap $_{ft}$, market capitalization of firm *f* at time *t*

$MktCap_{f(t-1),market}$ capitalization of firm *f* at time *t-1*

TD_{ft}, total dividends paid by firm *f* at time *t*

$BV_{f(t-i)}$ = brand value in year $_{t-i}$; $_{i}$ = 0, 1, 2, 3.....to 7

$AER_{f(t-j)}$ is adverting expenditure at time t-j where j =1, 2, 3….to 7.

The summarizing statistics for variables with respect to stock return are presented in Table 7. There is a slight difference between the descriptive statistics for Brand Value and total observation in Table 1 and Table 3. This is because year 2000 was used as the baseline year for the calculation of stock return and was dropped from sample. The total observations are 119 (data of 17 firms from 2001 to 2008).

Table 10

Descriptive Statistics for Variables in Stock Return Model

	N	Minimum	Maximum	Mean	Std. Deviation
SR	119	-1.120	1.980	.09798	.451717
BV	119	3103.000	65170.000	17779.46218	1.686939E4
AER	119	3.540	3922.000	668.66202	925.825153

The correlations between variables in SR model are presented in Table 11. The correlation between brand value and stock return is quite small (correlation=0.038) and

not significant. After dropping observation in 2000, the correlation between brand value and advertising expenditure dropped from 0.38 to 0.375, though still significantly significant. The researcher used a t test for this determination

Table 11

Correlations among variables for model SR

		BV	SR	AER
BV	Pearson Correlation	1.000	.039	.375**
	p-value		.675	.000
SR	Pearson Correlation	.039	1.000	.001
	p-value	.675		.988
AER	Pearson Correlation	.375**	.001	1.000
	p-value	.000	.988	

**. Correlation is significant at the 0.01 level (2-tailed).

Results for SR Model

To answer this questions, 3 models - pooled regression, fixed-effects and random effects models were constructed and their appropriateness were assessed by specification test(F, LM and Hausman test). Results for pooled regression Model with interaction term are presented in Table 12.

Table 12:

SR Model, Pooled Regression with interaction

Model 1: Stock Return Model: $SR_{it} = \alpha + \beta_1[BV_{it}] + \beta_2[AER_{it}] + \beta_3[BV_{it} * AER_{it}] + \varepsilon_{it}$					
		Parameter Estimates			
Specification		BV	AER	BV*AER	Constant
Pooled Regression full	Coef.	-4.23E-06	-8E-05	5.16E-09	0.13508
	Std. Err.	6.66E-06	0.000095	5.81E-09	0.086709
	t-value	-0.63	-0.84	0.89	1.56
	p-value	0.527	0.403	0.376	0.122

Substituting the data into the regression equation:

$$SR_i = 0.13508 - 4.23E\text{-}06 * BV_i - 8E\text{-}05 * AER_i + 5.16E\text{-}09 * BV_i * AER_i + e_i$$

However, all coefficients in the pooled regression model with interaction term are not significant at 95% level. Dropping the interaction term doesn't improve the results as can be seen from the results of reduce regression model in Table 13.

Table 13

SR Model, Pooled Regression without interaction

Model 1: Stock Return Model: $SR_{it} = \alpha + \beta_1[BV_{it}] + \beta_2[AER_{it}] + \varepsilon_{it}$

		Parameter Estimates		
Specification		BV	AER	Constant
Pooled Regression reduced	Coef.	1.19E-06	-7.44E-06	0.081768
	Std. Err.	2.68E-06	4.88E-05	0.062532
	t-value	0.44	-0.15	1.31
	p-value	0.657	0.879	0.194

Substituting the results into the regression equation:

$$SR_i = 0.081768 + 1.19E\text{-}06 * BV_i - 7.44E\text{-}06 * AER_i + e_i$$

One step further is to fit the data with fixed effects and random effects model under panel data analysis framework. Results from fixed effects model are shown in Table 12.

Table 14

SR Model, Fixed Effects

Model 1: Stock Return Model: $SR_{it} = \alpha_i + \beta_1[BV_{it}] + \beta_2[AER_{it}] + \varepsilon_{it}$				
Parameter Estimates				
Specification		BV	AER	Constant
Fixed Effects	Coef.	5.98E-06	0.0002694	-0.1885872
	Std. Err.	2.13E-05	0.0002928	0.3997765
	t-value	0.28	0.92	-0.47
	p-value	0.779	0.36	0.638
F test		F(2,117) =0.52		
		p-value=0.5981		

Substituting the result into the regression equation:

$$SR_i = -0.1885872 + 5.98E\text{-}06 * BV_i + 0.0002694 * AER_i + e_i$$

F test result show that the test is not significant at 95% level (F=0.52), so we can conclude that the data is consistent with the null hypothesis that the pooled regression is a plausible model. Results from random effects model are presented in Table 15.

Table 15

SR Model, Random Effects

Model 1: Stock Return Model: $SR_{it} = \alpha + u_i + \beta_1[BV_{it}] + \beta_2[AER_{it}] + \varepsilon_{it}$				
Parameter Estimates				
Specification		BV	AER	Constant
Random Effects	Coef.	1.19E-06	-7.44E-06	0.081768
	Std. Err.	2.68E-06	4.88E-05	0.062532
	t-value	0.44	-0.15	1.31
	p-value	0.656	0.879	0.191
LM		Chi2=0.72 p-value=0.3969		
Hausman		Chi2=1.06 p-value=0.5877		

Substituting the result into the regression equation:

$SR_i = 0.081768 + u + 1.19E\text{-}06 * BV_i - 7.44E\text{-}06 * AER_i + e_i$

Lagrange Multiplier test:

The null and alternate hypotheses to be tested are;

$H_0 : \beta = 0$
$H_1 : \beta > 0$

Lagrange multiplier test statistic is 0.72, which is not significant at 95% level. The result is consistent with the result from F test that pooled regression is the right choice for

stock return model. At this point, since fixed effects and random effects are not the appropriate model to choose from, the result of Hausman test is no longer of interest here. In conclusion, the study did not show statistically significant evidence to conclude that brand value and average expenditure are associated with firm's stock return. This further indicates the difficulties in predicting stock return.

Summary of Findings

There is substantial evidence showing that brand value is positively associated with ROA if firm-specific and time effects are assumed to be constant. The study also showed that there is a positive correlation between ROA and BV (0.273, significant at 0.01 levels – two tailed). Results show that there is convincing evidence that brand value is associated with ROA, even after accounting for the effect of advertising expenditure and the interaction effect between brand value and advertising expenditure(p-value<0.001, test is significant at 99% level). There was also negative effect between ROA and AER, which suggests that given the fierce competition the PC industry it takes time for advertisement expenditure to translate into positive returns. The study also found positive correlation between AER and BV (0.38, significant at 0.01 levels). But, the correlation between AER and BV does not suggest that there is serious multicolinearity in the regression model. The variance inflation factor (VIF) of brand value and advertisement expenditure in the pooled reduced regression ROA model is not very high (VIF=1.178), which showed that multicollinearity is not a serious problem in this model.

However, results for stock return model did not show any explanatory variable having significant effect on stock return, given the results presented above.

Since LM test showed that there is random effect but the panel data estimation did not give significant coefficients, the association between brand values and profitability is significant without controlling for the unobserved individual firm effects. As suggestive as the findings may be, inferences that go beyond these data are unwise. The data were summarized from available studies and may not be representative of any wider population. No causal interpretation can be made from this study given the observational nature of these data.

Chapter 5 focused on the meaningful interpretation of the results with recommendation for future direction in brand value appropriation.

CHAPTER 5:

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

Introduction

In this chapter, the researcher will start with a background of the study and summary of the research findings presented in chapter 4. Following the summary is the research purpose, research questions and related hypotheses. This chapter will conclude with interpretation of the results, key conclusions and recommendations.

Background

There is a consensus amongst researchers *(*Kimelman 1993; Sheinin and Biehal 1999; Chaudhuri 2002; Chu & Keh 2006; Eng & Keh, 2007*)* that investment in advertising results in key intangible assets, such as, Brand value (or brand equity), Product Differentiation, and Goodwill. Similarly, Mizik and Jacobson (2003) argued that brand-based advertising could create a comparative advantage for a firm through its ability to differentiate the firm's product. However, while brand value creation is generally regarded as a good thing, we need to have more concrete measures of brand value appropriation (i.e., extracting profits from brand value). Merely knowing the effect of brand value on purchase intent (Cobb-Walgren, Ruble, & Donthu 1995) is inadequate; rather, there is a need to understand the financial consequences of brand value (Chu and Keh 2006; Mizik and Jacobson 2003).

Summary of Literature Review

There has been a steady stream of research studying the financial impact of advertising and brand value. Some of the studies are: Contemporaneous association between advertising expenses and accounting and stock market returns (Erickson & Jacobson 1992); Advertising expenses and market value of the firm (Chauvin & Hirschey 1993); Advertising and perceived quality (Moorthy & Zhao 2000); Perceived quality and firm value (Aaker & Jacobson 1994); Brand attitude and firm value (Aaker & Jacobson 2001); Branding strategy and firm value (Rao, Agarwal, & Dahlhoff 2004); and Brand value and firm value (Barth et al. 1998; Kerin & Sethuraman 1998; Simon & Sullivan 1993).

Research Purpose, Research Questions, and Hypothesis

The purpose of this study was to examine the joint impact of brand value and advertising on corporate financial performance and on stock return in the PC industry. Based on the research objectives presented, the main research questions are:

1. Is there a joint and positive effect of a company's advertising expenditure and brand value on return on assets?"

2. Is there a joint and positive effect of a company's advertising expenditure and brand value on stock return?"

This researcher proposed the following hypotheses based on the research questions outlined above.

Hypothesis 1: Advertisement expenditure and brand value are jointly and positively associated with return on assets.

Hypothesis 2: Advertising expenditure and brand value is jointly and positively associated with firms' stock return.

Both the hypotheses were tested using similar statistical analysis and were presented here in a sequential manner. The primary focus here was the joint effects of advertising expense and brand value on

1. Return on assets (ROA) and
2. Stock return of the firm

Summary of findings

Table 16

Correlations Among Variables for Model ROA

		ROA	BV	AER
ROA	Pearson Correlation	1.000	.273**	-.118
	p-value		.001	.170
BV	Pearson Correlation	.273**	1.000	.388**
	p-value	.001		.000
AER	Pearson Correlation	-.118	.388**	1.000
	p- value	.170	.000	

**. Correlation is significant at the 0.01 level (2-tailed).

Table 17

Correlations Among Variables for Model SR

		BV	*SR*	*AER*
BV	*Pearson Correlation*	*1.000*	*.039*	*.375***
	p-value		*.675*	*.000*
SR	*Pearson Correlation*	*.039*	*1.000*	*.001*
	p-value	*.675*		*.988*
AER	*Pearson Correlation*	*.375***	*.001*	*1.000*
	p-value	*.000*	*.988*	

**. Correlation is significant at the 0.01 level (2-tailed).

Discussion

This dissertation described three research focuses. First, it described the relationship between an organization's internal and intangible resources and its ability to sustain competitive advantage over a long period. Second, this study discussed the relevance of brand value to the success and longevity of a company, particularly with regard to the operational and financial performance through ROA and stock return. Third, by analyzing the data of the top 17 PC based firms this proposal examined the joint effects of advertising and brand value on ROA and stock return.

This research described the relationship between advertisement and brand value in an organization. A term that conveys the relationship of advertising expenditures to a product's brand value is advertising turnover. It is a measure of how effective and efficiently a company has been able to convert its advertising spending into positive brand value. Multiple studies indicate that advertising has a positive effect on creating a

brand value that can be carried over 3 to 4 years. Therefore, the study focused on brand value and advertising as the two components to measure operational and financial performance of a company.

Second research focus was to discuss the relevance of a brand value to the success and longevity of a company. Branding as a concept has been around for many years now. Brands aid in identifying and segregating the products and services of one company from those of another. Looking at it from a customer's viewpoint, brands simplify shopping and make them feel confident of their decision of purchasing the good. Company heads have recognized the fact that the brand is the most intangible asset, and focus is needed on the creation of brand equity. It is essential to determine the attribute on which the brand derives its benefit. Advertisement plays a very important role in branding but does not always effectively and efficiently translate into monetary returns. Absence of advertisement can make people forget a big brand and a good advertisement has the potential to increase a brand value. Together, right advertising and good brand value may positively affect the sales of a product. This study describes a novel method to examine the combined effect of advertising and brand value on company's financial performance. This study also provided a baseline for future research on market trends on the variables described.

The ultimate goal of this study was to determine if advertisement expenses and brand value together have any influence on the financial performance of top 17 PC based firms. The effect of these variables on stock value and return on assets (ROA) was analyzed.

The analysis in chapter 4 indicated that the brand value and advertisement expense together may predict ROA. The individual effect of advertisement and brand value was also analyzed. This analysis shows that brand value itself correlates with ROA. Also, big PC brands spend more money on advertisements. However, a firm's advertising expenditure does not always indicate that it is going to result in a significant financial gain. Following a nonrandomized cross sectional study and a multiple regression model, the combined effect of brand value and advertisement expenses on ROA and stock return were determined. The results obtained from statistical analysis were plotted over time.

Similarly, this research indicated that stock returns may not be predicted from advertisement expenditure and/or brand value. This makes sense because if an algorithm could predict stock returns of a company, then all the shareholders would become millionaires. Due to the large numbers of variables contributing in determination of gain/loss of a firm, it is not possible to predict its stock return value, at least by this model. However, a study from 1994 to 2000 indicates that brand values may predict stock returns if high valued brands are taken into account (Fehle, Fournier, Madden, & Shrider, 2008). Future studies involving large number of brands and considering other variables such as market trends, brand values etc. can be designed using the above model.

This study further showed that advertising expense might be useful for fundamental analysis to predict the profit and stock returns of a firm. Therefore, advertising expense is in the interest of the firms as it favors stock return and assets returns. These findings are coherent with those from previous studies (Fehle et al., 2008) that suggest strong brand value as an indicator of return on assets. This analysis could be

extended by including advertising expense data from large number of firms to predict their profit and stock return. This will further enhance our understanding of how brand value and advertising influences return on assets and stock value.

The variables used for ROA model: total observations were 136, from years 2000 to 2008. The range of brand values was a big number, 70200 (Table 2). For the ROA model, although correlations did not fall in the high range (-0.118 to 0.38), the correlation between ROA and brand value (0.273) and the one between brand value and advertising expenditure (0.38) were found to be statistically significant (Table 3).

Results from pooled regression for ROA model showed that brand value is associated with ROA. The p-value after the test was 0.004 (p-value<0.001, test is significant at 99% level). However, the effect of interaction between brand value and advertising expenditure was not significant at 95% level (Table 6).

To remove bias, the pooled regression test was repeated omitting the interaction term (BV*AER). The p-value obtained thereafter was 0, which suggests that the association between brand value and ROA is statistically significant (Table 7). According to the results obtained, 1 million increases in brand value would trigger ROA to rise by 1.914. To test whether the random effect model is better than pooled regression, two significance tests were done: LM test and Hausman test. LM test on ROA model resulted in a p-value of 0 and Chi2 (Lagrange multiplier test statistic) to be 95.94, which is significant at 99% value. The Hausman test statistic; however, is 2.84, which is less than the 95% critical value (Table 9). But the individual effects are uncorrelated with other regressors in the model. So to conclude for ROA model, the random effects were a better

choice. The variables for SR model did not include the statistics for the year 2000, it was used as the baseline year for stock return estimation.

The total number of observations was 119 (Table 4). For the SR model, however, the correlation between SR and brand value was small (0.038) and not statistically significant. The correlation between brand value and advertising expenditure decreased from 0.38 to 0.375 after dropping the observation in the year, 2000 (Table 4). After doing a pooled regression analysis, a p-value of 0.527 was determined, and all the coefficients are statistically insignificant at 95% level (Table 10). Dropping the interaction term also gave a high p-value of 0.657, indicating that pooled regression is not a plausible model for the latter (Table 11). This indicates that pooled regression might be a better method of analysis for ROA model, but it is not a plausible method for SR model. In the case of SR model, LM test statistic is 0.72, with a p-value of 03969, which is not significant at 95 % level (Table 13). This concludes that pooled regression is a better choice for the stock return model.

Random effects analysis fits the best for ROA model, while pooled regression analysis is the best choice for Stock Return model. There is substantial evidence suggesting that brand value has a positive effect on ROA if firm-specific and time effects are assumed to be constant. However, results for stock return model don't suggest any explanatory variable having significant effect on stock return.

In future, each of the 17 firms can be individually analyzed according to the categories given by (Herremans, Ryans Jr., & Aggarwal, 2000). This will be another step to evaluate the marketing performance and but is not a part of this study. In a separate

study (Yeung & Ramasamy, 2007) similar to this, Yeung et al observed a positive correlation between brand value and stock return. This was contrary to what the reseracher observed. However, their study was a little different, as they did not look at firms dealing with specific commodities like this study did. They analyzed the data from 2000-2005 and only American firms were taken into account. In this study, the researcher used a specific approach to analyze the market trends of PC firms and the method can be used as a model for other firms. A study by (Eng & Keh, 2007) supports our data. They analyzed the brands published by Financial World from 1992-1996 instead of Interbrand. They showed that both advertising and brand value correlates with the future return of a firm. However, similar to what this study showed, they said that the impact of advertising and brand value may not predict the stock return. Interestingly, they observed that advertising expense promotes better brand sales and improves brand value, as this study did.

This study was very well focused on a sub group and the data was carefully analyzed in several different ways. However, only 17 big PC firms were taken into account that might not reflect a generalized picture. Therefore, the results might not be applicable to all industries. There might be a bias associated with selecting the brand names as the advertisement expense and a third party calculated brand value without having complete access to the PC firm's finances. The researchers very carefully eliminated this biased by selecting the firms on the basis of brand value given to them by Interbrand, a standard third party, which represent world's most valuable brands (Fehle, et al., 2008; Swystun, 2007). The researchers eliminated the variable that a high growth

firm and low growth firm may have different outcomes by focusing on the top 17 brands (Fama & French, 1993). The markets of these companies affect company's policy towards its advertising campaign. Therefore, future analysis in multiple markets may be taken into account. In a new market, advertisement might play an important role in comparison to the brand value.

PC brands selected in this study were reported by Interbrand among top 100 brands of the world suggesting that the study results are applicable for the PC firms with big brand values. Further quantitative studies are required which can include both local and international brands. Additionally, other factors such as locations, methods for advertising, consumer's accessibility to the products and advertisement material may be taken into account. Also, if the markets are efficient, investors may buy the shares and consumers may try new products (Fehle, et al., 2008). Therefore, market trend can be considered in future studies. Also, this study may serve as a model for other industries dealing with other goods.

The positive relationship between ROA and brand value and between BV and advertising expense are consistent with the work of Eng and Keh (2007), but contrasted with it as this study did not show any lag effect. The PC industry operates in intensely competitive landscape; it is characterized by a high percentage of costs that are fixed or difficult to reduce in the short term and product demand that is highly variable. Net Income in this industry may be affected by changes in revenue levels, capacity utilization, start-up costs, excess or obsolete inventory, product mix and pricing, variations in inventory valuation, including variations related to the timing of qualifying

products for sale. Other factors that may impact return on asset and stock returns are manufacturing yields, changes in unit costs, impairments of long-lived assets, including manufacturing, assembly/test and intangible assets; and the timing and execution of the manufacturing ramp and associated costs. According to Otellini (Intel's CEO), timing of new product introductions and the demand for and market acceptance of products; actions of other firms in the industry, including product offerings and introductions, marketing programs and pricing pressures and corresponding response such actions, a firms ability to respond quickly to technological developments and to incorporate new features into its products may also affect return on asset and stock return.

Finally, this study showed that corporations can get greater return by investing in effective advertisements. Trends from 2000-2007 showed that PC firms that spend lot of money in advertisement and possess high brand value may not necessary give good stock returns. People who invest in shares should not consider advertisement and brand value together and/or individually as a factor in predicting future returns.

Limitations

The data were analyzed in several different ways. However, 17 firms taken into account might not reflect the big picture, that is, a scenario of all the companies. There might be a bias associated with selecting the brand names. The mix of firms in this study may impact the overall result (Fehle et al., 2008; Swystun, 2007). High growth firm and low growth firm may have different outcome (Fama & French, 1993). Another limitation

was that the goods represented by various brands might affect company's policy towards its advertising. Therefore, brand factor considered here may not explain its relation to the return on asset or stock price. Also, the advertisement expenditure can not be an indicator of advertisement's popularity. Low budget advertisement can also make a brand popular and a huge expenditure on advertisement may not be able to attract customers.

Implication for Social Change

Efficient advertising drives brand awareness and loyalty. Brand influences choice, which means the brand influences earnings. And brands create competitive strength too, which means security of earnings into the future. (Interbrand, 2008). Effective investment in advertising drives financial performance that will create and maximize shareholders' wealth that may result in greater disposable income for donations to educational foundations, helping indigents' reach their educational goals and driving positive social change globally.

Furthermore, profitable firms make good corporate citizens; they helping people around the world reach their dreams.

> At Intel, our focus is not simply on what we make—it's on what we make possible for people everywhere. ... It's connecting the next billion people to uncompromised technology around the world. From South America to Africa to China - and everywhere in between (Intel Corporation, 2009)

Intel donates part of their profit every year through the Intel World Ahead program. The make PCs more accessible, provides resources that encourage learning. They help students around the world develop 21st century skills with Intel® technology,

connectivity, teacher development, new learning methods, and digital content. Helping indigents in the developing countries reach their educational goals drives positive social changes in these regions of the world.

Recommendation for Action

Association of national advertisers (ANA) showed that 93% of marketers surveyed said that if they have a quantifiable example of how, when, and where a brand increases value, that they would make more focused investments in branding and marketing. The result showed that 82% responded that it would help them remove underperforming initiatives, 79% also said it would the information would give them the influence to convince the rest of the organization to do the right thing and build a consistent branded experience for customers, and 69% said it would give them the leverage they need with their board to encourage investments (Frampton, 2008).

This and other studies by Eng & Keh (2007), Yeung & Ramasamy, (2007) and Herremans, et al., (2000) have shown the relationship between advertising expense, brand value, and financial performance. Marketers should, therefore, make brand the top of the corporate agenda, make more focused investment in branding, remove underperforming initiatives, and drive the right investment in branding across their organization.

Recommendation for Further Study

The range of brand value was large, suggesting that big brands were compared with small brands. Further quantitative studies are required considering larger number of brands that can be compared with this study. Additionally, other factors such as locations,

methods for advertising, consumer's accessibility to the products and advertisement should also be taken into account. Also, if the markets are efficient, investors may buy the shares and consumers may want to try new products and the abnormal returns can be eliminated (Fehle et al., 2008). Therefore, market trend should be considered in future studies.

Conclusion

Branding as a concept has been around for many years now. Brand influences choice, which means the brand influences earnings. It also creates competitive strength too, which means security of earnings into the future. Brands aid in the identification and segregating of products and services of one company from those of another. Advertisement plays a very important role in branding. It can increase a brand value by attracting people's attention. Advertising and brand value may positively affect the sales of a product. This study included an analysis using various statistical methods to determine any correlation between brand value/advertisement expenditure on return on assets/ stock return. According to the study presented in chapter 4, brand value and advertising expenditure, both have a significant correlation in case of both return on assets and stock return model. The study also showed significant correlation between brand value and return on assets; that was not the case for stock returns. The conclusion of this study is that the benefit of ascertaining these correlations will ensure that resources are appropriately channeled to where they will deliver the greatest value to the firm. This study has provided a baseline for future research on market trends on the variables described.

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APPENDIX A:

RETURN ON ASSETS (ROA) PANEL MODEL

ROA Fixed-effects (within) regression

Number of obs = 136
Number of groups = 17
R-sq: within = 0.0221
between = 0.0035
overall = 0.0064

roa	Coef.	Std. Err.	t	P>|t|
bv	-0.00019	0.000209	-0.93	0.353
aer	-0.00422	0.005906	-0.71	0.476
bvxaer	2.38E-07	1.69E-07	1.41	0.16
_cons	10.75729	4.166526	2.58	0.011

ROA Random-effects GLS regression

Number of obs = 136
Number of groups =17
R-sq: within = 0.0135
between = 0.1327
overall = 0.0836

roa	Coef.	Std. Err.	z	P>|z|
bv	-8.00E-06	0.00014	-0.06	0.955
aer	-0.00406	0.002652	-1.53	0.126
bvxaer	1.53E-07	1.19E-07	1.28	0.201
_cons	8.868273	2.518097	3.52	0

Lagrangian multiplier test (LM)

chi2(1) = 95.94
Prob > chi2 = 0.0000

Hausman test

chi2(2) = 2.84
Prob>chi2 = 0.2418

Model selection:

LM test were significant at 1 percent level, suggesting that panel data estimations are preferable over OLS.

Hausman test is not significant, which implies that Random-effects model is preferred over Fixed-effects model.

APPENDIX B:

STOCK RETURN PANEL MODEL

SR Fixed-effects (within) regression

Number of obs = 119
Number of groups = 17
R-sq: within = 0.0240
between = 0.0161
overall = 0.0046

Dependent variable = Stock Return

	Coef.	Std. Err.	t	P>|t|
bv	-1.47E-06	2.21E-05	-0.07	0.947
aer	-0.00026	0.000535	-0.49	0.626
bvxaer	1.95E-08	1.65E-08	1.18	0.239
_cons	-0.04588	0.416792	-0.11	0.913

SR Random-effects GLS regression

Number of obs = 119
Number of groups =17
R-sq: within = 0.0189
between = 0.0191
overall = 0.0085

Dependent variable = Stock Return

	Coef.	Std. Err.	z	P>|z|
bv	-4.23E-06	6.66E-06	-0.63	0.526
aer	-8E-05	0.000095	-0.84	0.401
bvxaer	5.16E-09	5.81E-09	0.89	0.374
_cons	0.13508	0.086709	1.56	0.119

Lagrangian multiplier test (LM)

chi2(1) = 0.64

Prob > chi2 = 0.4223

Hausman test

chi2(2) = 0.15

Prob>chi2 = 0.9279

Model selection:

LM test were not significant at all,
suggesting that pooled OLS analysis is adequate.

APPENDIX C:

STOCK POOLED OLS REGRESSION

SR pooled OLS regression

Dependent variable = Stock Return

	Coef.	Std. Err.	t	P>|t|
bv	-4.23E-06	6.66E-06	-0.63	0.527
aer	-8E-05	0.000095	-0.84	0.403
bvxaer	5.16E-09	5.81E-09	0.89	0.376

Interaction is not significant

Coefficient of rand Value is negative which is not consistant with theoretical findings

Number of obs=119

F(3, 115)=0.33

Prob > F=0.8044
R-squared=0.0085

SR pooled OLS regression with out interaction term

Dependent variable = Stock Return

	Coef.	Std. Err.	t	P>|t|
bv	1.19E-06	2.68E-06	0.44	0.657
aer	-7.44E-06	4.88E-05	-0.15	0.879
_cons	0.081768	0.062532	1.31	0.194

Coefficient of rand Value is positive but still not significant

APPENDIX D:

ROA ORDINARY LEAST SQUARE WITH NO LAG TERM

Ordinary Least Square with no lag terms
Lag=0

Variable	Coefficient	S.D	t-statistic	p-value
Dependent variable = ROA_00				
bv_00	-0.0000262	0.0004468	-0.06	0.954
aer_00	-0.0067038	0.0084546	-0.79	0.442
bvxaer_00	1.92E-07	3.84E-07	0.5	0.626
_cons	13.41685	6.639671	2.02	0.064
Dependent variable = ROA_01				
bv_01	0.0003959	0.000305	1.3	0.217
aer_01	0.0013825	0.0047298	0.29	0.775
bvxaer_01	-1.81E-07	2.47E-07	-0.73	0.478
_cons	0.3421197	4.056172	0.08	0.934
Dependent variable = ROA_02				
bv_02	0.0005965	0.0002162	2.76	0.016

Ordinary Least Square with lag terms
Lag=1

Variable	Coefficient	S.D	t-statistic	p-value
Dependent variable = ROA_01				
bv_00	0.0000793	0.0002447	0.32	0.751
aer_00	-0.0020662	0.0046309	-0.45	0.663
bvxaer_00	4.83E-08	0.00000021	0.23	0.822
_cons	3.893833	3.63675	1.07	0.304
Dependent variable = ROA_02				
bv_01	0.0005827	0.0002167	2.69	0.019
aer_01	0.0023445	0.0033604	0.7	0.498
bvxaer_01	-0.00000033	1.75E-07	-1.88	0.083
_cons	-0.638714	2.88176	-0.22	0.828
Dependent variable = ROA_03				
bv_02	0.0003735	0.0002367	1.58	0.139

aer_02	0.0043631	0.0035109	1.24	0.236
bvxaer_02	-4.52E-07	2.19E-07	-2.06	0.06
_cons	-0.5340267	2.786678	-0.19	0.851

aer_02	0.0004923	0.0038446	0.13	0.9
bvxaer_02	-2.27E-07	0.00000024	-0.95	0.362
_cons	4.87403	3.051565	1.6	0.134

Dependent variable = ROA_03

bv_03	0.0005887	0.0002996	1.97	0.071
aer_03	0.0027414	0.0039372	0.7	0.499
bvxaer_03	-4.11E-07	2.76E-07	-1.49	0.159
_cons	3.170918	3.366582	0.94	0.363

Dependent variable = ROA_04

bv_03	0.000362	0.0003243	1.12	0.285
aer_03	0.0003373	0.0042628	0.08	0.938
bvxaer_03	-2.53E-07	2.98E-07	-0.85	0.412
_cons	6.888166	3.644911	1.89	0.081

Dependent variable = ROA_04

bv_04	0.0003006	0.0003318	0.91	0.381
aer_04	-0.001197	0.004286	-0.28	0.784
bvxaer_04	-1.66E-07	2.91E-07	-0.57	0.578
_cons	7.605738	3.728216	2.04	0.062

Dependent variable = ROA_05

bv_04	0.0004054	0.0003993	1.02	0.329
aer_04	-0.0001394	0.0051579	-0.03	0.979
bvxaer_04	-2.04E-07	0.00000035	-0.58	0.57
_cons	7.021359	4.48665	1.56	0.142

Dependent variable = ROA_05

bv_05	0.0001359	0.0002778	0.49	0.633
aer_05	-0.0025653	0.0040803	-0.63	0.54
bvxaer_05	3.87E-08	2.32E-07	0.17	0.87
_cons	8.937179	3.975064	2.25	0.043

Dependent variable = ROA_06

bv_05	0.0004096	0.0002155	1.9	0.08
aer_05	0.0000212	0.0031656	0.01	0.995
bvxaer_05	-1.84E-07	0.00000018	-1.02	0.326
_cons	5.973761	3.083929	1.94	0.075

Dependent variable = ROA_06

bv_06	0.0004873	0.0002463	1.98	0.069
aer_06	0.0009532	0.0034486	0.28	0.787
bvxaer_06	-2.51E-07	0.00000021	-1.2	0.253
_cons	4.88303	3.345807	1.46	0.168

Dependent variable = ROA_07

bv_06	0.0005643	0.000242	2.33	0.036
aer_06	0.0009362	0.0033886	0.28	0.787
bvxaer_06	-2.58E-07	2.06E-07	-1.25	0.233
_cons	4.002266	3.287598	1.22	0.245

Dependent variable = ROA_07

bv_07	0.0007108	0.000238	2.99	0.011
aer_07	0.002311	0.0032587	0.71	0.491
bvxaer_07	-3.85E-07	2.05E-07	-1.88	0.083
_cons	2.322787	3.170344	0.73	0.477

Some interpretation for OLS model with no lag term:
The Brand Value variable is significant in year 2002 and year 2007.
All the interaction terms are not significant.

Ordinary Least Square with lag terms
Lag=2

Variable	Coefficient	S.D	t-statistic	p-value
Dependent variable = ROA_02				
bv_00	0.0002054	0.0001962	1.05	0.314
aer_00	-0.0010608	0.0037136	-0.29	0.78
bvxaer_00	-5.82E-08	0.000000169	-0.35	0.735
_cons	3.353422	2.916374	1.15	0.271
Dependent variable = ROA_03				
bv_01	0.0003627	0.0002376	1.53	0.151
aer_01	-0.0009696	0.0036848	-0.26	0.797
bvxaer_01	-1.51E-07	0.000000192	-0.78	0.447
_cons	4.833253	3.160005	1.53	0.15
Dependent variable = ROA_04				
bv_02	0.0001835	0.0002529	0.73	0.481
aer_02	-0.0017812	0.004108	-0.43	0.672
bvxaer_02	-8.69E-08	0.000000256	-0.34	0.74
_cons	8.267752	3.260589	2.54	0.025
Dependent variable = ROA_05				
bv_03	0.0003154	0.0004003	0.79	0.445
aer_03	-0.0004908	0.005261	-0.09	0.927
bvxaer_03	-1.56E-07	0.000000368	-0.42	0.678
_cons	7.851208	4.498458	1.75	0.105
Dependent variable = ROA_06				
bv_04	0.0006911	0.0003045	2.27	0.041
aer_04	0.0031554	0.0039334	0.8	0.437
bvxaer_04	-4.42E-07	0.000000267	-1.66	0.121
_cons	3.800203	3.421502	1.11	0.287
Dependent variable = ROA_07				
bv_05	0.0004561	0.0002138	2.13	0.053
aer_05	-0.0004921	0.0031402	-0.16	0.878
bvxaer_05	-1.63E-07	0.000000178	-0.91	0.377
_cons	5.526382	3.059224	1.81	0.094

Ordinary Least Square with lag terms
Lag=3

Variable	Coefficient	S.D	t-statistic	p-value
Dependent variable = ROA_03				
bv_00	0.0000608	0.0001937	0.31	0.759
aer_00	-0.0037595	0.0036663	-1.03	0.324
bvxaer_00	0.000000069	0.000000167	0.41	0.685
_cons	7.901618	2.879218	2.74	0.017
Dependent variable = ROA_04				
bv_01	0.000231	0.0002515	0.92	0.375
aer_01	-0.0022962	0.0039011	-0.59	0.566
bvxaer_01	-8.47E-08	0.000000204	-0.42	0.684
_cons	7.740616	3.345467	2.31	0.038
Dependent variable = ROA_05				
bv_02	0.000204	0.0003049	0.67	0.515
aer_02	-0.0018643	0.0049528	-0.38	0.713
bvxaer_02	-5.58E-08	0.000000309	-0.18	0.859
_cons	8.761245	3.931125	2.23	0.044
Dependent variable = ROA_06				
bv_03	0.0006052	0.0003124	1.94	0.075
aer_03	0.0029402	0.0041056	0.72	0.487
bvxaer_03	-4.02E-07	0.000000287	-1.4	0.185
_cons	4.494169	3.510553	1.28	0.223
Dependent variable = ROA_07				
bv_04	0.0007941	0.0002978	2.67	0.019
aer_04	0.0035695	0.0038469	0.93	0.37
bvxaer_04	-4.78E-07	0.000000261	-1.83	0.09
_cons	2.76465	3.346252	0.83	0.424

Ordinary Least Square with lag terms

Lag=4

Variable	Coefficient	S.D	t-statistic	p-value
Dependent variable = ROA_04				
bv_00	-5.3E-05	0.000196	-0.27	0.79
aer_00	-0.00493	0.003715	-1.33	0.207
bvxaer_00	1.29E-07	1.69E-07	0.76	0.458
_cons	10.47204	2.917181	3.59	0.003
Dependent variable = ROA_04=5				
bv_01	0.000231	0.000303	0.76	0.46
aer_01	-0.00258	0.0047	-0.55	0.592
bvxaer_01	-4.41E-08	2.45E-07	-0.18	0.86
_cons	8.462025	4.030433	2.1	0.056
Dependent variable = ROA_06				
bv_02	0.000465	0.000237	1.96	0.071
aer_02	0.001647	0.003848	0.43	0.676
bvxaer_02	-3.02E-07	2.40E-07	-1.26	0.23
_cons	5.689405	3.053864	1.86	0.085
Dependent variable = ROA_07				
bv_03	0.000884	0.000276	3.21	0.007
aer_03	0.005523	0.003625	1.52	0.151
bvxaer_03	-6.01E-07	2.54E-07	-2.37	0.034
_cons	1.78965	3.099298	0.58	0.574

APPENDIX D:

STOCK RETURN ORDINARY LEAST SQUARE WITH NO LAG TERMS

Ordinary Least Square with no lag terms
Lag=0

Variable	Coefficient	S.D	t-statistic	p-value
Dependent variable = SR_01				
bv_01	-0.0000126	0.000022	-0.57	0.578
aer_01	-0.0005918	0.0003416	-1.73	0.107
bvxaer_01	3.16E-08	1.78E-08	1.77	0.1
_cons	-0.0030862	0.2929367	-0.01	0.992
Dependent variable = SR_02				
bv_02	-9.39E-07	0.0000129	-0.07	0.943
aer_02	0.0001267	0.0002095	0.6	0.556
bvxaer_02	-6.95E-09	1.31E-08	-0.53	0.604
_cons	-0.0181698	0.16629	-0.11	0.915
Dependent variable = SR_03				
bv_03	-0.000037	0.0000331	-1.12	0.284
aer_03	-0.0005039	0.0004355	-1.16	0.268
bvxaer_03	3.2E-08	3.05E-08	1.05	0.312
_cons	0.8012305	0.3723621	2.15	0.051
Dependent variable = SR_04				
bv_04	-0.0000144	0.0000149	-0.97	0.35
aer_04	-0.0001109	0.0001925	-0.58	0.574
bvxaer_04	6.64E-09	1.3E-08	0.51	0.619
_cons	0.352127	0.167416	2.1	0.055
Dependent variable = SR_05				
bv_05	-6.67E-07	0.00000905	-0.07	0.942
aer_05	0.0001072	0.0001329	0.81	0.434

Ordinary Least Square with lag terms
Lag=1

Variable	Coefficient	S.D	t-statistic	p-value
Dependent variable = SR_01				
bv_00	0.00000692	0.0000173	0.4	0.697
aer_00	-0.000412	0.0003283	-1.25	0.232
bvxaer_00	1.54E-08	1.49E-08	1.04	0.319
_cons	-0.1937457	0.2578113	-0.75	0.466
Dependent variable = SR_02				
bv_01	-0.00000727	0.0000128	-0.57	0.581
aer_01	0.0000414	0.000199	0.21	0.838
bvxaer_01	-5.51E-10	1.04E-08	-0.05	0.958
_cons	0.0501425	0.1706284	0.29	0.773
Dependent variable = SR_03				
bv_02	-0.0000257	0.0000253	-1.01	0.329
aer_02	-0.0004193	0.0004109	-1.02	0.326
bvxaer_02	2.36E-08	2.56E-08	0.92	0.374
_cons	0.7057629	0.3261558	2.16	0.05
Dependent variable = SR_04				
bv_03	-0.000019	0.0000144	-1.32	0.21
aer_03	-0.0001765	0.0001898	-0.93	0.369
bvxaer_03	1.16E-08	1.33E-08	0.87	0.398
_cons	0.3913699	0.1622934	2.41	0.031
Dependent variable = SR_05				
bv_04	-0.00000441	0.0000133	-0.33	0.746
aer_04	0.0000755	0.0001719	0.44	0.668

bvxaer_05	-2.7E-09	7.54E-09	-0.36	0.726	bvxaer_04	5.76E-10	1.17E-08	0.05	0.961
_cons	0.0171166	0.1294322	0.13	0.897	_cons	0.0451776	0.149546	0.3	0.767
Dependent variable = SR_06					**Dependent variable = SR_06**				
bv_06	0.0000179	0.0000119	1.5	0.157	bv_05	0.0000137	0.0000104	1.31	0.212
aer_06	0.0001609	0.0001663	0.97	0.351	aer_05	0.0001193	0.0001531	0.78	0.45
bvxaer_06	-1.51E-08	1.01E-08	-1.5	0.159	bvxaer_05	-1.18E-08	8.69E-09	-1.36	0.196
_cons	-0.0399785	0.1613219	-0.25	0.808	_cons	0.0119026	0.1491798	0.08	0.938
Dependent variable = SR_07					**Dependent variable = SR_07**				
bv_07	0.0000315	0.00000815	3.87	0.002	bv_06	0.0000237	0.0000089	2.66	0.02
aer_07	0.000376	0.0001116	3.37	0.005	aer_06	0.0002955	0.0001246	2.37	0.034
bvxaer_07	-2.4E-08	7E-09	-3.42	0.005	bvxaer_06	-1.73E-08	7.58E-09	-2.28	0.04
_cons	-0.3266921	0.1085296	-3.01	0.01	_cons	-0.237639	0.1209038	-1.97	0.071

Some interpretation for OLS model with no lag term:
The Brand Value variable is significant only in year 2007.

Ordinary Least Square with lag terms
Lag=2

Variable	Coefficient	S.D	t-statistic	p-value
Dependent variable = SR_02				
bv_00	-0.00000237	0.00000968	-0.25	0.81
aer_00	0.0000852	0.0001833	0.46	0.65
bvxaer_00	-4.17E-09	8.32E-09	-0.5	0.625
_cons	0.0094514	0.143923	0.07	0.949
Dependent variable = SR_03				
bv_01	-0.0000192	0.0000257	-0.75	0.469
aer_01	-0.0003146	0.0003992	-0.79	0.445
bvxaer_01	1.44E-08	2.08E-08	0.69	0.503
_cons	0.6547124	0.3423598	1.91	0.078

Ordinary Least Square with lag terms
Lag=3

Variable	Coefficient	S.D	t-statistic	p-value
Dependent variable = SR_03				
bv_00	-0.0000106	0.0000198	-0.53	0.603
aer_00	-0.0002297	0.0003751	-0.61	0.551
bvxaer_00	8.89E-09	1.7E-08	0.52	0.61
_cons	0.5399709	0.2945594	1.83	0.09
Dependent variable = SR_04				
bv_01	-0.0000195	0.0000104	-1.88	0.083
aer_01	-0.0001807	0.000161	-1.12	0.282
bvxaer_01	1.06E-08	8.41E-09	1.26	0.229
_cons	0.4130512	0.1380883	2.99	0.01

Dependent variable = SR_04

bv_02	-0.0000149	0.0000109	-1.37	0.194
aer_02	-0.0001444	0.0001771	-0.82	0.43
bvxaer_02	8.37E-09	0.000000011	0.76	0.462
_cons	0.3584403	0.1405856	2.55	0.024

Dependent variable = SR_05

bv_02	-0.00000256	0.00001	-0.26	0.802
aer_02	0.0000761	0.0001631	0.47	0.649
bvxaer_02	-1.22E-09	1.02E-08	-0.12	0.906
_cons	0.0485468	0.1294618	0.37	0.714

Dependent variable = SR_05

bv_03	-0.00000698	0.0000132	-0.53	0.606
aer_03	0.0000175	0.0001737	0.1	0.921
bvxaer_03	3.35E-09	1.22E-08	0.28	0.787
_cons	0.0822214	0.1484851	0.55	0.589

Dependent variable = SR_06

bv_03	0.0000183	0.0000156	1.17	0.261
aer_03	0.0002117	0.000205	1.03	0.321
bvxaer_03	-1.73E-08	1.43E-08	-1.21	0.249
_cons	-0.034148	0.1752486	-0.19	0.849

Dependent variable = SR_06

bv_04	0.0000215	0.0000155	1.39	0.188
aer_04	0.0002365	0.0002004	1.18	0.259
bvxaer_04	-1.94E-08	1.36E-08	-1.43	0.177
_cons	-0.0614414	0.174293	-0.35	0.73

Dependent variable = SR_07

bv_04	0.0000318	0.0000112	2.84	0.014
aer_04	0.0003903	0.0001445	2.7	0.018
bvxaer_04	-2.56E-08	9.8E-09	-2.61	0.022
_cons	-0.2733505	0.1256936	-2.17	0.049

Dependent variable = SR_07

bv_05	0.0000143	0.0000087	1.64	0.125
aer_05	0.0001915	0.0001278	1.5	0.158
bvxaer_05	-9.22E-09	7.25E-09	-1.27	0.226
_cons	-0.1359342	0.1244758	-1.09	0.295

Ordinary Least Square with lag terms
Lag=4

Variable	Coefficient	S.D	t-statistic	p-value
Dependent variable = SR_04				
bv_00	-0.00000813	0.00000843	-0.96	0.353
aer_00	-0.0000584	0.0001596	-0.37	0.72
bvxaer_00	1.86E-09	7.25E-09	0.26	0.802
_cons	0.2955184	0.1253435	2.36	0.035

Dependent variable = SR_04=5

bv_01	-0.00000349	0.0000101	-0.35	0.735
aer_01	0.0000691	0.0001566	0.44	0.666
bvxaer_01	-3.93E-10	8.18E-09	-0.05	0.962
_cons	0.0600512	0.1342619	0.45	0.662

Dependent variable = SR_06

bv_02	1.15E-05	1.19E-05	0.97	0.352
aer_02	1.59E-04	1.94E-04	0.82	0.428
bvxaer_02	-1.26E-08	1.21E-08	-1.04	0.316
_cons	0.027393	0.153931	0.18	0.862

Dependent variable = SR_07

bv_03	3.59E-05	0.00001	3.58	0.003
aer_03	4.49E-04	1.32E-04	3.4	0.005
bvxaer_03	-3.07E-08	9.23E-09	-3.33	0.005
_cons	-0.30385	0.11274	-2.7	0.018

APPENDIX E:

RAW DATA BY COMPANY

Raw Data:

Dell:

Year	BV	AER	AER*BV	ROA	SR
2000	9,480	325	3,081,000	15	0.00
2001	8,270.00	431.00	3,564,370	16.40	0.36
2002	9,240.00	426.00	3,936,240	9.20	-0.02
2003	10,370.0	473.00	4,905,010	13.70	0.21
2004	11,500.00	576.00	6,624,000	13.70	0.19
2005	13,230.00	604.19	7,993,411	13.00	-0.47
2006	12,260.00	686.19	8,412,719	15.50	-0.27
2007	11,550.00	706.27	8,157,372	10.10	-0.07

HPQ:

Year	BV	AER	AER*BV	ROA	SR
2000	20,570.00	1,100.00	22,627,000	10.5	0.0
2001	17,980.00	1,100.00	19,778,000	2.1	-0.3
2002	16,780.00	1,400.00	23,492,000	-1.3	0.4
2003	19,860.00	1,800.00	35,748,000	3.4	0.3
2004	20,980.00	1,800.00	37,764,000	4.6	-0.1
2005	18,870.00	1,100.00	20,757,000	3.1	0.3
2006	20,560.00	1,100.00	22,616,000	7.6	0.4
2007	22,200.00	1,100.00	24,420,000	8.2	0.2

ORCL

Year	BV	AER	AER*BV	ROA	SR
2000	-	9.13	-	48.20	0.00
2001	12,220.00	13.75	168,078.60	23.20	-0.52
2002	11,510.00	9.94	114,389.33	20.60	-0.25
2003	11,263.00	10.88	122,594.91	21.00	0.18
2004	10,935.00	12.11	132,441.95	21.00	0.04
2005	10,887.00	14.21	154,748.02	14.00	-0.12
2006	11,459.00	12.85	147,224.78	11.60	0.43
2007	12,448.00	8.33	103,688.28	12.40	0.29

SAP:

Year	BV	AER	AER*BV	ROA	SR
2000	6,140.00	14.28	87,675.28	12.5	0.00
2001	6,310.00	30.21	190,639.45	11	-0.42
2002	6,780.00	11.69	79,256.22	9.4	0.44
2003	7,714.00	26.14	201,623.84	9	-1.12
2004	8,323.00	21.19	176,356.27	17	-0.09
2005	9,006.00	20.36	183,332.96	17.3	-0.01
2006	10,007.00	13.78	137,873.21	16.6	-0.15
2007	10,850.00	23.10	250,583.55	19.8	0.07

SNE:

Year	BV	AER	AER*BV	ROA	SR
2000	16,410.00	3,454.00	56,680,140.00	1.80	0.00
2001	15,010.00	3,132.00	47,011,320.00	1.50	-0.34
2002	13,900.00	3,657.00	50,832,300.00	0.10	-0.08
2003	13,150.00	3,922.00	51,574,300.00	1.40	-0.16
2004	12,760.00	3,444.00	43,945,440.00	1.01	0.13
2005	10,750.00	3,500.00	37,625,000.00	1.80	0.13
2006	11,700.00	3,500.00	40,950,000.00	1.20	0.05
2007	12,910.00	3,500.00	45,185,000.00	1.10	0.27

INTC:

Year	BV	AER	AER*BV	ROA	SR
2000	39,050.00	2,000.00	78,100,000.00	16.70	0.00
2001	34,670.00	1,560.00	54,085,200.00	22.00	0.03
2002	30,860.00	1,510.00	46,598,600.00	2.90	-0.51
2003	31,110.00	1,510.00	46,976,100.00	7.00	1.02
2004	33,500.00	1,800.00	60,300,000.00	12.00	-0.28
2005	35,590.00	2,470.00	87,907,300.00	15.60	0.03
2006	32,320.00	2,240.00	72,396,800.00	17.90	-0.21
2007	30,950.00	1,770.00	54,781,500.00	10.40	0.33

MSFT:

Year	BV	AER	AER*BV	ROA	SR
2000	70,200.00	1,230.00	86,346,000.00	18.10	0.00
2001	65,070.00	1,360.00	88,495,200.00	13.10	1.96
2002	64,090.00	904.00	57,937,360.00	7.90	-0.21
2003	65,170.00	1,060.00	69,080,200.00	9.20	0.05
2004	61,370.00	1,130.00	69,348,100.00	8.70	-0.01
2005	59,840.00	995.00	59,540,800.00	17.30	-0.02
2006	56,930.00	1,230.00	70,023,900.00	18.10	0.09
2007	58,710.00	1,330.00	78,084,300.00	22.30	0.12

NOK:

Year	BV	AER	AER*BV	ROA	SR
2000	38,530.00	121.89	4,696,360.73	17.80	0.00
2001	35,040.00	150.53	5,274,577.34	19.30	-0.43
2002	29,970.00	134.79	4,039,737.72	8.50	-0.34
2003	24,440.00	177.84	4,346,486.69	15.40	0.09
2004	24,041.00	252.68	6,074,788.60	17.10	-0.07
2005	26,452.00	313.04	8,280,599.29	14.70	0.08
2006	30,131.00	236.93	7,139,086.95	16.10	0.08
2007	33,696.00	319.01	10,749,405.71	19.00	0.92

CSCO:

Year	BV	AER	AER*BV	ROA	SR
2000	20,070.00	37.35	749,558.68	8.10	0.00
2001	17,210.00	27.38	471,284.81	-2.90	-0.51
2002	16,220.00	3.54	57,414.29	5.00	-0.28
2003	15,789.00	16.93	267,240.72	9.60	0.77
2004	15,948.00	16.05	255,963.71	14.00	-0.24
2005	16,592.00	26.11	433,241.02	16.90	-0.17
2006	17,532.00	15.53	272,189.07	12.90	0.55
2007	19,099.00	12.71	242,832.31	13.70	-0.01

SSNLF:

Year	BV	AER	AER*BV	ROA	SR
2000	5,220.00	416.21	2,172,638.51	2.23	0.00
2001	6,370.00	448.33	2,855,848.55	0.99	-0.63
2002	8,310.00	558.71	4,642,913.07	2.05	0.76
2003	10,846.00	615.76	6,678,545.08	1.32	0.58
2004	12,553.00	837.04	10,507,301.41	1.52	0.74
2005	14,956.00	811.26	12,133,255.91	1.03	0.46
2006	16,169.00	801.05	12,952,255.21	1.01	0.73
2007	16,853.00	796.11	13,416,773.85	0.85	0.09

CAJ:

Year	BV	AER	AER*BV	ROA	SR
2000	-	61.51	-	2.70	0.00
2001	6,580.00	57.23	376,594.29	4.70	0.05
2002	6,720.00	51.34	345,006.69	5.80	0.06
2003	7,192.00	62.42	448,908.63	6.50	0.30
2004	8,055.00	86.46	696,429.41	8.70	0.15
2005	9,044.00	98.21	888,168.93	9.60	0.10
2006	9,968.00	103.02	1,026,938.05	9.50	0.46
2007	10,581.00	119.00	1,259,102.26	10.10	-0.17

YHOO:

Year	BV	AER	AER*BV	ROA	SR
2000	6,300.00	84.30	531,094.98	3.10	0.00
2001	4,380.00	46.80	204,965.45	3.10	-0.36
2002	3,860.00	12.84	49,565.52	-3.90	-0.08
2003	3,895.00	26.22	102,111.37	3.80	1.98
2004	4,545.00	38.75	176,139.13	4.00	0.80
2005	5,256.00	31.73	166,795.87	9.10	0.04
2006	6,056.00	28.47	172,430.22	17.50	-0.35
2007	6,067.00	10.88	65,994.55	6.50	-0.15

XRX:

Year	BV	AER	AER*BV	ROA	SR
2000	9,700.00	32.39	314,217.93	1.30	0.00
2001	6,020.00	10.00	60,184.15	-1.00	1.43
2002	5,310.00	12.41	65,901.84	-0.30	-0.21
2003	5,578.00	26.14	145,785.70	0.60	0.84
2004	5,696.00	15.86	90,315.91	1.50	0.49
2005	5,705.00	14.24	81,235.90	3.10	-0.16
2006	5,918.00	20.75	122,812.05	4.20	0.18
2007	6,050.00	25.05	151,561.60	5.60	-0.07

MOT:

Year	BV	AER	AER*BV	ROA	SR
2000	4,450.00	106.23	472,717.49	2.20	0.00
2001	3,760.00	74.77	281,134.31	2.90	-0.22
2002	3,420.00	72.53	248,038.39	-9.00	-0.44
2003	3,103.00	110.89	344,106.74	-4.30	0.72
2004	3,483.00	227.04	790,789.93	2.90	0.32
2005	3,877.00	435.28	1,687,565.67	6.80	0.51
2006	4,569.00	208.05	950,577.66	12.60	-0.12
2007	4,149.00	270.27	1,121,341.02	8.40	-0.24

EK:

Year	BV	AER	AER*BV	ROA	SR
2000	11,820.00	171.39	2,025,779.32	9.70	0.00
2001	10,800.00	161.79	1,747,285.20	9.90	-0.20
2002	9,670.00	132.74	1,283,586.00	0.60	0.23
2003	7,825.00	157.91	1,235,681.74	5.60	-0.23
2004	3,362.00	92.95	312,507.81	1.30	0.28
2005	3,679.00	37.55	138,136.12	0.50	-0.26
2006	4,406.00	15.60	68,724.12	-10.90	0.12
2007	3,874.00	21.37	82,798.33	-5.60	-0.13

PC:

Year	BV	AER	AER*BV	ROA	SR
2000	3,730.00	150.99	563,203.61	1.30	0.00
2001	3,490.00	205.94	718,736.63	0.50	-0.46
2002	3,140.00	163.22	512,526.39	-5.50	-0.19
2003	3,257.00	173.06	563,670.42	-0.20	0.67
2004	3,480.00	248.72	865,554.33	0.60	0.11
2005	3,714.00	282.95	1,050,892.01	0.70	0.22
2006	3,978.00	242.35	964,067.06	1.90	0.00
2007	4,135.00	208.40	861,728.39	2.80	-0.02

IBM:

Year	BV	AER	AER*BV	ROA	SR
2000	53,180.00	1,742.00	92,639,560.00	8.80	0.00
2001	52,750.00	1,615.00	85,191,250.00	8.90	0.35
2002	51,190.00	1,427.00	73,048,130.00	9.00	-0.35
2003	51,770.00	1,406.00	72,788,620.00	5.50	0.20
2004	53,790.00	1,335.00	71,809,650.00	6.30	0.01
2005	53,380.00	1,284.00	68,539,920.00	6.80	-0.16
2006	56,200.00	1,195.00	67,159,000.00	7.90	0.12
2007	57,090.00	1,242.00	70,905,780.00	9.10	0.05

CURRICULUM VITAE

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Summary

Designed and taught college level courses in graduate and undergraduate levels - Research Methods, Statistics, Finance for Decision Making and Strategies in e-Business. Strong analytical and critical thinking skills, Business process improvement, Research and ad-hoc analysis. Excellent problem resolution, communication and managerial skills, proficiency in various financial systems software programs. Experienced in Investment, Risk, Compliance and Controls, budgeting, Forecasting, Cost, Pricing, Reporting, and Strategic Planning.

Education

Ph. D in Applied Management & Decision Sciences (AMDS) with Specialization in Finance. Walden University, Minneapolis Minnesota. Expected Jul 2009

Dissertation Title: "The Joint Impact of Brand Value and Advertising on Corporate Financial Performance and on Stock Return: A Case study of the Computer Industry"

Dissertation Chair: Professor M. Sharifzadeh

Dissertation Members: Professor Reza Hamzaee

Professor Robert Aubey

M.B.A., Finance/Accounting, *Regis University, Denver, Colorado. Feb 2005*

Licenses/Certification

- Green Belt Six Sigma Certification. Feb 2008
- Securities License. NASD. 2004. Series 6 and 63. Sep 2005

Teaching and Research Experience

Adjunct Professor of Finance & Applied Decision Sciences

George Fox University, Portland OR. June 2008 - Present

- Taught Financial Decision Making
- Taught Statistics and Research Methods
- Designed instructional materials
- Responsible for all teaching and evaluations

Professional Experience

Senior Controls/Finance Manager,

Intel Corporation. Portland OR. Jun 2007 - Present

- Lead world wide (Asia, Europe, America and Africa) revenue recognition and compliance team
- Was responsible for Controls, risk assessment and mitigation in a $1.5B JMP program
- Responsible for program development and strategic planning

- Interpreted and provided guidance on GAAP and FASB pronouncements
- Influenced critical business decisions and managed change.
- Championed operational efficiencies, effectiveness and cost save initiatives.
- Served as a financial consultant to senior management
- Project management, valuation and implementation

Senior Financial Analyst

SunTrust Bank – Trusco Capital Management. Atlanta GA. 2004 to 2007

- Conducted extremely complex financial analysis for upper management
- Assisted business partners with development of business cases, special projects, and ad-hoc requests. Modeled and performed statistical analysis
- Managed budgeting, forecasting, strategic planning and variance analysis for Trusco Capital Management
- Managed monthly and quarterly financial reporting.
- Handled Fund Transfer pricing (FTP).

Fin. Operations Analyst,

Bank of America, College Park, GA. 1997 to 2003

- Managed a team of 12 associates and handled customers account in a timely manner.
- Research and Adjustment, Account Reconciliation and Return Item process

- Assisted in budgeting and forecasting, inventory control, purchasing, fund reconciliation, Handled accounts reconciliation and adjustments.

Honors

- Gold Medallion. Bank of America. 2002. Customer Experience Leadership Award (CELA)

- Divisional Recognition Award (DRA) Intel corporation, 2Qtr and 3Qtr 2008

Publications and Presentations

Ukiwe, A. (2008). Principles of Corporate Finance. Capital Budgeting in Theory and Practice. Paper submitted to Walden University

Ukiwe, A. (2008) Principles of Investment and International Finance. Increasing Shareholders value through Merger and Acquisition. Paper submitted to Walden University

Affiliations

- National Black MBA Association, 2003.
- Association for Financial Professionals. 2004
- IMA, Institute of management Accountants, 2003.
- American Finance Association, 2008

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