

**THREE ESSAYS ON ADVERTISING, CUSTOMER SATISFACTION,
AND CUSTOMER LOYALTY**

Carolyn Samuel Taylor

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Approved by:

Katrijn Gielens

Jan-Benedict E.M. Steenkamp

Tarun Kushwaha

Christine Moorman

Valarie Zeithaml

ABSTRACT

CAROLYN SAMUEL TAYLOR: Three Essays on Advertising, Customer Satisfaction, and
Customer Loyalty
(Under the direction of Katrijn Gielens and Jan Benedict E.M. Steenkamp)

This dissertation focuses on the attitudinal metric of customer satisfaction and its consequence of customer loyalty. While the merits of customer satisfaction and customer loyalty are widely studied and recognized, less is known about how the firm should go about using its resources to optimize these constructs, and how the optimization of these constructs may affect firm value.

The first essay examines the effect of advertising effort on customer satisfaction and its implications for firm value. The second essay delves into analyzing the conceptual components of customer loyalty by exploring the effect of a firm's resource allocation choices on its loyalty capability, which is defined in this dissertation as a firm's ability to convert its resources into customer loyalty. In these first two essays collectively, I argue that the efficient optimization of both customer satisfaction and customer loyalty will positively impact a firm's performance in the market. The final essay examines customer satisfaction within a global context, and explores the extent to which market familiarity and experience contributes to a multinational corporation's (MNC's) ability to provide valuable offerings with which consumers in the host country express satisfaction.

The results of Essay I suggest that firms can over- or underadvertise with respect to optimizing customer satisfaction. This advertising ineffectiveness, particularly overadvertising, is detrimental to firm value. Moreover, this study shows that analyzing the impact of advertising on market value without accounting for effectiveness may lead to biased results. The findings from Essay II demonstrate that loyalty capabilities may vary across firms and over time due in part to the firms' advertising allocations, level of innovation, category characteristics, and portfolio strategy. The findings also suggest that loyalty capability contributes to firm performance. Finally, the results of Essay III indicate that a firm's experience in the market has a positive effect on its ability to provide value to the customer. However, the results are mixed as to whether experience helps a MNC overcome differences between the country of origin and the host country, and cope with the volatility of those differences.

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CHAPTER I -- INTRODUCTION

1.1 Overview

This dissertation focuses on the attitudinal metric of customer satisfaction and its consequence of customer loyalty. While the merits of customer satisfaction and customer loyalty are widely studied and recognized, less is known about how the firm should go about using its resources to optimize these constructs, and how the optimization of these constructs may affect firm value. This dissertation explores multiple aspects of customer satisfaction through two distinct research initiatives.

The first research stream examines how and to what extent the efficient optimization of both customer satisfaction and customer loyalty will positively impact a firm's performance in the market. The first essay examines the effect of advertising effort on customer satisfaction and its implications for firm value. The second essay delves into analyzing the conceptual components of customer loyalty, by exploring the effect of a firm's resource allocation and diversification choices on loyalty capability, which is defined in this dissertation as a firm's ability to convert its resources into customer loyalty.

In the second research initiative, customer satisfaction is examined in a global context in order to evaluate the extent to which multinational corporations (MNCs) are able to provide valuable offerings with which consumers in the host country express satisfaction. Essay III explores how this ability may vary across markets based on the psychic distance

between the home and host markets, which refers to the sum of such factors that may hinder the flow of market information (Johanson and Vahlne 1977).

To provide a brief outline of what has already been done, I first present a review of the literature that addresses the antecedents and consequences of customer satisfaction, including customer loyalty. Next, a framework of customer satisfaction is developed based on existing research. Finally, the objectives of each of the three dissertation essays are outlined, and I describe how each essay contributes to the existing literature on customer satisfaction.

1.2 Literature Overview of Customer Satisfaction

Oliver (1999, p. 34) defines customer satisfaction as fulfillment in that, "...consumption fulfills some need, desire, goal, or so forth and that this fulfillment is pleasurable." Satisfaction is the result of a postconsumption evaluation which contains both cognitive and affective elements (Oliver 1997). The cognitive state reflects the buyer's perception of whether the outcome was an adequate or inadequate reward for the customer's sacrifice. This evaluation is a response to the perceived discrepancy between prior expectations and the performance of the product as perceived after consumption (Tse and Wilton 1988). The affective element refers to the consumer's subjective positive or negative feelings surrounding the consumption experience (Westbrook 1987). According to Parasuraman et al. (1988), incidents of satisfaction combine to result in perceptions of quality. Over time, "satisfaction soon decays into (but nevertheless greatly affects) one's overall attitude toward purchasing products" (Oliver 1981, p. 27). These attitudes anticipate

future behavior in that each evaluation of a consumption experience updates the continuous construct of attitudes (Day 1984), and may thus alter future behavior accordingly.

The fact that there are many variations of the definition of customer satisfaction already suggests that customer satisfaction is a complex construct composed of multiple elements. To further complicate matters, customer satisfaction can be evaluated at various levels including satisfaction with a product, a consumption experience, an attribute, a store, a brand, or a company (Yi 1991).

Next, a framework of customer satisfaction is developed that is grounded in the existing literature, and the antecedents and consequences of customer satisfaction are explored. The framework is largely based on Syzmanski and Henard's model of the antecedents of customer satisfaction (2001), which was created to accompany their meta-analysis. However, a number of modifications were made, such as omitting a measure of actual performance, in order to allow perceptions of performance as compared to customer expectations to affect customer satisfaction. In addition, the positive and negative counterparts of the constructs of affect and word of mouth are represented in the following framework, and the construct of customer loyalty is included as a consequence of customer satisfaction. Table 1.1 includes a brief summary of the research highlights related to the antecedents and consequences of customer satisfaction. This table informs the present research by summarizing the empirical support for the antecedents and consequences of customer satisfaction that compose this study's framework, subsequently described. A model of the framework is presented in Figure 1.1.

Table 1.1
Literature Review of the Antecedents and Consequences of Customer Satisfaction

<i>Authors</i>	<i>Title</i>	<i>Antecedents of Customer Satisfaction</i>	<i>Consequences of Customer Satisfaction</i>
Bolton and Lemon <i>JMR 1999</i>	A Dynamic Model of Customers' Usage of Services: Usage as an Antecedent and Consequence of Customer Satisfaction (CS)	<ul style="list-style-type: none"> • Payment equity has a strong effect on CS. • Customers' comparison of current payments with normative expectations has a direct effect on CS. • Service usage increases as price increases to maintain payment equity. 	<ul style="list-style-type: none"> • High CS leads to high usage levels in future periods. • Higher price is associated with lower future usage.
Chandrashekar, Rotte, Tax, and Grewal <i>JMR 2007</i>	Satisfaction Strength and Customer Loyalty		<ul style="list-style-type: none"> • Satisfaction strength has a great influence on the translation of stated satisfaction into customer loyalty. When satisfaction is strong (uncertainty is low), CS translates to loyalty. The translation is greatly lowered when satisfaction is weakly held.
Churchill and Surprenant <i>JMR 1982</i>	An Investigation Into the Determinants of Customer Satisfaction	<ul style="list-style-type: none"> • For nondurable goods, expectations, disconfirmation, and performance are determinants of customer satisfaction. • For durable goods, performance is the sole determinant of satisfaction. 	
Day <i>Advances in Consumer Research 1984</i>	Modeling Choices Among Alternative Responses to Dissatisfaction		<ul style="list-style-type: none"> • Dissatisfaction <i>motivates</i> the consumer to complain but does not determine the outcome of the complaining. Then consumers determine their action by considering the complaining alternatives and the benefits of complaining.
Helgesen <i>Journal of Marketing Management 2006</i>	Are Loyal Customers Profitable? Customer Satisfaction, Customer (Action) Loyalty and Customer Profitability at the Individual Level		<ul style="list-style-type: none"> • Found a positive and significant relationship between customer satisfaction and customer loyalty. But the relationship only holds beyond a certain threshold of customer satisfaction, and variations in customer satisfaction only explain about 10% of variations in loyalty.

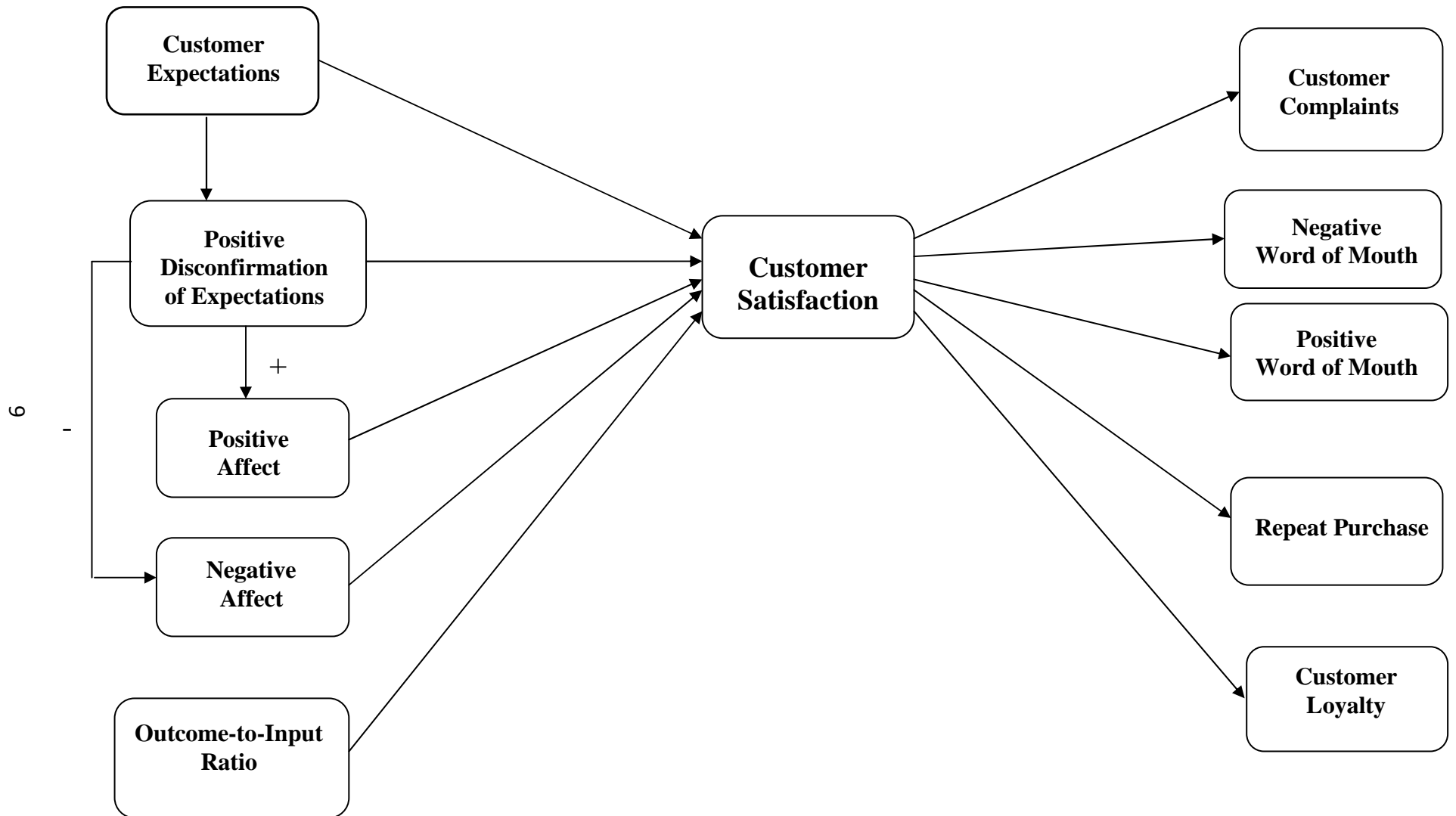
Homburg, Koschate, and Hoyer <i>JM 2005</i>	Do Satisfied Customers Really Pay More? A Study of the Relationship Between Customer Satisfaction and Willingness to Pay (WTP)	<ul style="list-style-type: none"> Based on equity theory: fairness of the exchange. Relationship between CS and WTP is inverse s-shaped, consistent with disconfirmation theory, since the strongest impact is at the extremes (delight or disappointment). WTP also grows stronger as CS evaluations becomes cumulative.
Homburg, Koschate, and Hoyer <i>JM 2006</i>	The Role of Cognition and Affect in the Formation of Customer Satisfaction: A Dynamic Perspective	<ul style="list-style-type: none"> Over time, the impact of cognition on satisfaction increases while the impact of affect decreases. Thus, advertisers should try to have an early influence on consumers
Johnson, Garbarino, and Sivadas <i>IJMR 2006</i>	Influences of Customer Differences of Loyalty, Perceived Risk and Category Experience on Customer Satisfaction Ratings	<ul style="list-style-type: none"> Antecedents: <ul style="list-style-type: none"> The customer's previous history of positive experiences (loyalty) Negative encounters with the organization that may lead to perceptions of risk A customer's experience with similar or competing organizations (category experience) Loyalty has a positive effect on CS; perceived risk has a negative effect; effect of category experience is not significant.
Luo and Bhattacharya <i>JM 2006</i>	Corporate Social Responsibility (CSR), Customer Satisfaction, and Market Value	<ul style="list-style-type: none"> CS partially mediates the relationship between CSR and market value. In innovative companies, CSR has a positive and significant impact on CS, and a negative and significant impact on CS in firms with low innovativeness.
Luo and Homburg <i>JM 2007</i>	Neglected Outcomes of Customer Satisfaction	<ul style="list-style-type: none"> Free word-of-mouth (WOM) advertising is an antecedent of CS; it boosts the efficiency of future advertising. CS also has a positive influence on human capital

MacInnis and de Mello <i>JM 2005</i>	The Concept of Hope and its Relevance to Product Evaluation and Choice	<ul style="list-style-type: none"> • Hope is an antecedent of CS. It is an emotion, and therefore falls under the driver of affect. It also affects possible disconfirmation and perceived equity. But the expectations of the positive outcome may be weak. 	
de Matos and Rossi <i>JAMS 2008</i>	Word-of-Mouth Communications in Marketing: a Meta-Analytic Review of the Antecedents and Moderators		<ul style="list-style-type: none"> • Satisfaction has a stronger relationship with positive WOM than with loyalty. • Customer commitment has the strongest effect on WOM.
Mittal and Kamakura <i>JMR 2001</i>	Satisfaction, Repurchase Intent, and Repurchase Behavior: Investigating the Moderating Effect of Customer Characteristics		<ul style="list-style-type: none"> • Repurchase intent increases monotonically as CS increases. • Consumers have different thresholds and response bias exists, so there is variation among responders.
Olsen <i>JAMS 2002</i>	Comparative Evaluation and the Relationship Between Quality, Satisfaction, and Repurchase Loyalty	<ul style="list-style-type: none"> • Quality is an antecedent of CS. <ul style="list-style-type: none"> ◦ The relationship is stronger when relative attitudes are used rather than individual evaluations. 	<ul style="list-style-type: none"> • Customer loyalty is a consequence of CS. <ul style="list-style-type: none"> ◦ Again, the relationship is stronger when relative attitudes are used rather than individual evaluations.
Orsingher, Valentini, and Angelis <i>JAMS 2010</i>	A Meta-Analysis of Satisfaction with Complaint Handling in Services	<p>The antecedents of satisfaction with complaint handling are:</p> <ul style="list-style-type: none"> • Distributive justice: when an individual feels that their needs are met (strongest effect) • Interactional justice: the quality of the interpersonal treatment (second strongest effect) • Procedural justice: the perceived fairness of the policies (weakest) 	<ul style="list-style-type: none"> • WOM – strongest correlations with satisfaction with complaint handling; people will share their experiences whether positive or negative • Return intent – second highest correlation • Overall satisfaction – weakest correlation

Rijsdijk, Hultink and Diamantopoulos <i>JAMS 2007</i>	Product Intelligence: Its Conceptualization, Measurement and Impact on Customer Satisfaction	<ul style="list-style-type: none"> Product intelligence indirectly leads to CS through relative advantage, compatibility, and complexity. <ul style="list-style-type: none"> The relationship between complexity and CS is negative The relationship between compatibility and complexity and CS is positive.
Rust, Inman, Jia, and Zahorik <i>MS 1999</i>	What You Don't Know about Customer-Perceived Quality: The Role of Customer Expectation Distributions	<ul style="list-style-type: none"> Customer expectations are distributions, and not simple point expectations. Expectations are formed based on cumulative experiences. Customers consider risk in their decision-making and they are more sensitive to negative disconfirmation than to positive disconfirmation.
Rust and Oliver <i>JAMS 2000</i>	Should We Delight the Customer?	<ul style="list-style-type: none"> Outlines the conditions under which positive disconfirmation pays off. Though for repeat purchases, expectations will be raised, so it is harder to delight in the future.
Szymanski and Henard <i>JAMS 2001</i>	Customer Satisfaction: A Meta-Analysis of the Empirical Evidence	<ul style="list-style-type: none"> Tests the antecedents of Expectations, Disconfirmation, Performance, Affect, and Equity. Finds that all are significant except for Performance. Disconfirmation and equity are the most significant. Complaining, Negative WOM, and Repurchase Intentions
Westbrook and Oliver <i>JCR 1991</i>	The Dimensionality of Consumption Emotion Patterns and Customer Satisfaction	<ul style="list-style-type: none"> Finds 5 affective patterns that relate to CS, thus demonstrating that there are many facets of CS. Not all measures of satisfaction do a good job in capturing these dimensions.

Yi <i>Review of Marketing 1991</i>	A Critical Review of Customer Satisfaction	<ul style="list-style-type: none"> Literature overview that includes: disconfirmation, satisfaction and dissatisfaction as two separate constructs, equity, instrumental performance, expressive performance, demographic characteristics (found to be weak), expectations, equity, value-percept disparity (does the product provide the features and performance characteristics desired) Negative WOM has stronger effects than positive WOM. CS influences attitudes which affect purchase intention. Customer complaint – having an outlet for complaints may keep customers from switching. Dissatisfied customers who do not complain are more likely to switch.
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Figure 1.1
Model of the Antecedents and Consequences of Customer Satisfaction



Antecedents of Customer Satisfaction

The focal theoretical framework delineates customer satisfaction as composed of consumer expectations (Prakash and Lounsbury 1984), disconfirmation of expectations (Oliver 1993), the perceived outcome-to-input ratio (Yi 1991; Szymanski and Henard 2001), and positive and negative affect associated with the product experience (Oliver 1993). A meta-analysis conducted by Szymanski and Henard (2001) validates that these constructs are indeed significant antecedents of customer satisfaction.

Customer Expectations. Customer expectations serve as a baseline, or anchor, against which the actual experience is compared (Yi 1991). Expectations are formed based on numerous factors in a consumer's environment, including advertising, word of mouth, brand reputation, and even past product experience. The three major types of expectations that have been studied in the satisfaction literature include predictive expectations, normative expectations, and comparative expectations (Prakash and Lounsbury 1984). Each type of expectation uses a different point of reference, as predictive expectations refer to anticipated product performance, or how a product is likely to perform, normative expectations describe the standards that consumer's think *should* be met, and comparative expectations are based on experiences with other similar brands (Prakash and Lounsbury 1984). In this context, predictive expectations are used, as they serve as a benchmark against which actual performance is compared.

Disconfirmation of Expectations. Disconfirmation of expectations arises when actual outcomes as perceived by the consumer diverge from expectations. It results in a surprise effect which magnifies the consumer's perceived disparity between expectations and actual performance (Anderson 1973). Positive disconfirmation occurs when outcomes exceed

expectations and the customer experiences delight, resulting in high levels of customer satisfaction (Rust and Oliver 2000). In contrast, negative disconfirmation is a case of expectations exceeding outcomes (Szymanski and Henard 2001) and it leads to dissatisfaction (Yi 1991).

Outcome-to-Input Ratio. According to consumer behavior literature, consumers are satisfied when they perceive their outcome-to-input ratio to be fair (Yi 1991). Customers judge the fairness of the transaction by comparing their outcome-to-input ratio to that of a referent person or group (Szymanski and Henard 2001). If consumers perceive that others are experiencing greater outcomes relative to their inputs, then the situation is perceived as inequitable and it results in dissatisfaction (Yi 1991). However, previous research shows that buyers are more sensitive to their own inputs and outcomes (Oliver and Swan 1989b), and do not account for seller outcomes when evaluating the fairness of a transaction (Oliver and Swan 1989a). Thus, consumers tend to hold a self-centered, asymmetric view of fairness (Oliver and Swan 1989a).

Affect. Affect influences customer satisfaction when emotions, whether positive or negative, are elicited during consumption and leave traces in memory, which are then integrated into the customer satisfaction evaluation (Westbrook and Oliver 1991). As an illustration, a restaurant encounter is a complex experience that may trigger both positive and negative affect (Derbaix and Pham 1991). A consumer may be pleased with the food and the ambiance of the restaurant but become angered by the waiter, and thus experience both positive and negative affect. Since positive and negative affect can be elicited simultaneously (Westbrook 1987), a single continuum for modeling affect is insufficient since it cannot represent a duality of emotions. Previous studies have introduced various

taxonomies which present as many as ten different categories of affect (Westbrook 1987), but these categories can be broadly classified as forms of either positive or negative affect.

Nomological Network of the Antecedents of Customer Satisfaction

Expectations can affect customer satisfaction in two ways. First, raising expectations has been found to boost a consumer's evaluation of product performance (Anderson 1973; Olshavsky and Miller 1972). Based on assimilation theory, if actual performance turns out to be close to expectations, the consumer will assimilate their product evaluation toward their expectations (Yi 1991). Thus, if expectations are biased slightly upwards, then consumers will assimilate their product evaluations upwards. Consistent with this theory, Rust et al. (1999) find that people tend to seek evidence that confirms their expectations, which means that as long as expectations are fulfilled by actual performance in some capacity, then consumers will be satisfied. In addition, simply meeting expectations strengthens customer satisfaction by making the firm seem reliable and thereby reducing perceptions of future risk.

The second way that expectations can affect customer satisfaction is through the disconfirmation of expectations, or a contrast effect. Based on contrast theory, a large discrepancy between expectations and actual performance will result in the disconfirmation of expectations if a product's performance falls outside of a consumer's range of acceptance (Anderson 1973; Yi 1991). If expectations are substantially higher than actual performance, the consumer will experience negative disconfirmation of expectations, which will have a negative effect on customer satisfaction. Conversely, if expectations are low relative to actual performance, then the customer will experience positive disconfirmation of expectations, which will have a positive impact on customer satisfaction and will contribute to positive affect.

A consumer's outcome-to-input ratio also plays an integral role within the nomological net of the antecedents of customer satisfaction. Among the antecedents of customer satisfaction, the outcome-to-input ratio is the only construct which explicitly factors in the cost of the good. Thus, the outcome related to a costly luxury item will be evaluated at high relative standards, while the standards will be relaxed considerably for discount items.

Lastly, aside from the cognitive drivers of customer satisfaction, affect separately impacts customer satisfaction. The relationship between affect and customer satisfaction varies across product categories (Westbrook 1980) and over experience levels, as the role of affect is greatest when the consumer has little experience with the product (Homburg et al. 2006). Positive affect contributes to satisfaction while negative affect leads to dissatisfaction (Oliver 1993). If a consumer experiences both positive and negative affect concurrently, the overall influence on customer satisfaction will be the net difference, but it is still important that the firm understand the complexity of the consumer's evaluation.

According to a meta-analysis conducted by Szymanski and Henard (2001), the disconfirmation of expectations and the outcome-to-input ratio are the strongest relative drivers of customer satisfaction, having reliability-adjusted mean correlations with satisfaction of .46 and .50, respectively. Expectations and positive affect are also significant determinants of customer satisfaction with mean correlations of .27 for each. Based on a large volume of research relating perceived product performance to customer satisfaction, Szymanski and Henard explored its role as a possible antecedent of customer satisfaction and found that it has a mean correlation with satisfaction of .34. Perceived product performance is reflected in the framework of customer satisfaction as it indirectly influences customer

satisfaction through the disconfirmation of expectations driver as well as the outcome-to-input ratio.

Consequences of Customer Satisfaction

This framework centers on the consequences that have received the most attention to date, including customer complaints (Szymanski and Henard 2001), positive word of mouth (Luo and Homburg 2007), negative word of mouth (Szymanski and Henard 2001), repeat purchase (Mittal and Kamakura 2001), and customer loyalty (Chandrashekar et al. 2007). Customer satisfaction has a positive relationship with repeat purchase, positive word of mouth, and customer loyalty, and is inversely related to customer complaints and negative word of mouth.

Customer Complaints. Customer complaints are the result of consumers formally voicing their dissatisfaction (Hoyer and MacInnis 2004). However, according to Hoyer and MacInnis (2004), the majority of dissatisfied customers do not take the initiative to complain to the manufacturer or retailer. Dissatisfied customers consider a number of factors when deciding whether or not it is worth their effort to issue a complaint (Day 1984). Consumers consider the significance of the event, the costs of complaining, and the probability that complaining will lead to a favorable outcome.

Word of Mouth. Word of mouth is defined as information about products or services that is communicated verbally (Hoyer and MacInnis 2004). It can be positive or negative. According to Luo and Homburg (2007), customer satisfaction generates positive word of mouth which can greatly boost the efficiency of future advertising. However, the effects of negative word of mouth, generated by dissatisfaction, are even stronger than the effects of positive word of mouth (Yi 1991). This is not surprising, as more credence is paid to

negative customer reviews than to positive customer reviews (Chevalier and Mayzlin 2006). In addition, dissatisfied customers tell three times as many people about their negative experience than satisfied customers tell about their positive experience (Richins 1983).

Repeat Purchase. Dick and Basu (1994) and Mittal and Kamakura (2001) state that satisfaction with a product may lead to repeat purchase. Repeat purchase is a construct that measures observed purchasing behavior, but not the attitudes that prompt it. Thus, favorable customer satisfaction should have a positive effect on repeat purchase, though inferences of attitudes cannot be made based on the occurrence of repeat purchases, as they may be merely a result of situational constraints (Dick and Basu 1994).

Customer Loyalty. According to Dick and Basu (1994, p. 99), customer loyalty is “the strength of the relationship between an individual’s relative attitude and repeat patronage.” Thus, a loyal customer views the focal firm favorably in comparison to competitors, and their purchasing behavior is consistent with this position.

Nomological Network of the Consequences of Customer Satisfaction

Dissatisfied customers are predisposed to complain (Szymanski and Henard 2001), but the complaints themselves are not necessarily harmful to the firm if handled appropriately. Dissatisfaction motivates the consumer to complain (Day 1984), and thus, there would be no complaints if there was no dissatisfaction. Yet, given that all firms are confronted with varying degrees of customer dissatisfaction, a voiced complaint is valuable in that it alerts the firm to a problem. It presents an opportunity for the firm to rectify a suboptimal situation to prevent further damage and even salvage the relationship with the customer. The manner in which the complaints are handled shapes the consumer’s lasting attitude towards the company and thus influences future behavior. Of primary importance to

the customer is that their needs are met when the complaint is addressed (Orsingher et al. 2010). Secondary in importance is the interpersonal treatment with which the complaint is handled. By addressing complaints effectively, firms can reduce negative word of mouth (Hoyer and MacInnis 2004).

Like customer complaints, negative word of mouth serves to release tension, but it also affords consumers the opportunity to get revenge on the offending firm, to regain control of the situation, and to garner sympathy from others (Nyer 1999). Alternatively, positive word of mouth is highly correlated with a customer's fulfillment regarding how a firm handles their complaint (Orsingher et al. 2010). Customer satisfaction has a strong relationship with positive word of mouth (de Matos and Rossi 2008).

Repeat purchase is an observed behavior that is often indicative of customer loyalty, but more information is needed to determine if a customer is indeed loyal or if they are perhaps vulnerable to defection (Chandrashekar et al. 2007). Customer loyalty is of particular importance to marketers as it represents a sustainable competitive advantage (Dick and Basu 1994). According to Helgesen (2006), there is a positive and significant relationship between customer satisfaction and customer loyalty, but it is dependent on the strength of the customer's satisfaction (Chandrashekar et al. 2007). When the customer satisfaction judgment is strongly held, then satisfaction tends to translate to loyalty; yet the likelihood of satisfaction translating to loyalty decreases significantly when the satisfaction judgment is weakly held.

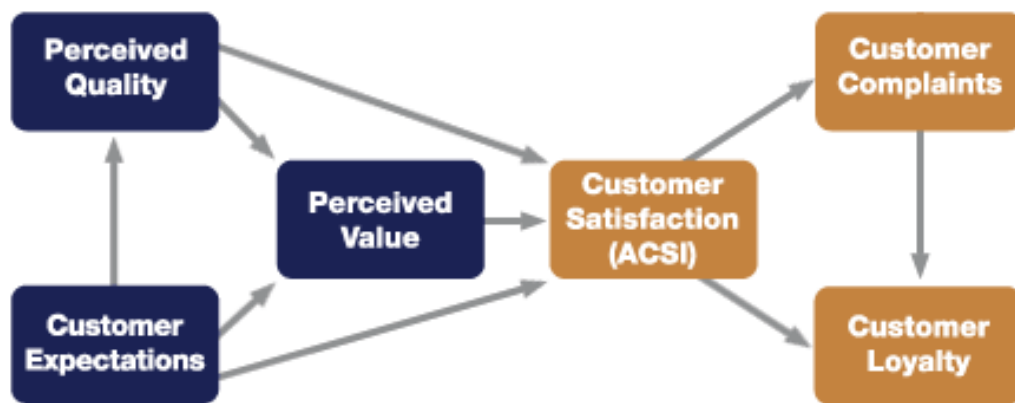
The meta-analysis by Szymanski and Henard (2001) indicates that the reliability-adjusted mean correlation between customer satisfaction and repeat purchase is .53. There was not enough archival data to adjust the mean correlation for differences in scale

reliabilities for customer complaints and negative WOM, however, their sample size-adjusted means are -.34 and -.57, respectively. The correlations of customer satisfaction with both positive WOM and customer loyalty were not reported.

The American Customer Satisfaction Index

In the following three essays, the American Customer Satisfaction Index (ACSI) is used as the metric for customer satisfaction and customer loyalty. The ACSI score is a composite score that takes into account the multiple dimensions of customer satisfaction. ACSI's operationalization of customer satisfaction weights the underlying drivers so as to maximize the explanation of customer satisfaction on the consequence of customer loyalty. The final ACSI score is then a weighted combination of consumers' perceived quality, perceived value, and expectations (Fornell et al. 1996). (See Figure 1.2) Additional information describing the ACSI model and methodology is included in Appendix A. Next, I examine how this conceptualization compares to the framework presented in Figure 1.1. Table 1.2 articulates the one-to-one correspondence of the focal framework presented in Figure 1.1 to the ACSI framework.

Figure 1.2
The ACSI Framework



www.theACSI.org

Table 1.2
Corresponding Constructs of the ACSI Framework and the Focal Framework

ACSI Framework	Focal Framework
Expectations: The customer's anticipation of the quality of a company's products or services.	Expectations: <i>The construct is the same as the ACSI's.</i>
Perceived Value: The level of product or service quality experienced relative to price paid.	Outcome-to-Input Ratio: <i>The construct is the same as the ACSI's Perceived Value construct.</i>
Perceived Quality: The customer's evaluation via recent consumption experience of the quality of a company's products or services. Quality is measured in terms of customization and reliability.	Disconfirmation of Expectations: When actual outcomes as perceived by the customer diverge from expectations. Disconfirmation of expectations will be positive (negative) if perceived quality is better (worse) than expected.
-	Affect: Subjective feelings or emotions (positive or negative) that are elicited during the consumption experience.
Customer Loyalty: A combination of the customer's professed likelihood of repurchasing from the same supplier and the likelihood to repurchase at various price points (indicating the degree of price tolerance).	Customer Loyalty: The relationship between an individual's attitude toward the product or service and their repeat patronage.
<i>Included in Customer Loyalty construct</i>	Repeat Purchase: A measure of observed purchase behavior.
Customer Complaints: Instances of consumers formally voicing their dissatisfaction.	Customer Complaints: <i>The construct is the same as the ACSI's.</i>
-	Word of Mouth: Information (positive or negative) about products or services that is communicated verbally.

Firstly, the construct of customer expectations in the focal framework is the same as that in the ACSI framework, as predictive expectations are used, versus normative or comparative, following the tradition of Szymanski and Henard (2001) and Fornell et al. (1996). Secondly, the ACSI defines perceived value as the consumer's perception of product or service quality relative to the price paid. This ACSI construct mirrors the construct of the outcome-to-input ratio. Perceived quality as operationalized by the ACSI is closely linked to the disconfirmation of expectations in the focal framework. In the ACSI framework, perceived quality is defined as the customer's evaluation of the degree to which their needs are met (performance), as measured against their expectations (<http://www.theacsi.org/>). Thus, there will be positive disconfirmation of expectations/high perceived quality if actual performance exceeds the consumer's expectations in meeting their needs, and negative disconfirmation of expectations/low perceived quality if performance fails to meet the consumer's needs, and thus falls short of expectations. The only antecedent from the focal framework that is not included in the ACSI framework is affect. Though I find this omission to be problematic, affect perhaps has the weakest influence on customer satisfaction among the antecedents, as the outcome-to-input ratio and the disconfirmation of expectations have the greatest impact (Szymanski and Henard 2001), and expectations explicitly factor into the disconfirmation of expectations.

With respect to the consequences of customer satisfaction, the construct of customer complaints is the same in the focal framework as in the ACSI framework. Both frameworks include constructs of customer loyalty, but define them differently. The ACSI defines customer loyalty as the likelihood of repurchase combined with the consumers' likelihood of repurchase at various price points, whereas the focal framework presents repeat purchase as a

separate construct since it is not always reflective of customer loyalty and may be influenced by external factors. Finally, the ACSI framework omits the consequence of word of mouth, which is included in the focal framework. Word of mouth perhaps has a greater role now more than ever, thanks in part to social networking and online platforms.

Despite these differences, the many strengths of the ACSI outweigh the minor shortfalls related to its alignment with the focal framework. With respect to the following essays, the major benefits of the ACSI are that it is composed of longitudinal data that are robust across time and industries, and it has a great deal of nomological validity, given that it has been widely studied in academic literature. Another benefit of using the ACSI within the following essays is that these essays may then contribute to and build upon the current wealth of customer satisfaction literature that uses the ACSI.

1.3 Dissertation Structure and Preview

This dissertation is divided into three essays. The first essay investigates the impact of advertising on customer satisfaction and the subsequent effect on firm value. In this essay, I hope to provide insight into the advertising—market value relationship by introducing customer satisfaction as an intervening perceptual measure. The second essay measures loyalty capability in a consumer packaged goods (CPG) setting and explores some of the reasons why a firm's ability to convert marketing resources into loyalty may differ across firms and over time. Additionally, this study examines the impact of loyalty capability on firm performance. Finally, the third essay examines customer satisfaction in an international setting to address the extent to which market familiarity and experience compensate for psychic distance between the firm's home country and its host countries.

1.3.1 Essay I

The objectives of Essay I include the following:

1. To introduce customer satisfaction as an intervening perceptual measure between advertising and market value.
2. To identify, describe, and explain the effects of advertising effort on customer satisfaction.
3. To identify, describe, and explain the impact on market value of over- and underadvertising (effectiveness) and advertising efficiency with respect to customer satisfaction.
 - a. To examine whether these relationships differ for products versus services.

Companies spend significant resources on advertising. Hence it is not surprising that effectiveness of advertising has been a frequently researched topic. Traditionally, marketers have relied on sales performance metrics, but this does not reflect the full story. Arguably the “ultimate” way to demonstrate the added value of advertising is to show that it has a positive effect on firm value. To better understand the advertising—market value relationship, customer satisfaction is introduced as an intervening perceptual measure. This study then examines the impact on market value of over- and underadvertising (effectiveness) and advertising efficiency with respect to customer satisfaction.

In a first step, a random parameters stochastic frontier estimation is used to estimate the curvilinear relationship between advertising and customer satisfaction for over 100 U.S. firms operating in different consumer goods, services, and retail markets from 1994 to 2008. In a second step, I explore how advertising effectiveness, advertising efficiency, and advertising effort impact firm value, measured by tobin’s q. This study also examines

whether the differences between products and services translate to more or less pronounced effects of advertising efficiency and over/underadvertising on firm value.

As a validation check, the results from the random parameters stochastic frontier model used in step 1 are then compared to a latent class stochastic frontier model as well as a homogeneous model. This is done to determine if it is necessary to make accommodations for heterogeneity, and if so, if there is a superior approach for modeling the data. Using the latent class stochastic frontier method, I determine the number of latent classes that provides the best model fit. Then, the fit of the three respective models is assessed to establish which one has the best fit.

Finally, this essay's contributions to the advertising—market value debate are presented, and the managerial implications of the findings are discussed.

1.3.2 Essay II

Essay II builds on the concepts established in Essay I that relate to the effect on firm value of enhancing consumer attitudes, and the importance of accounting for the efficiency with which consumer attitudes are enhanced. This essay explores loyalty capability in the context of the CPG industry.

The objectives of Essay II are:

1. To construct a measure of loyalty capability.
2. To identify, describe, and explain some of the reasons why capabilities differ across firms and over time. More specifically, I examine the effects on loyalty capability of advertising allocations, innovation type, category characteristics, and portfolio strategy.

3. To examine the impact of loyalty capability on firm performance.

This article begins by discussing the role of firm capabilities as a source of competitive advantage. Capabilities measure the firm's ability to efficiently combine and deploy its resources to attain a certain objective (Amit and Schoemaker 1993; Dutta et al. 1999). They are of great importance to the firm as they may explain significant variations in firms' performance (Dutta et al. 1999; Vorhies and Morgan 2005).

The construct of loyalty capability reflects a firm's use of its skills and tacit knowledge to competently deploy its marketing resources in order to generate and facilitate customer loyalty. Firms with superior loyalty capability enjoy competitive advantages associated with establishing strong customer relationships and strengthening a customer's attitude toward the brand. Using the resource-based-view, conclusions may be drawn regarding the resources and activities that contribute to a firm's capabilities. This article presents a number of hypotheses addressing the potential effects of a firm's strategic allocations and diversification of resources on loyalty capability. More specially, I examine the impact of innovations, advertising media allocations, category characteristics, and portfolio strategy on loyalty capability. I also analyze the extent to which firm scale moderates the relationship between loyalty capability and innovations, media allocations, and firm scope.

Essay II continues with an analysis of the impact of loyalty capability on firm performance. I then discuss the results of these analyses, the managerial implications for firms in the CPG industry, and the overall value and benefits of measuring loyalty capability.

1.3.3 Essay III

Essay III examines customer satisfaction within a global context and has the following primary objectives:

1. To explore the effects of psychic distance between the home and host countries on customer satisfaction.
2. To identify, describe, and explain the extent to which market familiarity and experience compensates for psychic distance between the firm's home country and the host country.
3. To examine the extent to which variation in cultural and economic distance between the firm's home and host countries may affect customer satisfaction, and subsequently, how the effect may be moderated by firm experience.

Using customer satisfaction scores across 22 countries representing 151 firms, this study analyzes the extent to which cultural and economic distances between the home and host countries negatively affect customer satisfaction, and whether those effects are moderated by a firm's experience in the market. Not only are the absolute distances between the home countries and host countries of interest, but I also hypothesize that unstable conditions, or volatility in the differences between the home and host countries, will result in further risk to the firm. However, this risk may also be moderated by a firm's experience in the market. Finally, this study accounts for a number of country-specific cultural and socioeconomic control variables that may systematically affect a firm's ability to provide value to consumers. Using multilevel modeling, the hypotheses are tested using customer satisfaction evaluations that come from business-to-consumer firms covering a wide range of industries. This analysis addresses a combination of time-varying effects, firm-level effects,

and country-level effects.

The essay concludes with a discussion of the results and the implications for managers that are responsible for expansion into international markets. Based on the findings, conclusions may be drawn with respect to which markets managers may be advised to enter, and how they may equip their firm for success. This essay then presents the limitations and opportunities for future research using international customer satisfaction evaluations.

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CHAPTER II -- ESSAY I: THE IMPACT OF ADVERTISING ON CUSTOMER SATISFACTION AND THE EFFECT ON FIRM VALUE

2.1 Introduction

Advertising is a key marketing instrument. In the U.S. alone, advertising expense exceeds \$150 billion annually (Sonne 2010). Despite the size of this investment, business decisions related to marketing and advertising are currently made with less information than decisions made with much lower financial consequence. As a Procter & Gamble CMO once said, “Marketing is a \$450 billion industry, and we are making decisions with less data and discipline than we apply to \$100,000 decisions in other aspects of our business” (Farris et al. 2006, p. XV). Traditionally, marketers have relied on consumer attitudes or sales performance metrics to measure advertising response (Joshi and Hanssens 2010), but this does not reflect the full story, nor does it satisfy top management’s growing need for accountability and justification of advertising expenses (Srinivasan et al. 2009). Arguably the “ultimate” way to demonstrate the added value of advertising is to show that it has a positive effect on firm value.

There is conflicting evidence on whether advertising has a positive impact on market value. Studying PC manufacturers and the sporting goods industry, Joshi and Hanssens (2010) find that advertising indeed has a positive effect on market value. In a broader study, however, Wang et al. (2009) find that in 10 out of 32 industries, advertising has a significant negative effect on market value. The firms for which these negative outcomes were found

tended to be service providers, including eating places and retail establishments. Still, if advertising increases sales and generates goodwill, then why doesn't advertising *always* translate to increases in firm value? Wang et al. (2009) speculate that one factor might be overadvertising, and research indicates that many firms indeed greatly overadvertise (Aaker and Carman 1982; Prasad and Sen 1999). This overadvertising thesis is compatible with behavioral research which suggests that if consumers view advertising as excessive, it will have a negative impact on their attitudes toward the brand (Kirmani and Wright 1989). Moreover, not only may firms be ineffective, they may also be inefficient. Luo and Donthu (2005) establish that even among top marketers, a great deal of advertising inefficiency exists. They found that about 20% of advertising spending among firms in their study was in vain due to inefficiency, resulting in missed opportunities as well as wasted resources. Ignoring this inefficiency may further bias the impact of advertising effort.

To gain a better understanding of the advertising—market value relationship, I introduce customer satisfaction as an intervening perceptual measure, study the role of advertising effectiveness (i.e. extent of over- and underadvertising with respect to customer satisfaction) and efficiency in this process, and contrast the relationship for product firms versus service firms. I elaborate on each of these contributions in detail.

First, to better understand the role that over-/underadvertising plays in the advertising—market value relationship, attitudinal measures must be considered. Buyer behavior is largely determined by how the customer processes information to form concepts and make judgments (Howard and Sheth 1969). Indeed, tracking how a firm's marketing expenditures influence customers' attitudes and subsequent behavior can help in evaluating marketing's contribution to shareholder value (Rust et al. 2004; Keller and Lehmann 2006).

As such, Gupta and Zeithaml (2006) and the Marketing Science Institute (2006) call for research that complements observed measures with attitudinal constructs.

Customer satisfaction is regarded as one of the ultimate attitudinal constructs (Morgan and Rego 2006; Gupta and Zeithaml 2006) whose antecedents are related to advertising (Boulding et al. 1993; Mehta et al. 2008) and whose consequences feed into market value (Fornell et al. 2006; Anderson et al. 2004). Still, no one has explored the extent of explanatory power and insight that incorporating customer satisfaction into the advertising—market value relationship can provide.

Second, in this paper, I evaluate the impact of advertising effort on firm value while controlling for the impact of advertising effectiveness and efficiency with respect to customer satisfaction. Within this study, effectiveness is defined as the ability of the advertising input to generate the maximum possible customer satisfaction (e.g., Naik and Raman 2003). Efficiency refers to maximizing output relative to inputs used (Luo and Donthu 2006). In this context, advertising efficiency measures a firm's conversion of advertising into customer satisfaction relative to the level of advertising inputs used.

Third, I explore whether the industry in which the firm operates plays a role. As observed in previous work, the relationship between advertising and market value tends to differ between industries (Wang et al. 2009) and across different types of purchase situations (Hoch and Deighton 1989; Mehta et al. 2008). There are fundamental differences between consumer product offerings and service offerings which define the manner in which consumers search for and evaluate their purchases, making some consumption experiences more impressionable than others. This study examines whether the differences between

products and services translate to more or less pronounced effects of over-/underadvertising and efficiency on firm value.

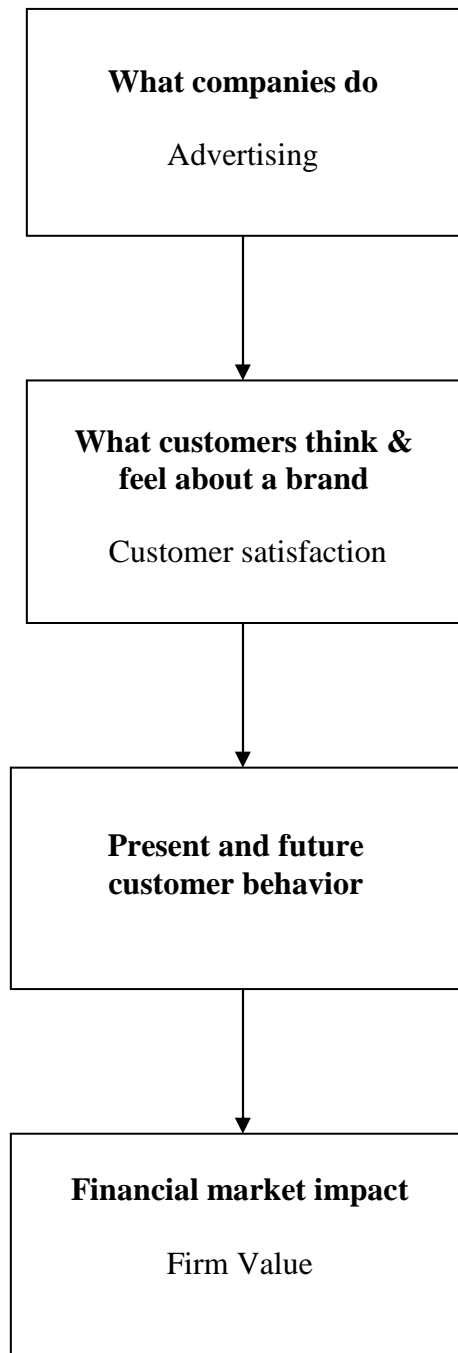
To explore the relationship between advertising and customer satisfaction and derive insights into advertising effectiveness and advertising efficiency with respect to optimizing customer satisfaction, I use data on 101 U.S. firms from 1994 until 2008. More specifically, the analysis first relates advertising to customer satisfaction in a curvilinear way using a random parameters stochastic frontier analysis. The curvilinear relationship makes it possible to capture the extent to which firms are over- or underadvertising. The stochastic frontier approach enables the measurement of efficiency for each individual firm. By using a random parameters approach, I allow for the inherent heterogeneity in the market among firms that span various industries. Subsequently, these results are used to obtain firm-specific measures of advertising effectiveness and efficiency. In a second step, I relate advertising effectiveness and advertising efficiency with respect to customer satisfaction to market value. For ease of exposition, in the remainder of this paper, any reference to over- or underadvertising will refer to over- or underadvertising with respect to optimizing customer satisfaction. Likewise, advertising effectiveness and advertising efficiency will also be with respect to customer satisfaction.

2.2 Conceptual Framework

Managers invest in both advertising and customer satisfaction with the goal of enhancing firm value, but these efforts are frequently independent of one another. This study takes a holistic approach, as it examines how advertising and customer satisfaction may be interrelated. To do so, this article addresses how advertising affects attitudes surrounding the

consumption experience and how firm value is ultimately affected. Figure 2.1 depicts the conceptual model for this study and traces the process by which advertising creates value for the firm that can be measured in financial terms. In the first stage, the firm engages in marketing activity, which is in the form of advertising. In the second stage, advertising affects what the consumer thinks and feels about the brand, which is measured using the ACSI. Customer satisfaction then influences present behavior and predicts future customer behavior. Finally, the reaction of financial markets is measured using tobin's q.

Figure 2.1
Advertising Value Chain



I first reflect on the benefits of including an attitudinal construct in the advertising—firm value relationship. Then, I discuss why satisfaction is a relevant and informative intervening construct. The ideal characteristics of a linking construct require that the antecedents are shaped by advertising and the consequences anticipate future financial performance. Next, this essay presents the theoretical and empirical support for how advertising affects customer satisfaction. Finally, this essay shows how the outcomes of customer satisfaction contribute to market value. A number of hypotheses are presented that address the relationship between advertising and customer satisfaction and the ultimate impact on firm value.

2.3 Customer Satisfaction

Keller and Lehmann (2003, p. 27) propose that “the value of a brand ultimately resides with customers.” Thus, it is essential to model customer attitudes when attempting to analyze, and more importantly, understand, the impact of a marketing action on firm value. Attitudes are “sticky” measures and are indicative of future firm performance. They become “more ‘top of mind’ or accessible, persistent, resistant to change, and likely to guide intentions and subsequent behavior,” as the consumer gains more and more experience with the brand (Johnson et al. 2006, p. 123).

Why is customer satisfaction, rather than other attitudinal measures, used to help explain the advertising—market value relationship? First, a definition of customer satisfaction is provided, and then I discuss its intermediate role in the advertising—market value relationship.

Customer satisfaction is “the consumer’s response to the evaluation of the perceived discrepancy between prior expectations (or some other norm of performance) and the actual

performance of the product as perceived after its consumption” (Tse and Wilton 1988, p. 204). The framework of customer satisfaction, as defined by the ACSI delineates the antecedents of customer satisfaction as composed of (1) consumer expectations (Prakash and Lounsbury 1984), (2) perceived quality (Oliver 1993), and (3) perceived value (Yi 1991; Szymanski and Henard 2001). The consequences include (1) customer complaints (Szymanski and Henard 2001) and (2) customer loyalty (Chandrashekar et al. 2007).

Customer expectations refer to anticipated product performance (Prakash and Lounsbury 1984) and serve as a benchmark, or anchor, against which actual performance is compared. Using customer expectations as a reference, *perceived quality* refers to the extent to which the consumer feels that the product meets their needs. *Perceived value* relates perceived quality to the price paid for the good (Anderson et al. 2004). *Customer complaints* are voiced dissatisfaction by the consumer (Hoyer and MacInnis 2004). Dissatisfied customers are predisposed to complain (Szymanski and Henard 2001), though only a portion of dissatisfied customers take the initiative to complain. *Customer loyalty* is defined as “the strength of the relationship between an individual’s relative attitude and repeat patronage” (Dick and Basu 1994, p. 99). The ACSI operationalizes customer loyalty as a combination of a customer’s likelihood of repeat purchase coupled with their price tolerance, or the maximum increase in price that they are willing to pay before switching (Anderson 1996). Repeat purchase refers to observed purchase behavior, but not the attitudes that prompt it, as repeat purchase can be merely a result of situational constraints. There is a significant relationship between customer satisfaction and loyalty (Helgesen 2006), and the translation of satisfaction into loyalty is dependent on the strength of the customer’s satisfaction

(Chandrashekar et al. 2007). Customer loyalty is of particular importance to marketers as it represents a sustainable competitive advantage (Dick and Basu 1994).

Relationship between Advertising and Customer Satisfaction

Using data from the airline industry accompanied by ACSI scores, Grewal et al. (2010) show that advertising has a positive effect on customer satisfaction. Still, it is not clear how this process comes about and whether it generalizes to other industries. To gain more insight in this matter, I look into the effects that advertising generates on the antecedents and consequences of satisfaction.

Advertising can affect customer satisfaction by framing the consumption experience and by sending the consumer credible signals of product quality and value. According to Mehta et al. (2008), the effects of advertising can be classified as informative, persuasive, or transformative. Informative advertising raises awareness of the product and its attributes, and can therefore increase knowledge of brand quality (Mehta et al. 2008). Persuasive advertising seeks to “change some pre-behavioral mental state” (Deighton 1984, p. 763), and in doing so can increase customer utility and expectations of the brand. The mere act of advertising may further enhance customer expectations by serving as a signal to the consumer of a firm’s investment and commitment to the product (Kirmani and Wright 1989). Consumers may also employ their impressions of advertising costs as cues of product quality (Kirmani 1990; Kirmani and Wright 1989), which will have a positive effect on customer satisfaction. Empirically, previous studies have found that advertising may decrease price elasticity by differentiating the product and thereby increasing perceived value (Mitra and Lynch 1995; Draganska and Klapper 2010). This has a positive effect on customer satisfaction.

Transformative advertising has a direct effect on customer expectations and subsequent evaluations of customer satisfaction in that it “influence(s) how consumers experience and evaluate the quality of the product from subsequent consumption” (Mehta et al. 2008, p. 334). Transformative advertising first presents the consumer with a proposition that induces the consumer to form a hypothesis about the product (Deighton 1984). The propositions made by transformative advertising tend to be abstract (Deighton 1988) and rarely contradict consumer beliefs directly (Deighton 1984). The advertising may present claims pertaining to the product experience and encourage the consumer to “see for yourself” (Deighton 1988). The consumer’s hypothesis then influences what they attend to and subsequently encode during consumption (Deighton 1988), which leads to a confirmatory bias (Hoch and Ha 1986; Mehta et al. 2008). If actual performance is close to expectations, the consumer will assimilate their evaluation toward their expectations (Yi 1991). Once the consumer has a personal experience with the product and the opportunity to learn for themselves, they then purge any residual doubt of source credibility. Further, the consumer grants special status to what they have learned from experience, regardless of the extent to which it was framed by advertising (Hoch and Deighton 1989).

In addition, advertising may increase post-purchase satisfaction by making consumers feel confident about their purchase decision, thereby decreasing perceptions of post-purchase risk and dissonance (Bauer 1960). Combined, all of these insights suggest a positive relationship between advertising and satisfaction.

Conversely, advertising may have a negative impact on customer satisfaction in some instances. Advertising may cause customer satisfaction to decline if advertising costs are perceived to be higher than the consumer thinks is appropriate. The results of Kirmani’s

study (1997, p. 170) suggest a consumer belief that “...there is a line between conveying information and being manipulative, and that the former is acceptable and the latter is not.”

The default attribution is that a marketer’s investment in a product serves as a signal of commitment to a product, which increases perceptions of product quality. However, this attribution can be threatened, as “the desperation undermine occurs when the amount of expenditure seems excessive or more than reasonably warranted to convey product benefits” (Kirmani and Wright 1989, p. 345). Further, consumers are found to associate extremely high levels of advertising expenditure with lower product quality, as perceptions that the firm is overcompensating for their products may imply that the product cannot stand on its own merits (Kirmani 1990). Thus, the consumer’s distrust of the firm may negatively affect perceptions of product quality, which will then negatively affect perceived value as well.

Furthermore, Rethans et al. (1986) show that with repeated exposures, consumers will tire of the ad, resulting in a decline in response as well as negative affect (Pechmann and Stewart 1989). Even if the firm varies the advertisements, there is often a recurring theme which may induce tedium. Moreover, the cognitive elaboration view suggests that additional exposures beyond the optimal level require greater allocation of an individual’s resources to process the message, which may result in negative affect and negative biases (Rethans et al. 1986; Petty and Cacioppo 1986). Thus, any persuasive or transformative effects that the advertising may have had will be diluted.

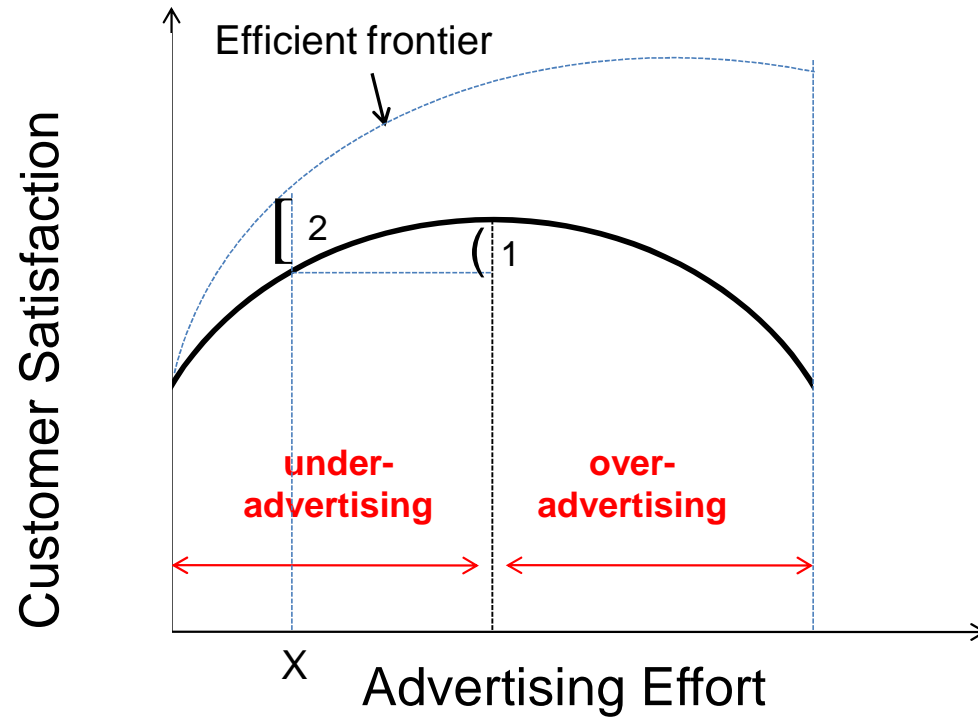
Combined, these insights imply that the relationship between advertising expenditure and customer satisfaction will take an inverted-U shape. Thus, the following hypothesis is proposed:

H1: Advertising has a curvilinear effect on customer satisfaction.

The Impact of Advertising Effort, Effectiveness, and Efficiency on Firm Value

The proposed relationship between advertising effort and customer satisfaction is presented in Figure 2.2. The dashed-line curve represents the efficient frontier in which customer satisfaction is maximized given the level of advertising effort. The level of advertising effort that maximizes actual customer satisfaction represents the point at which advertising will be most effective. For a given hypothetical level of advertising effort, X, the figure illustrates the corresponding advertising effectiveness deficit, labeled 1, and the advertising efficiency deficit, labeled 2.

Figure 2.2
Proposed Relationship between Advertising Effort and Customer Satisfaction:
Implications of Advertising Ineffectiveness and Advertising Inefficiency



If Advertising Effort = X , then:
1 is the effectiveness deficit, and
2 is the efficiency deficit

Advertising effectiveness declines as the absolute distance from the optimal level of advertising with respect to maximizing customer satisfaction increases. If a firm is not fully effective, then it is either in the regime of underadvertising or overadvertising. With respect to advertising efficiency, a firm cannot exceed the efficient frontier. Advertising efficiency declines as the distance from the efficient frontier grows.

Why is it relevant to firm value that a firm optimize customer satisfaction? Customer satisfaction serves as a feedback mechanism that influences future decision-making with respect to brand choice. More specifically, it influences the consumer's evoked set of brands as well as the ranking of brands within the evoked set (Howard and Sheth 1969). Therefore, customer satisfaction influences purchase behavior which directly affects the profitability of a firm. High levels of customer satisfaction positively affect a firm's customer retention rate, and thus, repeat purchases (Fornell 1992), which reduces the volatility and vulnerability of cash flows (Srivastava et al. 1998). Customer satisfaction also generates positive word of mouth which can greatly boost the efficiency of future advertising (Luo and Homburg 2007) and accelerate new customer acquisition (Trusov et al. 2008). Moreover, word of mouth contributes to shareholder value by increasing market share and accelerating cash flows (Anderson et al. 2004). Lastly, increases in customer satisfaction are shown to increase consumer price tolerance (Anderson 1996). This helps to insulate the firm from competition and may allow the firm to extract a premium. Thus, increasing consumer price tolerance reduces a firm's risk while also enhancing cash flows (Srivastava et al. 1998).

The impact of advertising effort on firm value

In addition to sending a positive signal to consumers, advertising may enhance firm value through the spillover of equity from advertising to investors (Srinivasan and Hanssens

2009). Joshi and Hanssens (2010) find that advertising indeed has a positive effect on market value through an investor response effect, even beyond the expected effects through revenue. Thus, I propose that the following main effect exists after controlling for excess advertising expenditures associated with potential overadvertising and advertising inefficiency:

H2: Advertising effort has a positive and significant effect on firm value.

The impact of advertising effectiveness on firm value

If advertising is not fully effective and customer satisfaction is not optimized as a result, the firm misses out on some of the positive consequences of customer satisfaction including repeat purchases, positive word of mouth, and customer loyalty, all of which contribute to firm value. Thus, advertising ineffectiveness, whether in the form of under- or overadvertising, has a negative impact on firm value.

To evaluate the overall effect on market value, I also consider how the stock market rewards advertising effectiveness against the marginal costs of advertising. For advertising effectiveness to contribute to firm value, the returns to the marginal increase in satisfaction must be greater than the marginal advertising costs associated with the advertising effort. Based on the results of an empirical study by Fornell et al. (2006), investments in customer satisfaction are found to lead to excess returns. Thus, the following hypothesis is proposed:

H3: Both under- and overadvertising have a negative effect on firm value.

I next discuss whether a possible asymmetric relationship between under- and overadvertising and market value exists. Would firm value decline more if a firm is under- or overadvertising by the same absolute amount? From a purely economic perspective, if a firm is overadvertising, then it is not experiencing returns of customer satisfaction from the excess advertising. The basic economic implications are that overadvertising is a drain on

financial resources, with the additional damaging outcome of negative returns of customer satisfaction and potential negative effects on firm value as well.

Based on prospect theory, the value function is convex for losses and steeper for losses than gains (Kahneman and Tversky 1979). In this study's context, prospect theory would propose that customers view a decline in customer satisfaction as worse than missing out on potential gains in satisfaction. Overadvertising is likely to prompt customer complaints and even negative word of mouth. These responses indicate an increase in defections and volatility of cash flows, and are thus detrimental to firm value. Overadvertising also has a direct negative impact on cash flows since an excess amount of resources are spent on advertising. These points suggest that overadvertising has a uniquely strong negative effect on firm value.

On the other hand, underadvertising inhibits a firm's ability to set expectations, send strong positive signals of product quality and value, and shape the product experience. Thus, customer satisfaction will fail to reach its potential which will negatively affect firm value.

While negative effects of both underadvertising and overadvertising are expected, the relative harmful effects of overadvertising are posited to be greater than the harmful effects of underadvertising, a priori. Therefore, I propose the following asymmetric effect:

H4: The negative effect on firm value of overadvertising will be greater in magnitude than the negative effect of underadvertising.

The impact of advertising efficiency on firm value

It is critical to complement the goal of enhancing customer satisfaction with an emphasis on efficiency. In essence, it may not be in a firm's best interest financially to satisfy every customer at any cost. By using advertising dollars wisely and trimming

wasteful spending, firms can accelerate and enhance cash flows. In fact, Mittal et al. (2005) find that the positive relationship between customer satisfaction and market value is stronger among firms that maintain a dual emphasis on both efficiency and customer satisfaction.

To illustrate the value of efficiency, consider two firms that have an identical customer satisfaction score: one that advertised efficiently and one that advertised inefficiently. Based on the shared customer satisfaction score, both firms are likely to experience the same customer response in the form of sales, loyalty, etc. But the efficient firm will have used fewer resources and thus will possess greater excess capital for use in the future (cf. Mittal et al. 2005). This contributes to superior market value. Therefore, the following effect is proposed:

H5: Advertising efficiency has a positive effect on firm value.

The moderating effect of products/services on the advertising effectiveness/efficiency—firm value relationship

The fundamental differences between consumer product offerings and service offerings alter the manner in which consumers search for and evaluate their purchases. This study explores whether the differences translate to more or less pronounced effects of over-/underadvertising and efficiency on firm value.

Services are characterized by higher intangibility, inseparability, and heterogeneity than products (Parasuraman et al. 1985), which makes service quality more difficult to evaluate than product quality. The tangibility of products enables consumers to engage in a broad search in which they can examine and compare product features (Zeithaml 1981). This search process helps consumers to develop realistic expectations prior to purchase. Service offerings, on the other hand, are characterized by production and consumption that is

inseparable, which makes it difficult for consumers to evaluate the offering prior to purchase and it diminishes the firm's control in standardizing the product. The large labor component of service offerings also makes standardization difficult. These characteristics contribute to the heterogeneous nature of services.

While consumer products rank highest in search qualities, service offerings are high in experience and credence qualities (Zeithaml 1981). Experience qualities refer to attributes that can only be evaluated after purchase or during consumption. Credence qualities are the most difficult to evaluate since they may require evaluating a highly skilled service, of which the consumer may not be able to knowledgeably evaluate. Examples of services high in credence qualities include services rendered by a doctor or a mechanic.

To aid in evaluation of services, consumers must look to alternative cues (Zeithaml 1981). These cues may include personal sources such as word of mouth or signals such as advertising and price (Steenkamp and Hoffman 1994). Services are generally characterized by fewer objective physical attributes than products, which makes the assessment of evidence during consumption more ambiguous for services than for products. The transformative effect of advertising is strongest in a setting of ambiguous evidence (Hoch and Ha 1986; Mehta et al. 2008), and should therefore be stronger for services than products.

When a firm is underadvertising, the signals of product quality and firm commitment are not reaching their full potential. When a firm is overadvertising, the positive signals associated with optimal advertising effort grow weaker, or even worse, become negative. Given that consumers have a greater reliance on alternative cues in the evaluation of services (Parasuraman et al. 1985), these negative effects may be greater among services than among products. Therefore, service firms may face greater decreases in repeat purchases, positive

word of mouth, customer loyalty, and ultimately market value than product firms when dealing with a similar degree of advertising ineffectiveness. Thus, the following hypothesis is proposed:

H6: The negative effects of over-/underadvertising on firm value are more pronounced for service firms than product firms.

2.4 Data

The hypotheses are tested using data on U.S.-based firms operating in different consumer goods, services, and retail markets from 1994-2008. For each of these firms, I collect annual U.S. advertising spending (TNS Media), customer satisfaction scores (the ACSI), and market value (COMPUSTAT) data.

A sample of over 100 firms was generated by starting with all 200 firms tracked by the ACSI. The companies tracked by the ACSI are selected on the basis of total sales in the U.S. Thus, the ACSI companies reflect a large portion of the U.S. market share of each industry (<http://www.theacsi.org/>). For the analysis, I wanted to retain as many of the 200 ACSI firms as possible, but I only included industries for which the ACSI had been tracked for over five years so as to focus the study on those firms with substantial time series data. This reduced the sample to 101 firms. Appendix B provides a listing of the firms used in this study, categorized as 1) firms that manufacture consumer products, and 2) firms that operate in the service industry.

Measures

Customer satisfaction may be operationalized as either a transaction-specific or a cumulative measure (Fornell et al. 1996). This study uses the cumulative operationalization

of customer satisfaction in which a consumer makes an evaluation of their overall satisfaction with the product. According to Anderson et al. (2004), cumulative customer satisfaction is a superior indicator of current and future firm performance, and therefore managers are more interested in enhancing a customer's overall satisfaction than their transaction-specific satisfaction. First, the construct of customer satisfaction is discussed, and then some descriptive statistics for each measure are provided.

Customer Satisfaction. The ACSI is used as the metric of customer satisfaction. It was developed in 1994 at the University of Michigan by Fornell and colleagues, and provides a standardized metric for assessing and comparing customer satisfaction levels across firms, over time (<http://www.theacsi.org/>). The ACSI collects data through randomized telephone surveys of customers who have recently purchased a product or service from the focal firm. Surveys are conducted at the brand level, and are then aggregated to determine a single customer satisfaction score for each firm annually. Scores range from 0 to 100 for each of the 200 firms that the ACSI tracks, whereby a score of 100 reflects the upper limit of customer satisfaction. It is a comprehensive measure that is consistent across firms and boasts over fourteen years of time series data.

The mean ACSI score throughout the time span of 1994–2008 is 77. The lowest ACSI score of all companies across years is a 49 for PG&E (an energy company) and the highest score is a 91 for Heinz. In addition to the variation in ACSI scores across firms, there is also a great deal of within-firm variation over time. Figure 2.3a presents a frequency chart of the ACSI scores aggregated across companies and over time. Figure 2.3b presents the frequency of the time-averaged ACSI scores across companies.

Figure 2.3a
Distribution of ACSI Scores across Companies and over Time

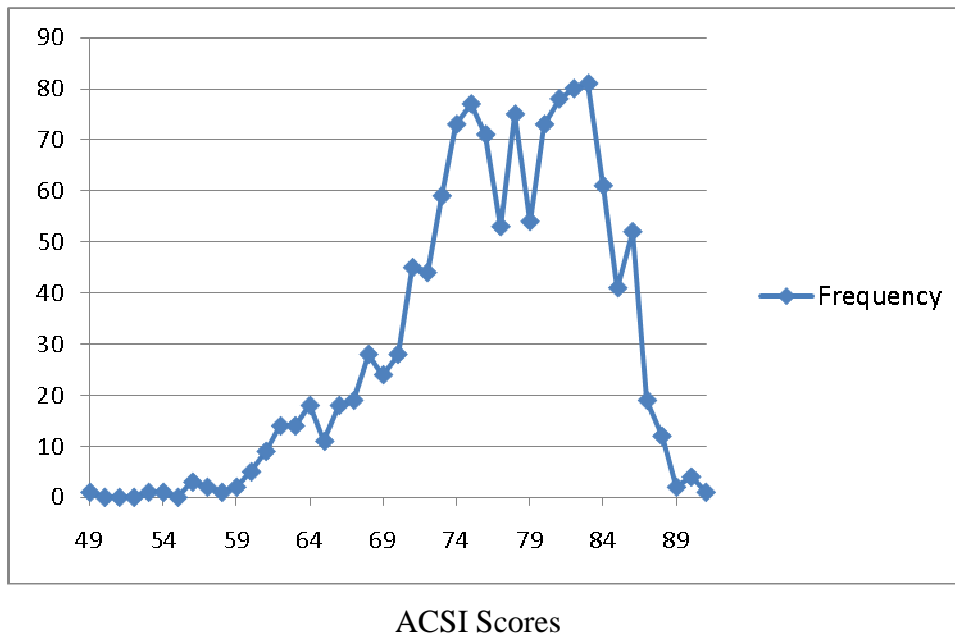
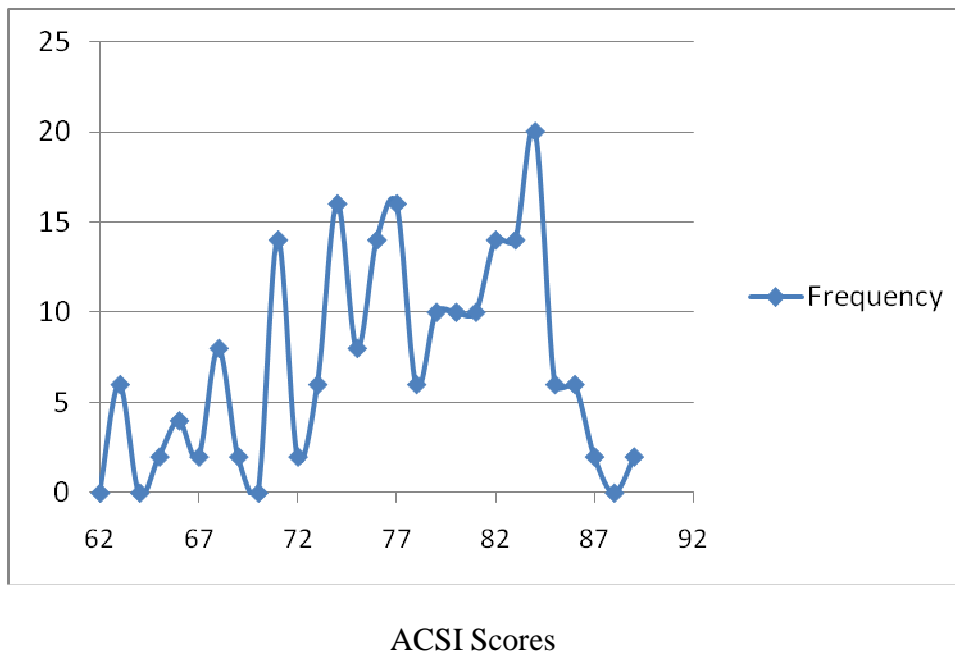


Figure 2.3b
Distribution of Time-Averaged ACSI Scores across Companies



Advertising effort. To operationalize advertising effort, I construct a relative measure that adjusts the firm's advertising spending to reflect sales achieved in the previous year. As such, advertising spending by firm size is normalized, making upfront comparisons between firms (of different sizes) feasible. Advertising spending and sales figures are restricted to U.S. markets since the focus of the study is the effects of U.S. advertising on American customer satisfaction. U.S. advertising data for each firm were obtained from TNS Media. These data reflect each firm's spending on television, print, radio, outdoor, and internet advertising¹. U.S. sales figures were obtained from the COMPUSTAT database.

Firm Value. Following Srinivasan and Hanssens (2009), Dutta et al. (2004), and Fang et al. (2008), tobin's q is used as a measure of firm value. An advantage of using tobin's q over accounting measures or stock price is that it incorporates multiple dimensions of a firm's financial viability within one stable measure that is relatively insulated from management manipulation (Fang et al. 2008). Tobin's q captures the ratio of the market value of the firm to the replacement cost of a firm's tangible assets (Lee and Grewal 2004). Thus it has the forward-looking benefits of stock price, while also incorporating the value of the firm's assets. In addition, tobin's q can be used as a measure of a firm's intangible value (Bharadwaj et al. 1999). This is critical to the study, as great interest lies in measuring the effects on firm value of advertising with respect to optimizing customer satisfaction. Following Fang et al. (2008), I use Chung and Pruitt's method to calculate tobin's q. The necessary data was obtained from the COMPUSTAT Fundamentals Annual database and tobin's q was calculated for each firm-year observation.

¹ TNS Media provides advertising spending values based on rate card pricing. Since all of the firms were large firms with substantial advertising budgets, all of these firms should benefit from advertiser discounts, according to TNS Media. To correct for this, I discount all advertising totals by 20%.

2.5 Methodology

In a first step, random parameters stochastic frontier estimation is used to estimate the curvilinear relationship between advertising and customer satisfaction. Stochastic frontier estimation is applied so that each firm's advertising efficiency may be captured. By using a random parameters approach, I am able to allow for the inherent heterogeneity in the market among firms that span various industries, which affects the advertising—customer satisfaction production frontier. In a second step, this study explores how advertising effectiveness, advertising efficiency, and advertising effort impact firm value, while also exploring whether these effects are moderated by the firm being in the service industry versus the consumer products industry.

Step 1: Quantifying the impact of advertising on customer satisfaction

In a first step, the stochastic frontier estimation (SFE) technique (Dutta et al. 1999) is used to relate advertising effort to customer satisfaction in a quadratic way, which then allows for the derivation of optimal levels of advertising effort for each firm. SFE empirically estimates the efficient frontier and hence each firm's distance between actual performance and the maximum achievable performance. This discrepancy constitutes the firm's degree of inefficiency. The smaller the inefficiency level, the greater the firm's relative ability to transform advertising effort into high ACSI scores (Dutta et al. 2005). The stochastic function relating advertising to ACSI may be written as

$$(1) \quad \log \text{ACSI}_{i,t} = \alpha_{0i} + \alpha_{1i} \log (\text{adv}_{i,t} / \text{sales}_{i,t-1}) + \alpha_{2i} (\log (\text{adv}_{i,t} / \text{sales}_{i,t-1}))^2 + \varepsilon_{i,t} - \eta_{i,t}$$

where i and t are indices referring to firm i and year t , respectively, whereby time is given in years, from 1994 – 2008. The composite error is the sum of the idiosyncrasy and the inefficiency (Greene 2005). The symmetric stochastic error $\varepsilon_{i,t}$ can be decomposed as $e_{i,t} +$

u_i , whereby $e_{i,t}$ is assumed to be an i.i.d. normal variable with zero mean and constant variance σ_ε^2 and u_i is a random firm component allowing for the correction of the stratified nature of the data. The one-sided (nonnegative) inefficiency component $\eta_{i,t}$ is assumed to be distributed half-normal with zero mean and constant variance σ_η^2 (Dutta et al. 2004). Each η can then be calculated from the conditional distribution of η given $\varepsilon_{i,t} - \eta_{i,t}$, where ε is normally distributed and η is half-normally distributed (Luo and Donthu 2005). The estimator of η_{it} is

$$(2) \quad E[\eta_{i,t} | (\varepsilon_{i,t} - \eta_{i,t})] = \frac{\sigma\lambda}{1 + \lambda^2} \left[\frac{\phi(a_{it})}{1 - \Phi(a_{it})} - a_{it} \right]$$

where $\sigma = [\sigma_v^2 + \sigma_u^2]^{1/2}$, $\lambda = \sigma_u / \sigma_v$, $a_{it} = \pm(\varepsilon_{it} - \eta_{it})\lambda / \sigma$, and $\phi(a_{it})$ and $\Phi(a_{it})$ denote the standard normal density and CDF evaluated at a_{it} , respectively (Greene 2005, p. 272).

The firm's annual efficiency is obtained by using the following function (Kumbhakar and Lovell 2000):

$$(3) \quad \varphi_{it} = \text{EXP}(-\eta_{it})$$

The major criticism of the standard SFE approach is that it imposes a single parametric structure on the data (Dutta et al. 2004) and thus does not allow for heterogeneity across firms. This limitation is addressed by using a random parameters specification which models continuous parameter variation from which one can derive different parametric structures for each firm without imposing a priori assumptions. In Equation 1, α_{1i} and α_{2i} jointly represent the firm-specific advertising elasticities. Based upon the α_{1i} and α_{2i} parameters, I can derive optimal advertising effort for each firm by taking $-\alpha_{1i} / 2\alpha_{2i}$ if the relationship between advertising effort and ACSI is significant and curvilinear. This value represents the firm-specific level of advertising effort that optimizes customer satisfaction.

Thus, the model allows for both a firm-specific advertising—customer satisfaction curve and firm-specific advertising inefficiencies (Greene 2005).

Once the optimal advertising effort value is calculated, the extent of over/underadvertising of each firm for each year may be obtained by subtracting actual advertising effort by firm i at time t from each firm's respective time-invariant optimal level of advertising effort.

Step 2: Evaluating the influence of advertising effectiveness, efficiency, and the moderating effect on firm value of being a product or service firm

Next, I relate a firm's advertising effectiveness, efficiency, and its state of being a product versus service firm to firm value. To evaluate whether firms are overadvertising or underadvertising, I calculate the discrepancies between actual advertising effort and the optimal level that maximizes customer satisfaction, as described above. This analysis allows for asymmetric effects between the underadvertising regime and the overadvertising regime. Next, I account for varied levels of efficiency in converting advertising effort to customer satisfaction. Finally, I control for whether the firm produces consumer products or operates in the service industry to test whether the nature of the business has a moderating effect.

I relate tobin's q for firm i at time t to the extent of over/underadvertising and the advertising efficiency at which the firm operates while also controlling for whether the firm produces consumer products or services, to see to what extent over/underadvertising can indeed have a detrimental effect on firm value.² The following model is estimated:

² There were eleven observations in which tobin's q had a negative value, driven in each instance by a large negative Common Equity Liquidation Value (COMPUSTAT). The majority of these observations were for

$$\begin{aligned}
(4) \quad \text{tobin's } q_{i,t} = & \beta_0 + \beta_1 \text{eff}_{i,t} + \beta_2 [|\text{Adv}/\text{Sales}_{t-1} - \text{Adv}/\text{Sales}_{t-1}^*| \times \text{OA}]_{i,t} + \\
& \beta_3 [|\text{Adv}/\text{Sales}_{t-1} - \text{Adv}/\text{Sales}_{t-1}^*| \times \text{UA}]_{i,t} + \beta_4 (\text{Adv}/\text{Sales}_{t-1})_{i,t} + \\
& \sum_{k=5}^{k=20} \beta_k \times \text{year}_{k-4} + u_i + e_{it}
\end{aligned}$$

where *eff* refers to advertising efficiency, $\text{Adv}/\text{Sales}_{t-1}^*$ refers to optimal advertising effort that is based on firm-specific parameters, OA is a dummy variable that equals one if a firm is overadvertising and zero if a firm is not overadvertising, and UA is a dummy variable that equals one if a firm is underadvertising and zero if a firm is not underadvertising. I control for longitudinal fluctuations in the market by including dummy variables for time (year). $e_{i,t}$ is assumed to be an i.i.d. normal variable with zero mean and constant variance σ_e^2 and u_i is a random firm component allowing for the correction of firm-specific effects.

To test for moderating effects, Equation 4 is extended by introducing an interaction of a Products/Services dummy variable with advertising effectiveness as follows:

U.S. Airways for the years following the events of September 11, 2001, which included their filing for Chapter 11 bankruptcy in 2004. So as not to bias the results, the negative observations of tobin's q were dropped.

$$\begin{aligned}
(5) \quad \text{tobin's } q_{i,t} = & \beta_0 + \beta_1 \text{eff}_{i,t} + \beta_2 [| \text{Adv}/\text{Sales}_{t-1} - \text{Adv}/\text{Sales}_{t-1}^* | \times \text{UA}]_{i,t} \\
& + \beta_3 ([| \text{Adv}/\text{Sales}_{t-1} - \text{Adv}/\text{Sales}_{t-1}^* | \times \text{UA}]_{i,t} \times \text{Products}) \\
& + \beta_4 [| \text{Adv}/\text{Sales}_{t-1} - \text{Adv}/\text{Sales}_{t-1}^* | \times \text{OA}]_{i,t} \\
& + \beta_5 ([| \text{Adv}/\text{Sales}_{t-1} - \text{Adv}/\text{Sales}_{t-1}^* | \times \text{OA}]_{i,t} \times \text{Products}) + \beta_6 (\text{Adv}/\text{Sales}_{t-1})_{i,t} \\
& + \beta_7 \text{Products} + \sum_{k=8}^{22} \beta_k \times \text{year}_{k-7} + u_i + e_{it}
\end{aligned}$$

where Products is a dummy variable that equals 1 if the firm produces consumer products and 0 if the firm operates in the service industry.

2.6 Results

The results of Step 1 are first discussed to see to what extent over- or underadvertising effects can be found with respect to optimizing customer satisfaction. Next, I report the effects of over- and underadvertising on firm value while controlling for each firm's advertising effort and efficiency.

The impact of advertising on customer satisfaction

The results for the random parameters SFE analyses are reported in Table 2.1.

Table 2.1
Results of Random Parameters Stochastic Frontier Estimation: Impact on ACSI

Variable	Coefficient	Standard error	Standard dev.	Standard error
Constant (α_0)	4.399	.0008 ***		
Adv/Sales _{t-1} (α_1)	-.0017	.0006 ***	.0730	.0007 ***
(Adv/Sales _{t-1}) ² (α_2)	-.0025	.0002 ***	.0055	.0002 ***
λ	2.3819	.0497 ***		
σ	.0692	.0004 ***		
σ_u	.0638			
σ_v	.0268			
Log likelihood	1,779.28			

*** $p < .01$; ** $p < .05$; * $p < .10$

N=1,184

Multicollinearity does not seem to be a problem based on the variance inflation factors (VIF).

The maximum VIF is 1.85, which is well below the common cut-off threshold of 10 (e.g.

Kleinbaum et al. 1988). A curvilinear relationship between advertising effort and customer

satisfaction is found, which provides support for *H1*. Both the linear and the quadratic

parameters have negative coefficients: ($\alpha_1 = -.0017$; $p < .01$), ($\alpha_2 = -.0025$; $p < .01$). The

standard deviations of both the linear and the quadratic terms are highly significant at $p < .01$,

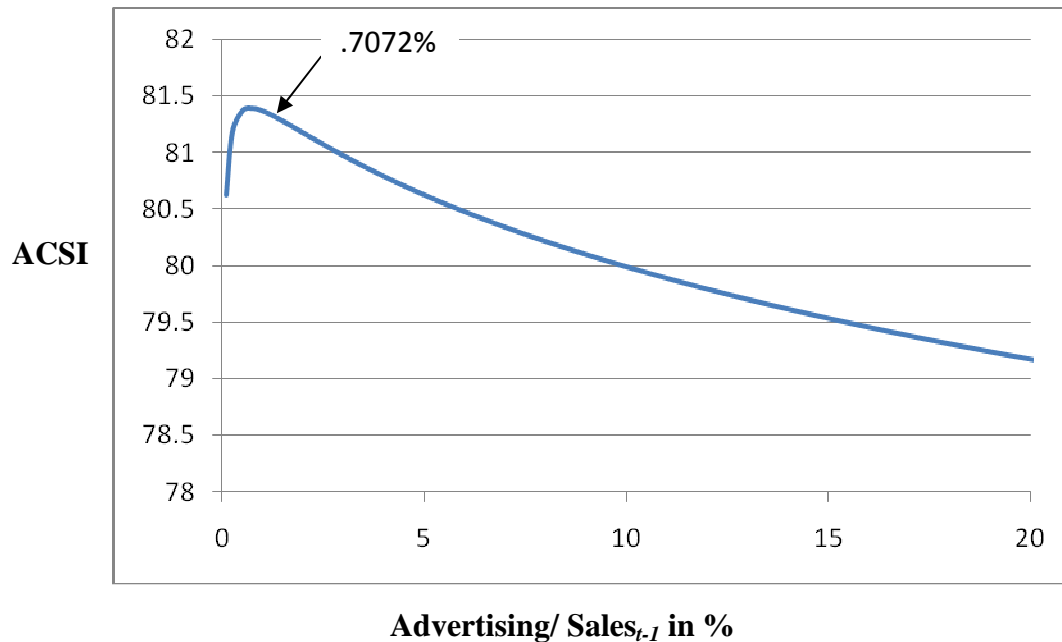
which indicates that there is a great deal of variability surrounding the average curve.

On average, the optimal level of advertising effort that maximizes customer

satisfaction for the aggregated data is .707% of the previous year's sales. Figure 2.4 shows

the expected value of the curve.

Figure 2.4
Relationship between Advertising Effort and Predicted ACSI
Based on Aggregate Parameter Results



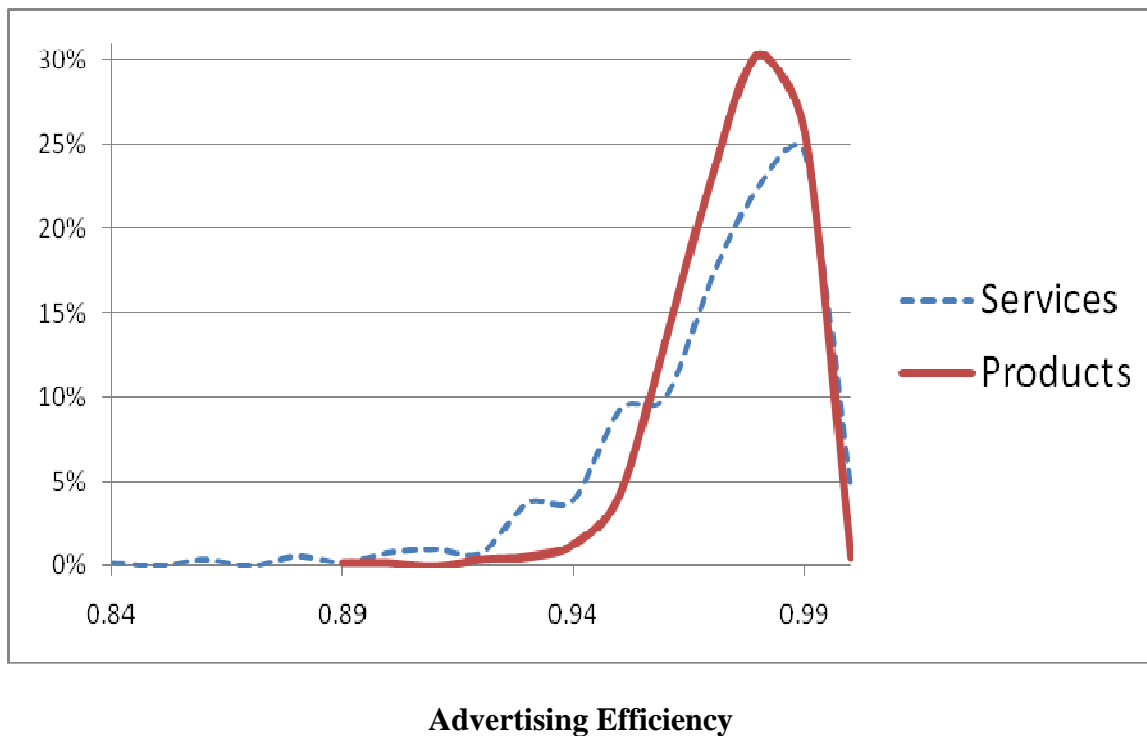
The average optimal level of advertising effort lies in the mid-range of the observations, as 55% of the observations fall below and 45% are above it. A firm-specific optimal level of advertising effort can be derived using the individual firm parameters, α_{1i} and α_{2i} . An overview of these firm-specific optima is presented in Appendix C. The optimal advertising effort levels range from 0%, indicating that any advertising is overadvertising, to very high levels that well exceed the realistic range, indicating that customer satisfaction will continue to increase with additional advertising.

This broad range of optimal advertising effort levels is found for both product firms and service firms. The actual advertising effort for the firms in this study ranges from 0% to 18.75%, with a median advertising effort of .55%. Procter & Gamble exhibited the greatest

advertising effort among product firms with 13.33% in the year 2002. Burger King showed the highest advertising effort among service firms with 18.75% in 2008³.

Firms in the service industry have a wider range of advertising efficiency than firms that produce consumer products. The mean advertising efficiency of the product firms is .970 with a standard deviation of .014, while service firms have a slightly lower mean advertising efficiency at .965 and a standard deviation of .025. Figure 2.5 shows the proportional distribution of the product and service firms' respective advertising efficiencies and Table 2.2 provides some descriptive statistics of advertising efficiency.

Figure 2.5
Proportional Distribution of Derived Advertising Efficiencies: Products vs. Services



³ Franchises are unique in that they receive advertising fees from franchisees, in addition to initial franchise fees and annual fees and royalties. Thus, corporate expenditure on advertising is subsidized by local franchisees (Carney and Gedajlovic 1991).

Table 2.2
Descriptive Statistics of Derived Advertising Efficiency

	Min	Max	Mean	Std. Dev.
Products	.882	.994	.970	.014
Services	.740	.995	.965	.025

The Impact on Firm Value

Table 2.3 reports the relationship between over/underadvertising and firm value when accounting for advertising efficiency and absolute advertising effort, as well as whether the effects of over/underadvertising and advertising effort are dependent on the state of the firm operating in the service industry or producing consumer products.

Table 2.3
Impact of Efficiency, Effectiveness, Advertising Effort, and Moderating Effect of Products/Services on Tobin's q

Variable	Hypothesized Sign	Coefficient	Standard error	Effect Size (Cohen's d)	Elasticity
Constant (β_0)		-2.603	1.106 **		
Advertising Efficiency (β_1)	+ <i>H5</i>	3.770	1.130 ***	.11	2.011
Underadvertising (β_2)	- <i>H3</i>	.000	.000	n.s.	n.s.
Underadvertising x Products(β_3)	+ <i>H6</i>	.000	.000	n.s.	n.s.
Overadvertising (β_4)	- <i>H3</i>	-.163	.041 ***	.13	-.074
Overadvertising x Products (β_5)	+ <i>H6</i>	.037	.108	n.s.	n.s.
Advertising Effort (β_6)	+ <i>H2</i>	.218	.030 ***	.23	.219
Products (β_7)		-1.170	2.873	n.s.	n.s.

*** $p < .01$; ** $p < .05$; * $p < .10$
N=1,033

Based on the VIFs for each parameter, multicollinearity does not seem to be a problem. The highest VIF is 2.37, which indicates that there is no harmful collinearity. I perform a unit-root test to determine whether tobin's q is stable or whether it is trending. To test for a unit root, I use the Augmented Dickey-Fuller test recommended by Enders (1995) and frequently used in marketing applications (Trusov et al. 2008), which tests the null that tobin's q is evolving. The results reject the null and thereby indicate that tobin's q is stationary.

The estimates reported in Table 2.3 are unstandardized regression coefficients, but effect sizes are also reported using the Cohen's d metric. The effect sizes are generally defined as .2 being a small effect, .5 being medium, and .8 being a large effect (Cohen 1988).

As expected (H2), the relationship between advertising effort and firm value is positive and significant ($\beta_6 = .218$; $p < .01$). Overadvertising has a negative and significant main effect on firm value ($\beta_4 = -.163$; $p < .01$). This provides partial support for Hypothesis 3. Moreover, as proposed in Hypothesis 4, the effect of overadvertising is stronger than the effect of underadvertising, as the effect of underadvertising is not significant. Hypothesis 5 is supported as well, as advertising efficiency has a positive and significant effect on firm value ($\beta_1 = 3.770$; $p < .01$). However, the state of being a product firm versus a service firm does not significantly moderate the relationship between under-/overadvertising and firm value.

Since the tobin's q model is not a log-log model, I also report elasticity measures for each of the predictors that significantly affect tobin's q. The elasticity value for advertising efficiency of 2.011 means that for a 1% increase in advertising efficiency, tobin's q will increase by 2.011%. Likewise, tobin's q will decrease by .074% for every 1% increase in

overadvertising, and tobin's q will increase by .219% for every 1% increase in advertising effort.

2.7 Validation Analysis

Alternate ways to address heterogeneity

In Step 1 of the study, a random parameters modeling approach is used to address the issue of heterogeneity when evaluating the relationship between advertising and customer satisfaction. However, alternatives to this approach should be explored in order to first of all determine if it is necessary to make accommodations for heterogeneity, and if so, if there is a superior alternative approach for modeling the data. These validation checks are performed by comparing the results to those of a latent class stochastic frontier model and to a stochastic frontier model with no correction for heterogeneity.

To assess the overall fit of the alternative models versus the random parameters model, the AIC and BIC (Schwartz's criterion) are used. These criterion results show that accounting for heterogeneity greatly improves the fit of the model, as the random parameters model and the latent class model have a much better fit than the homogenous model (see Table 2.4). Among the three models, the random parameters model has the best fit.

Table 2.4
Validation Analysis Model Comparison Statistics

Model	AIC	BIC
Homogeneous SFE	-2,629	-2,625
Latent Class SFE (3 classes)	-4,139	-4,125
Random Parameters SFE	-4,346	-4,366

Varying parameters models that allow for unmeasured heterogeneity, such as the random parameters model and the latent class model, are preferable to models that do not account for heterogeneity (Greene 2005), such as the fixed stochastic frontier model. However, the random parameters approach offers the additional benefit of allowing the parameters to vary by individual firm, while the parameters in the latent class model vary only across the three classes.

The latent class model allows for a latent sorting of the observations in the data set into j latent classes. The unconditional likelihood for firm i is obtained as the weighted sum of their j -class likelihood functions, where the weights are the probabilities of class membership. These are probabilities of certainty of correct classification; not the probability that the observation resides in class j (Greene 2005). The latent class stochastic function relating advertising to ACSI may be written as

$$(7) \quad \log \text{ACSI}_{i,t} | j = \rho_1 | j + [\rho_1 \log (\text{adv}_{i,t} / \text{sales}_{i,t-1}) + \rho_2 (\log (\text{adv}_{i,t} / \text{sales}_{i,t-1}))^2] | j + \varepsilon_{i,t} | j - \eta_{i,t} | j$$

To determine the number of classes, I follow Orea and Kumbhakar (2004) and use the AIC and BIC (Schwartz's criterion) as well as the face validity of the results. The AIC and BIC statistics are based on the model's goodness of fit but also contain a penalty for overparameterizing, and thus allow for comparison with different numbers of classes (Orea and Kumbhakar 2004). According to the criterion results provided in Table 2.5a, the model fit improves as the number of classes increase from one to three.⁴

⁴ I attempted to estimate a four-class model, but the model did not converge. Following Orea and Kumbhakar (2004), I take this as a signal that a four-class model is overspecified.

Table 2.5a
Validation Analysis Latent Class Selection Statistics

No of classes	No of parameters	AIC	BIC
One	3	-2,629	-2,625
Two	6	-3,738	-3,729
Three	9	-4,139	-4,125

The results of the three-class model of the latent class SFE analyses are reported in Table 2.5b. Table 2.6 provides a listing of the firms in each of the three latent classes.

Table 2.5b
**Validation Analysis Results of Latent Class Stochastic Frontier Estimation:
Impact on ACSI**

Variable	Coefficient	Standard error
Class 1		
Constant (ρ_0)	4.420	16,135
Adv/Sales _{<i>t-1</i>} (ρ_1)	.0035	.0004 ***
(Adv/Sales _{<i>t-1</i>}) ² (ρ_2)	-.0007	.0001 ***
Class 2		
Constant (ρ_0)	4.356	.0065 ***
Adv/Sales _{<i>t-1</i>} (ρ_1)	-.0018	.0007 **
(Adv/Sales _{<i>t-1</i>}) ² (ρ_2)	-.0011	.0003 **
Class 3		
Constant (ρ_0)	4.264	.0065 ***
Adv/Sales _{<i>t-1</i>} (ρ_1)	.0106	.0018 ***
(Adv/Sales _{<i>t-1</i>}) ² (ρ_2)	.0052	.0008 ***
Class probabilities		
Class 1	43%	
Class 2	39%	
Class 3	18%	
Log Likelihood	2,075.5	

*** $p < .01$; ** $p < .05$; * $p < .10$

Table 2.6
Validation Analysis Latent Class Membership

Class 1	Class 2	Class 3
Volvo	Volkswagen	Ramada
Oldsmobile	Pontiac	Holiday Inn
BMW	Ford	Pizza Hut
Toyota	Mazda	Taco Bell
Honda	Chevrolet	KFC
Buick	Dodge	Burger King
Cadillac	Jeep	Wells Fargo
Saturn	Liz Claiborne	Continental
Lincoln Mercury	Levi Straus	Delta
GM	Adidas	American Airlines
Mercedes	Nike	US Airways
Nissan	USPS	Northwest Airlines
Chrysler	Hilton	United Airlines
GE	Marriott	Bank of America
Whirlpool	Domino's	PG&E
Maytag	Wendy's	Energy Future Holdings
VF	Prudential Financial	Northeast Utilities
Hanes	MetLife	Consolidated Edison
FedEx	New York Life Insurance	Macy's
UPS	State Farm Insurance	
Southern Company	Allstate	
Duke Energy	Farmers	
CMS Energy	Southwest	
Coke	Apple	
Pepsi	Dell	
Busch	HP	
Heinz	Gateway	
General Mills	FPL Group	
Hershey	American Electric Power	
Quaker	Entergy	
ConAgra	Dominion Resources	
Tyson	Wal-Mart	
Kellogg	Kroger	
Kraft	Safeway	
Nestle	Supervalu	
P&G	Winn Dixie	
Clorox	JC Penney	
Dial	Sears	

Multicollinearity does not seem to be a problem based on the VIFs. The maximum VIF is 1.85, which is well below the common cut-off threshold of 10 (e.g. Kleinbaum et al. 1988). Using a three-class model, a curvilinear relationship between advertising effort and customer satisfaction is found for classes 1 and 2, which provides partial support for *H1*. These results have significant negative quadratic coefficients for Class 1 (-.0007) at $p < .01$, and for Class 2 (-.0011) at $p < .05$. Class 3 exhibits a monotonically increasing curve. This class includes service firms only and represents 20% of the sample, while classes 1 and 2 each represent 40% of the sample. Overall, this is in line with the results of the random effects model, which displays a curvilinear relationship between advertising and customer satisfaction with a great deal of variation around the curve.

Next, this study explores another alternative model: the homogeneous SFE model in which the parameters do not vary and there are not multiple classes. Table 2.7 reports the results of this alternative model.

Table 2.7
Validation Analysis Results of Alternative Models: Impact on ACSI

Variable	Homogeneous SFE			Random Parameters SFE			
	Coefficient	Std. error		Coefficient	Std. error	Std. dev.	Std. error
Constant (α)	4.4625	.0026	***	4.399	.0008		***
Adv/Sales _{<i>t-1</i>}	.0022	.0011	*	-.0017	.0006	.0730	.0007
(Adv/Sales _{<i>t-1</i>}) ²	-.0004	.0003		-.0025	.0002	.0055	.0002
λ	9.1698	.8952	***	2.3819	.0497		***
σ	.1491	.0036	***	.0692	.0004		***
σ_u	.1482			.0638			
σ_v	.0162			.0268			
Log likelihood	1,308.05			1,779.28			

*** $p < .01$; ** $p < .05$; * $p < .10$

Like the random parameters model, the homogeneous SFE model supports a curvilinear relationship between advertising effort and customer satisfaction. In the homogenous stochastic frontier model, the sign of the quadratic term is negative (-.0004) and the parameter is borderline significant at $p=.10$ (one-sided).

2.8 Discussion

The debate on the role of advertising in creating market value is yet unresolved. This study examines the advertising—market value relationship by incorporating the attitudinal measure of customer satisfaction in this relationship. More specifically, it investigates the role of advertising effectiveness (i.e. to what extent is a firm over- or underadvertising when trying to create customer satisfaction), and advertising efficiency (i.e. can a certain level of customer satisfaction be achieved with less advertising dollars spent). This study then assesses how these constructs may help to provide deeper insight into the advertising—market value relationship. As such, the impact of advertising on customer satisfaction was first examined. From this relationship, measures of advertising effectiveness and advertising efficiency with respect to optimizing customer satisfaction were derived using a random parameters stochastic frontier model. Next, I related each firm's advertising effectiveness and advertising efficiency to firm value.

A curvilinear relationship between advertising effort and customer satisfaction was found, which means that customer satisfaction declines beyond a certain threshold of advertising effort. Therefore, additional advertising beyond the optimal point represents overadvertising with respect to optimizing customer satisfaction. As advertising ineffectiveness increases, or as firms move further away from the optimal level of advertising

effort, their customer satisfaction scores decline. Still, the optimal level of advertising effort and the shape of the curvilinear relationship are found to vary significantly across firms. Indeed, a wide range of patterns is observed. Some firms have an extremely high level of optimal advertising effort, which means that customer satisfaction levels off at this high level of advertising effort. At reasonable levels of advertising effort, these firms will experience increasing customer satisfaction from additional advertising effort. Alternatively, firms that have an extremely low level of optimal advertising effort tend to overadvertise regularly. Similarly, some firms have steeper efficient frontiers than others, making inefficiency scores relative across firms. Thus, the shape of the advertising—customer satisfaction curve plays a large role in determining advertising effectiveness and efficiency.

This analysis shows that advertising ineffectiveness, in the form of overadvertising, is detrimental to firm value. The results support the proposition that overadvertising sends negative signals and induces tedium, which can translate to customer complaints and a deficiency of positive word of mouth, both of which have a negative effect on firm value.

In sum, how does this study contribute to the advertising—market value debate? Complementing advertising input with the extent to which customer satisfaction is optimized illuminates the conditions under which advertising contributes to firm value. This essay addresses the vital concern of management accountability with regard to advertising expenditure. More specifically, it emphasizes the importance of advertising efficiency as well as putting forth the optimal level of advertising effort.

From a managerial point of view, this study supports the notion that some firms greatly overadvertise. By developing an awareness of and appreciation for the optimal level of advertising effort, managers can avoid this trap and advertise at a level that maximizes

customer satisfaction. With respect to advertising efficiency, managers should strive for maximization. Armed with this knowledge, managers can strategically implement an advertising campaign with the potential to optimize customer satisfaction and ultimately increase firm value.

2.9 Limitations

First, I recognize that the analysis was conducted at the firm-level (e.g., Procter and Gamble, Safeway, Ford), necessitated by the fact that the ACSI and Tobin's q are calculated at the firm-level. However, much advertising is targeted at the product-level, and consumers generally make their customer satisfaction evaluations by judging product performance. Therefore, modeling advertising and customer evaluations at the product-level presents an opportunity for further research.

Another limitation of this analysis is the assumption that the same level of advertising effort optimizes customer satisfaction for a firm throughout the entire time period of our study. Though this is a constraint, advertising effort is a relative measure in that it is expressed as advertising expenditure over the previous years' sales. Thus, it is possible that the optimal advertising effort could remain constant for a firm over time, with sales and advertising expenditure moving together.

A final limitation of this study is that the degree of heterogeneity of consumer responses hidden within the aggregate ACSI scores is not known. However, it is apparent that the service firms in the dataset are generally characterized by lesser advertising efficiency than the product firms. This could be an artifact of greater response variation for services, which would generally reduce the average ACSI score, thus dampening the

conversion of advertising to customer satisfaction. Satisfaction heterogeneity is relevant to this analysis because it reduces the translation of customer satisfaction to shareholder value (Grewal et al. 2010). As satisfaction heterogeneity increases, the returns to customer satisfaction decrease. Based on the intangibility, heterogeneity, and inseparability of services, I speculate that there is greater customer satisfaction heterogeneity among service firms, which thus has a negative impact on their value. If the heterogeneity of consumer responses does indeed fall roughly along product and service lines, then this issue is largely addressed in the model by including the moderating effect.

In sum, this research shows that customer satisfaction is a valuable intermediate metric that illuminates some of the ways in which advertising influences firm value. Further, customer satisfaction is an accessible metric that is easily understood and can be used by managers as a forward-looking barometer of success. Thus, by showing how optimizing customer satisfaction through advertising affects firm value, this research may help managers increase firm value through advertising and encourage future research that incorporates intervening attitudinal constructs.

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CHAPTER III -- ESSAY II: AN ANALYSIS OF LOYALTY CAPABILITY

3.1 Introduction

Building, managing, and maintaining strong customer loyalty is a central task of the marketing manager (Dick and Basu 1994; Uncles and Laurent 1997). Considering the significant strategic and financial advantages of a loyal customer base, that task is not just important—it is essential. Some of the desirable behaviors that we might expect of loyal customers include repeat purchases, positive word of mouth (Zeithaml et al. 1996), and a demonstrated decrease in price sensitivity (Wernerfelt 1986; Wernerfelt 1991). While the vital role of customer loyalty is widely recognized, the strategies and processes required to skillfully generate and activate that loyalty are less universally understood. Many marketing managers continue to wrestle with fundamental questions about why some firms are consistently more adept at converting resources into loyalty than others. These questions address a firm's "loyalty capability".

The construct of loyalty capability reflects a firm's use of its skills and tacit knowledge to competently deploy its marketing resources in order to generate and facilitate customer loyalty. Firms with superior loyalty capability may enjoy competitive advantages associated with establishing strong customer relationships and strengthening a customer's attitude toward the brand. Further, loyalty capability could bestow a demand-side advantage on the firm, allowing the firm to charge a higher price relative to competition at a given level of demand, or generate greater demand at a given price level (cf. Dutta et al. 1999). When a

firm is able to successfully leverage its loyalty capability and establish a position of high customer loyalty, other firms seeking to secure a portion of that loyalty will then find it difficult to compete with the pioneering firm (Ries and Trout 1981; Wernerfelt 1984). Moreover, high levels of loyalty can better withstand marketing efforts by competing firms that are striving to cause switching behavior (Oliver 1997).

In general, capabilities are of great importance to the firm as they may explain significant variation in firms' performance (Dutta et al. 1999; Vorhies and Morgan 2005). Capabilities measure the firm's ability to efficiently combine and deploy its resources to attain a certain objective (Amit and Schoemaker 1993; Dutta et al. 1999). More specifically, "capabilities are complex bundles of skills and accumulated knowledge, exercised through organizational processes, which enable firms to coordinate activities and make use of their assets" (Day 1994, p. 38).

While it is feasible to observe a firm's resources or inputs and its subsequent outputs, the firm's ability to convert resources into outputs may only be inferred (Dutta et al. 2005). In contrast to firm resources, which are externally available and transferable (Grant 1991; Amit and Schoemaker 1997), capabilities are deeply embedded within an organization (Day 1994), and are subsequently more difficult to observe. If a capability is highly tacit and complex, and thus difficult to duplicate, then it can be described as imperfectly imitable (Day 1994; Dutta et al. 1999; Peteraf 1993). If capabilities are firm-specific and cannot easily be transferred to or purchased by another company, then they are considered imperfectly mobile. When the conditions of imperfect mobility and imperfect imitability are both met, then capabilities cannot simply be competed away, and they may serve as a sustainable

competitive advantage for the firm (Peteraf 1993). This competitive advantage represents a unique ability of the firm to achieve the desired output objective in an efficient way.

Further, capabilities may be benchmarked among firms within a given industry in order to facilitate organizational learning for the purpose of building a sustainable competitive advantage (Vorhies and Morgan 2005). The process of benchmarking in itself can be viewed as a tool to enhance market-based learning (Teece et al. 1997), as a firm seeks to identify best practices among firms and replicate them (e.g., Akdeniz et al. 2010, Camp 1995; Mittelstaedt 1992). In addition to adopting best practices, this market-based learning enables the firm to better anticipate customer needs and create long-term relationships with customers (Akdeniz et al. 2010), which particularly contributes to the firm's aptitude for loyalty capability.

Capabilities can broadly be conceptualized as the efficiency with which the firm converts its available resources into the desired output, relative to its competitors. Thus, capabilities represent an “‘intermediate transformation ability’ between resources (i.e., inputs) and objectives” (Dutta et al. 2005, p. 278). With respect to the objective of enhancing customer loyalty, the resources that a firm could use to achieve this objective must be defined. Next, one must determine the relevant set of competitors against which the firm can be benchmarked (Collis and Montgomery 1995; Dutta et al. 2005). Using a measure of the quantity of resources deployed by each firm and the subsequent respective outputs of customer loyalty, one can then determine each firm's relative degree of loyalty capability, or efficiency, in converting their resources into customer loyalty.

While examples of R&D capability, operations capability (Dutta et al. 1999), technology capability, and marketing capability (Moorman and Slotegraaf 1999;

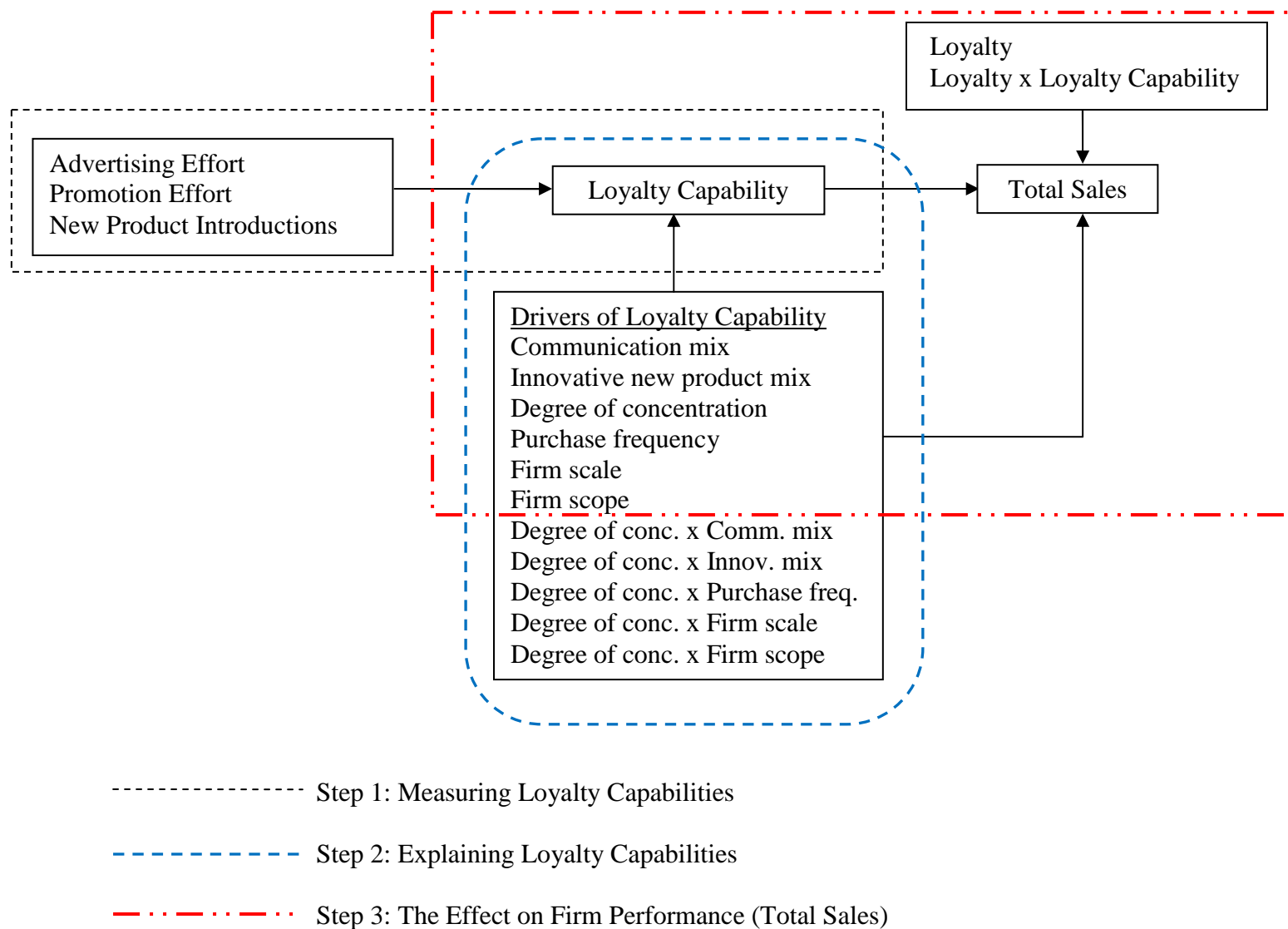
Kalaighnam et al. 2012) are present in the marketing literature, a detailed examination of loyalty capability is lacking. Thus, the overall goals of this study are threefold: the first goal is to measure loyalty capabilities; the second goal is to explain why loyalty capabilities differ across firms and over time; and the final goal is to examine the impact of loyalty capability on firm performance. This study focuses on firms in the CPG sector. Attaining and retaining loyalty in a CPG setting is particularly challenging, as the process of buying frequently-purchased household goods is considered to be one of low involvement (Neslin 2002; Suh and Yi 2006). In low involvement scenarios, the consumer perceives little differentiation between brands (Dick and Basu 1994), perceives the purchase to have little or no personal relevance (Celsi and Olson 1988), and devotes minimal thought to brand choice (Neslin and Shoemaker 1989). Consequently, firms face significant structural obstacles in their efforts to engage customers and generate strong customer loyalty. Despite these challenges, it is still worthwhile for a firm to improve its ability to establish customer loyalty in this setting if it bestows a competitive advantage to the firm.

To explore some of the prime drivers of loyalty capability and obtain corresponding insights, I analyze data on 26 U.S. firms in the CPG sector, collected between 1994 and 2010. Figure 3.1 provides an overview of the approach used and steps taken. In a first step, a measure of each firm's loyalty capability is obtained by relating each firm's marketing efforts to customer loyalty using a random parameters stochastic frontier analysis. In a second step, I explore the derived measure of loyalty capability using a set of explanatory variables, listed in Figure 3.1. This enables the analysis of factors that contribute to an increase/decrease in loyalty capability. In a third and final step, I examine the effect of loyalty capability on firm performance in terms of total sales. In doing so, I control for

absolute levels of customer loyalty, as well as the primary drivers of loyalty capability from Step 2. This allows for the isolation of effects that can truly be attributed to loyalty capability.

In the following text, I first conceptually discuss the construct of loyalty capability and develop a number of hypotheses related to the potential drivers of loyalty capability. Proceeding to the Methodology section, in order to empirically obtain measures of loyalty capability, I evaluate the relationship between customer loyalty and selected marketing mix resources used by the firm. Next, I test the hypotheses developed in the conceptual framework by relating the drivers to loyalty capability. Finally, I assess the financial implications of loyalty capability by relating it to firm sales while controlling for the firm's allocation of its marketing mix resources, its portfolio strategy, category characteristics, and absolute levels of customer loyalty.

Figure 3.1
Overview of Research Approach



3.2 Conceptual Framework of the Drivers of Loyalty Capability

Loyalty capability is conceptualized as the competence of an organization to form relationships with customers that are strong enough to withstand competitive pressure. Because customer loyalty is imperfectly mobile (Jap 1999), and thus difficult to imitate, it is likely that the ability of the firm to skillfully maintain and enhance customer loyalty will prove to be a defensible competitive advantage. In contrast to marketing capabilities that focus on the generation of tangible outcomes, such as product development capability and selling capability, as studied by Vorhies and Morgan (2005), loyalty capability centers on the firm's influence over the consumer's mindset. Mindset metrics can indicate whether marketing is moving consumers in the right direction through the hierarchy of effects (Keller and Lehmann 2006). Additionally, mindset metrics may alert the firm to a decline in customer interest, thus providing the firm an opportunity to intervene before the customer switches to a competitor (Srinivasan et al. 2010). In sum, the measurement of loyalty capability may help the firm to tell a richer story about their ability to relate to current customers, which may have significant implications for future customer behavior.

Loyalty capability is a type of marketing capability that can be classified as an outside-in capability, meaning that its focal point is outside of the organization (Day 1994). The focal point of loyalty capability is the customer and their emotions surrounding the firm and its brands. More specifically, loyalty capability represents a customer-linking capability, which is a subcategory of outside-in capabilities (e.g. Day 1994). Customer-linking capabilities are concerned with "creating and managing close customer relationships" (Day 1994, p. 44). They entail a collaborative relationship with the customer (Day 1994), and they are primarily based on interpersonal skills and tacit knowledge (Hooley et al. 2005). Thus,

the extent to which a firm is able to build a strong, collaborative relationship with the consumer will affect its loyalty capability.

The firm's degree of specialization will also have an impact on how the firm operates and interacts with consumers through the mix of innovative products that it introduces, through its mix of communications, and based on its overall portfolio of products. Previous research has defined the strategy associated with specialization as a focus strategy. A focus or specialist strategy refers to the size of the segment served by the firm, which is related to the size of the niche in which the firm competes (Mosakowski 1993). According to Wright (1987), a focus strategy involves serving a small cluster of buyers in a superior way. Firms with a focus strategy specialize in meeting specific needs that are not currently served by broad-targeted competitors. A specialized firm may "achieve competitive advantage by dedicating itself to the segments exclusively" (Porter 1985, p. 17), and excelling at providing customized solutions for those segments. Thus, a firm's degree of specialization may affect its loyalty capability in that it affects the firm's ability to differentiate itself from competitors and connect with a segment of customers.

In the following study, a firm's portfolio strategy, including its scope and scale, is used as a proxy for its degree of specialization, its mix of innovative product introductions is used as a proxy for the degree to which it offers unique benefits, and the firm's use of traditional versus nontraditional media is used as a proxy for its communication mix. Lastly, category characteristics, including the degree of concentration within a given market and the product interpurchase cycle, may affect the accessibility and strength of a consumer's relationship with the firm. Below, I elaborate on each of these strategic firm decisions and category characteristics and relate them to the relevant constructs of relationship-building

and specialization as a basis for discussing how they influence a firm's ability to enhance customer loyalty. I then present a number of hypotheses addressing how these variables may affect the firm's loyalty capability.

The impact of category characteristics on loyalty capability

Some of the category characteristics that may affect a firm's ability to form strong relationships with customers include the degree of concentration in the market and the frequency of purchase. Degree of concentration is a commonly used proxy for the degree of competition within a market. When market concentration is high, the number of powerful competitors is relatively small (Slater and Narver 1994). When market concentration is low, the industry is fragmented and rivalry among competitors tends to be more intense (Anderson et al. 2004). According to Anderson et al. (2004), the degree of market concentration affects the strength of a firm's ties to its customers, as low market concentration is associated with weaker ties to the customer. Within a fragmented market, "even satisfied customers are likely to be more difficult to retain and more price sensitive..." (Anderson et al. 2004, p. 174), which is likely to impede a firm's ability to build strong relationships with customers.

In contrast, a high degree of market concentration may be associated with stronger ties to customers, which contribute to a firm's relationship-building abilities. According to Ramaswamy (1994), firms in highly concentrated markets are less likely to compete solely on the basis of price. Rather, these firms may compete on dimensions that provide added value to a target segment, which may help the firm to differentiate themselves from competitors and further strengthen their ties with the customer. Thus, I propose that a high degree of market concentration will be positively associated with loyalty capability.

With respect to the effects of purchase frequency on a firm's ability to form strong relationships with customers, purchase alternatives that have recently been considered or are considered frequently will be more memorable to consumers (Posavac et al. 1997). Thus, products that are purchased frequently will tend to be more salient and therefore more accessible in a consumer's mind (Inman et al. 2009; Posavac et al. 1997). This accessibility helps a firm to establish strong relationships with consumers and it fosters customer loyalty by strengthening the relationship between consumer attitudes and behavior (Alba et al. 1991; Berger and Mitchell 1989; Biehal and Chakravarti 1983; Fazio and Zanna 1981; Fazio et al. 1989). In contrast, consumer products characterized by longer interpurchase cycles will be less accessible in the consumer's mind, which will negatively affect a firm's ability to develop strong relationships with consumers.

Therefore, I propose the following:

H1: A high degree of market concentration in the category in which the firm competes has a positive effect on loyalty capability.

H2: Interpurchase cycle length has a negative effect on loyalty capability.

The impact of the innovative new product mix on loyalty capability

According to Scheer et al. (2010), receiving unique benefits from a firm motivates the consumer to maintain a relationship with the firm. Using a firm's innovation level as a proxy for the degree to which a firm offers unique product benefits to consumers, it follows that a high level of innovation is positively associated with customer loyalty. In addition to offering unique benefits, the introduction of innovative products further contributes to customer loyalty by encouraging a dialogue with the consumer (Blake 2006) and making the brand more accessible in the consumer's mind.

With respect to a firm's new product introductions, the *level* of innovation associated with each new product is of interest, as new products fall on a continuum of innovation (Hage 1980), ranging from incremental to revolutionary. Revolutionary, or breakthrough innovations, are defined as "the first to bring novel and significant consumer benefits to the market" (Sorescu and Spanjol 2008, p. 115). In contrast, incremental products consist of minor improvements or simple adjustments, with significantly less new knowledge embedded in the innovation than a revolutionary product (Dewar and Dutton 1986). While the creation of a revolutionary innovation involves diversifying the expenditure of resources into new areas in which the firm may have little experience, incremental innovations involve staying within the firm's comfort zone, which requires minimal diversification of resources.

Within the CPG industry, revolutionary innovations typically correspond to innovations relating to intrinsic product features, while incremental innovations tend to be associated with extrinsic product features. Falling between incremental and revolutionary innovations on the continuum of innovativeness are usage innovations, which ask of customers to consider and use the product in a new way (Price and Ridgeway 1982).

Revolutionary innovations represent a departure from existing practice (Duchesneau et al. 1979; Ettlie 1983) and involve new knowledge embedded in the innovation (Dewar and Dutton 1986), and thus, the firm. Revolutionary innovations may become a competitive advantage to the firm, as they are difficult to imitate (Tirole 1988). Though revolutionary innovations are more costly to the firm than incremental innovations (e.g. Sorescu and Spanjol 2008), they offer an opportunity for the firm to create highly unique benefits for consumers. By presenting unique, unrivaled offerings to the customer, a firm may establish an early relationship with the customer before competitors are able to offer alternatives.

Thus, revolutionary innovations may provide the firm with a first-mover advantage that will help them to build relationships with customers that may withstand competition from new entrants. However, revolutionary innovations also have a high rate of failure (e.g. Neff 2005), causing the firm to run the risk of alienating existing customers.

In contrast, incremental innovations are “safer” in that they are not accompanied by significant idiosyncratic risk (Sorescu and Spanjol 2008) and they are likely to appeal to the current customer base. Prior research shows that consumers tend to use both intrinsic and extrinsic cues when evaluating product quality (Jacoby et al. 1971; Simonson 1989; Szybillo and Jacoby 1974). However, Richardson et al. (1994) find that consumers actively evaluate CPG quality not based on intrinsic cues, but based on extrinsic cues only. Additionally, extrinsic product innovations tend to be very visible, making it easier for the firm to engage the consumer and communicate the product’s benefits via advertising and promotion. Thus, given the low-involvement nature of CPGs, extrinsic product benefits may in fact have a stronger positive effect on loyalty capability than intrinsic innovations. According to Gielen (2012), strong national brands may do well to simply make packaging improvements, as consumers tend to look for reasons not to leave these brands, and thus remain loyal. Therefore, while revolutionary innovations may offer more distinctive benefits to consumers than incremental innovations, it may prove difficult to motivate and elevate consumers to the level of engagement necessary to appreciate the benefits offered through revolutionary, or intrinsic innovations.

Though inherently innovative consumers may be particularly drawn to usage innovations that enable them to use products in new and creative ways (Ridgeway and Price 1994), usage innovations do not present new product-related elements that would engage or

elicit further dialogue with the consumer. Additionally, competitors will be able to imitate usage innovations extremely quickly, as it involves a repositioning of the product with little to no actual product modifications. Therefore, usage innovations will not contribute to a sustainable competitive advantage, and the extent to which usage innovations may enhance a firm's relationship with the customer will not be as great as that of extrinsic, or incremental innovations.

In sum, to efficiently increase customer loyalty, firms need to strike the right balance of engaging in enough innovation to provide a steady stream of unique benefits that motivate the consumer to maintain a relationship with the firm, and releasing innovations that will generate a dialogue with the consumer and promote strong relationships, while also maintaining a consistent image.

Thus, the following hypothesis is proposed:

H3: Incremental, revolutionary, and usage innovations have a positive effect on loyalty capability, with the effect of incremental innovations being greater than that of revolutionary and usage innovations.

The impact of communication mix on loyalty capability

With respect to a firm's method of communicating with consumers, television advertising is used as a proxy for traditional media, and internet advertising is used as a proxy for nontraditional media. TV is an established media with which firms have a great deal of experience. Firms in the CPG sector have traditionally had a very strong presence in television advertising, and as shown in this study's data sample, are significantly less involved in internet advertising.

Given that purchase situations involving CPGs tend to be low-involvement, for many CPGs, the consumer's cost of evaluating the product through purchase and experience will be less than the cost of engaging in extensive information search (Nelson 1970). In low-involvement situations, the cognition, or learning stage will be secondary to the experience, or action stage, whereas the opposite will be true in high-involvement situations where more information is needed (Bruce et al. 2012). Thus, consumers in the CPG setting lack the incentive to be attentive to advertising and actively seek information about the product, which hinders the ease of communicating with the customer and fostering emotional connections. To overcome these challenges, a firm's communications must provide value to the customer, with perceived benefits outweighing the costs (Wernerfelt 1996).

Internet advertising has the capacity to provide a high level of value to the customer in that it involves customized, interactive experiences. Its interactive platform additionally supplies a forum for dialogue and enables a firm to establish a brand community to further deepen a customer's relationship with a brand. This provides value to the customer by allowing the customer to affiliate with the brand, which will result in increased customer loyalty (Blake 2006). Beyond affiliating with the brand, consumers may even begin to identify with the company to "help them satisfy one or more key self-definitional needs," further contributing to customer loyalty (Bhattacharya and Sen 2003, p. 77). To this end, the internet also offers opportunities for the customer to become embedded in a social network, which fosters customer loyalty (e.g., Oliver 1999). In the CPG industry, firms may use the internet as a vehicle to create this social network "village" by providing useful product-related information, helpful resources, and opportunities for interaction. For example, Kraft.com provides nutritional information and a forum for recipe exchanges on its web site.

Showing the consumer that the firm appreciates and understands their needs and lifestyle helps to advance consumer involvement, which will positively affect customer loyalty (Bissell 1996).

In contrast, television advertising lacks the interactive component and customizability that are central to internet advertising. Television advertising tends to be repetitive, which limits the depth of information that is communicated to the customer (Wernerfelt 1996). According to Krugman (1965), the impact of television advertising takes the form of learning without involvement, as the consumer is only passively engaged. Thus, only through repetition may consumers experience a gradual shift in perceptions, which may eventually be followed by attitude change (Krugman 1965). In sum, the effects of television advertising are limited in terms of facilitating customer involvement, which is needed to enhance relationships with customers.

Therefore, I propose the following:

H4a: Internet advertising has a positive effect on loyalty capability.

H4b: Television advertising has a negative effect on loyalty capability.

The impact of a firm's portfolio strategy on loyalty capability

With respect to a firm's degree of specialization, this study explores the impact of the firm's portfolio of brands, including firm scale and the scope of a firm's product-market coverage, on its loyalty capability. The scope of a firm's product-market coverage pertains to the number of segments across which the firm markets its products (Morgan and Rego 2009). Operating across a greater number of segments may enable the firm to better satisfy heterogeneous customer needs (e.g., Kekre and Srinivasan 1990; Lancaster 1990). However, given the breadth of products available to consumers in the CPG industry, a consumer need

not rely on one firm to fulfill a diverse set of needs. Rather, it may be the case that firms adopting a focus strategy and specializing in a certain area may better satisfy consumers by offering a more customized selection of product offerings to consumers. In this scenario, a consumer may grow to view the firm as a category expert, which may help to elevate the firm above competitors in the consumer's mind. Further, when a firm has a narrow breadth of focus, the entire firm may be dedicated to excellence in that area, which may increase tacit knowledge in that specific domain, and help the firm to meet customer needs in a way that firms with a broad scope cannot.

With respect to firm scale, it will become more difficult for a firm in the CPG sector to target a niche market segment as the firm gets larger, since the firm will naturally be serving an increasing number of consumers. According to Wright (1987), since a large firm cannot justify only catering to a small segment of consumers, the focus or specialist strategy is not a viable strategy for large firms. Thus, a firm may no longer remain solely dedicated to a small segment of buyers as the firm grows in size, and therefore its ability to uniquely serve a distinct market segment may decline as firm scale increases.

Therefore, I propose the following:

H5: Firm scope has a negative effect on loyalty capability.

H6: Firm scale has a negative effect on loyalty capability.

The moderating effect of degree of concentration on the relationship between innovative new product mix and loyalty capability

Highly concentrated markets may provide an environment that is conducive to introducing successful revolutionary innovations, as it offers a number of resource-related advantages. Firms in highly concentrated markets tend to have higher profit margins

(Ramaswamy et al. 1994; Scherer and Ross 1990), and thus have greater financial slack with which to invest in research and development. Possessing a higher absolute level of slack resources also permits product failures (March 1981), allowing the firm to take risks.

By diversifying their resources into new areas, a firm may build upon their strengths and increase their level of experience and tacit knowledge, which may help to strengthen their competitive advantage. Additionally, revolutionary innovations may help the firm to diversify and grow in new ways that will enable them to overcome organizational inertia and adapt to changes in consumer needs and preferences. Thus, firms in highly concentrated markets may prove to be at an advantage when it comes to creating revolutionary innovations that provide unique benefits to consumers, and the process of developing revolutionary innovations may further contribute to the firm's loyalty capability.

However, market concentration may have a negative moderating effect on the relationship between incremental innovations and loyalty capability. While the benefits of incremental innovations may be more easily communicated to customers than the benefits of revolutionary innovations, the extent to which incremental benefits increase customer engagement may be more limited for firms in highly concentrated markets. Since highly concentrated markets are dominated by a few large firms, consumer engagement with firms in highly concentrated markets is likely to be greater than consumer engagement with firms in fragmented markets. Thus, a firm in a highly concentrated market will experience minimal returns with respect to engagement with customers through incremental innovations. For these firms, incremental innovations also present less of an opportunity for significant diversification and for building knowledge and experience. Therefore, firms in highly concentrated markets will have relatively little to gain from incremental innovations related

to extrinsic product features. Likewise, I anticipate that market concentration will have a negative moderating effect on usage innovations, which also represent less of an opportunity for diversification and building knowledge. Thus, I propose the following:

H7a: Market concentration has a positive moderating effect on the relationship between revolutionary innovations and loyalty capability.

H7b: Market concentration has a negative moderating effect on the relationship between incremental innovations and loyalty capability.

H7c: Market concentration has a negative moderating effect on the relationship between usage innovations and loyalty capability.

The moderating effect of degree of concentration on the relationship between communication mix and loyalty capability

Nontraditional media, or internet advertising, may be used as a vehicle to help personalize communications with the customer, and thus overcome obstacles and barriers in markets characterized by a high degree of competition. Because firms in fragmented industries have such a critical need for engagement and personal interaction with consumers in order to stand apart from competition, they may enjoy significant returns to internet advertising, as internet advertising encourages affiliation with the brand and customer involvement, and therefore provides an opportunity for relationship-building. Thus, firms in markets with a low degree of market concentration may significantly benefit from diversifying their communications strategy by allocating additional resources toward internet advertising in order to develop a dynamic relationship with the consumer. However, firms in markets with a low degree of concentration may have little to gain in terms of relationship-building from traditional media, which does not significantly enhance customer involvement.

In highly concentrated markets in which firms tend to have stronger ties to the customer, the extent to which internet advertising may help a firm to build strong relationships with customers will be more limited. However, the negative main effect of television advertising on loyalty capability may be positively moderated by market concentration, as television advertising may reinforce relationships with customers that are already relatively strong. Thus, it is expected that market concentration will positively moderate the relationship between traditional media and loyalty capability.

In sum, I propose the following:

H8a: Degree of concentration has a negative moderating effect on the relationship between internet advertising and loyalty capability.

H8b: Degree of concentration has a positive moderating effect on the relationship between television advertising and loyalty capability.

The moderating effect of degree of concentration on the relationship between portfolio strategy and loyalty capability

As previously mentioned, it is more difficult for large firms and firms that are operating across many segments to uniquely serve a distinct market segment, as they are unable to fully embrace a focus or specialist strategy and target a niche market. However, the relationship-building benefits associated with a high degree of market concentration may help to offset the negative effects of firm scale and firm scope on loyalty capability. Thus, to the extent that market concentration helps a firm to build strong relationships with customers, it will positively moderate the negative relationship between firm scope and scale and the firm's ability to convert its resources into customer loyalty. Therefore, I propose the following:

H9: Degree of concentration has a positive moderating effect on the relationship between firm scale and loyalty capability and the relationship between firm scope and loyalty capability.

The moderating effect of degree of concentration on the relationship between interpurchase cycle and loyalty capability

The dominance of a few large firms and the general lack of fragmentation associated with highly concentrated markets may lead to a reduction in the volume of comparable product alternatives available in that market. This simplification of options may positively affect the salience and accessibility of a product in the consumer's mind. Additionally, the positive association between market concentration and the strength of a firm's ties with customers will also contribute to the salience and accessibility of a product in the consumer's mind. If market concentration indeed contributes to the accessibility of a product in the consumer's mind, then a high level of market concentration may help to overcome the hypothesized negative effects of interpurchase cycle time on loyalty capability. Thus, I propose the following:

H10: Degree of concentration has a positive moderating effect on the relationship between interpurchase cycle and loyalty capability.

3.3 Methodology

After briefly describing the data sample, I then proceed to outline each step of the analysis, as depicted in Figure 3.1. The input and output factors used at each stage of the analysis are defined and subsequently operationalized. I then provide a description of the model used at each respective step.

3.3.1 Sample

These hypotheses are tested using annual data on U.S.-based firms operating in the CPG sector from 1996-2010. Given that this analysis uses the ACSI's measure of customer loyalty, it focuses on the companies tracked by the ACSI, which are included in the index on the basis of total sales in the U.S. The analysis focuses on CPG manufacturers only, as they should experience similar frontiers. The firms in the data set span the categories of food manufacturing, soft drinks, pet food⁵, and personal care and cleaning. Appendix D provides a listing of the 26 firms used in the study.

3.3.2 Step 1: Measuring Loyalty Capabilities

Operationalization of customer loyalty

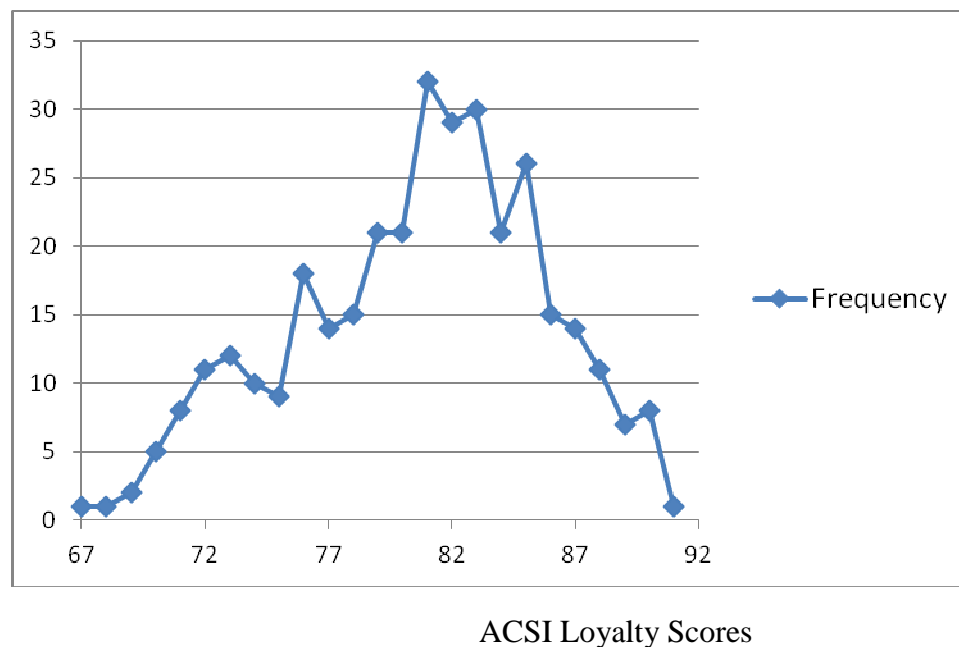
The output measure of *customer loyalty* comes from the ACSI, as customer loyalty is an outcome of customer satisfaction. The ACSI operationalizes the loyalty construct using indicators of the consumer's intention to repurchase coupled with price tolerance, or the maximum increase in price the consumer is willing to pay before switching (Anderson 1996). According to the *American Customer Satisfaction Index Methodology Report* (2008), the questions in the ACSI survey that are used to capture customer loyalty measure the following: 1) repurchase likelihood rating, 2) price tolerance (increase) given repurchase, and 3) price tolerance (decrease) to induce repurchase. Intention to repurchase, or the repurchase likelihood rating, reflects the consumer's attitude toward the brand relative to its competitors, as well as the consumer's stated intentions with respect to repeat patronage. Price tolerance measures the conviction of the consumer's intention, which serves to indicate the strength of

⁵ The ACSI customer loyalty score for pet food is collected as a separate category. For the firms that operate in both the pet food and food manufacturing sectors, the variables are isolated to reflect pet food operations only. Likewise, expenditures related to pet food are omitted from the food manufacturing variables.

their attitude towards the brand relative to competing brands. Loyalty scores range from 0 to 100, whereby a score of 100 reflects the upper limit of customer loyalty.

The mean loyalty score of the CPG firms throughout the time span of 1996–2010 is 81. The lowest loyalty score of all firms across years is a 67 for General Mills and the highest score is a 91 for Heinz. Figure 3.2 presents a frequency chart of the loyalty scores aggregated across companies and over time. In addition to the variation in loyalty scores across firms, there is also a great deal of within-firm variation over time. For example, Kraft's loyalty scores range from a low of 69 to a high of 87.

Figure 3.2
Distribution of ACSI Loyalty Scores across Companies and over Time



Inputs to customer loyalty

Using the resource-based-view, conclusions may be drawn regarding the resources that contribute to a firm's customer loyalty. Previous research indicates that some resources available to the firm include "customer awareness and liking" of the firm's products (Dutta et al. 1999, p. 552). Based on the major categories of firm resources in Grant's classification system, customer awareness and liking represent reputation resources (e.g. Grant 1991), which may be used to enhance customer loyalty. According to Dutta et al. (1999), these resources may be built over time through advertising effort and expenditure on marketing activities including trade promotion efforts. Indeed, advertising effort and promotion effort are common ways that a firm in the CPG sector may present a product to consumers to build customer awareness and liking, and ultimately customer loyalty.

Another resource that may contribute to customer loyalty is a firm's innovative know-how, which can be classified as a technological resource (e.g. Grant 1991). Innovative know-how is a valuable resource in that it helps a firm convince its customers that the firm can maintain its technological leadership over time, which serves to build consumer confidence in a firm (Dutta et al. 1999). A firm's degree of innovative know-how may be apparent to consumers by the firm's stream of new product introductions.

In sum, some of the primary resources that firms may apply toward investment in customer loyalty include the marketing mix elements of advertising effort, promotion effort, and new product development, as shown in Step 1 of Figure 3.1. Below, I briefly elaborate on the motivation for selecting the marketing mix elements of advertising effort, promotion effort, and new product development as the inputs to customer loyalty, and I operationalize each of the respective elements.

1. *Advertising Effort*

Motivation. The resource of advertising serves as a form of brand experience for the consumer that can add value to the brand over time, as brand experience is found to have a positive effect on loyalty (Brakus et al. 2009). Advertising also reinforces consumers' brand-related beliefs and attitudes towards the brand (Cobb-Walgren et al. 1995; Shimp 1997). Srinivasan et al. (2010) argue that advertising and promotions affect what customers think and feel about a brand, which will influence the brand's share in customers' hearts and minds. Further, advertising makes brand associations more accessible in the consumer's mind (Berger and Mitchell 1989; Boulding et al. 1994), which in turn strengthens the relationship between consumer attitudes and behavior (Alba et al. 1991; Berger and Mitchell 1989; Biehal and Chakravarti 1983; Fazio and Zanna 1981; Fazio et al. 1989). Advertising may also increase loyalty by diminishing a consumer's price sensitivity. In a summary of marketing studies addressing advertising's effect on price sensitivity, Kaul and Wittink (1995) conclude that nonprice advertising, which largely refers to manufacturers' national advertising, does indeed decrease price sensitivity. This reduction in price sensitivity increases a consumer's price tolerance, which has a positive effect on brand loyalty (Comanor and Wilson 1979).

Operationalization. To operationalize *advertising effort*, a relative measure is constructed that adjusts the firm's advertising spending to reflect sales achieved in the previous year. As such, advertising spending is normalized by firm size, making upfront comparisons between firms (of different sizes) feasible. Advertising spending and sales figures are restricted to U.S. markets since this analysis focuses on the effects of U.S. advertising on American customer satisfaction. U.S. advertising data for each firm were

obtained from TNS Media, and U.S. sales figures were obtained from the COMPUSTAT database.

2. Sales Promotion Effort

Motivation. In contrast to national advertising, promotions primarily communicate pricing information (Boulding et al. 1994). According to Shankar (2008), CPG firms are increasingly allocating more of their marketing resources toward sales promotion than advertising. Promotions account for approximately two-thirds to three-fourths of overall marketing expenditure among CPG manufacturers (Ailawadi et al. 2009). Promotions can take the form of either trade promotions or consumer promotions. Trade promotions refer to the push strategy, in which the manufacturer offers incentives to channel intermediaries in order to encourage them to actively sell to the end consumer (Ailawadi et al. 2009). Trade allowances may directly translate to consumer promotions in that they may influence retailers to set price promotions.

Based on self-perception theory, consumers seek explanations for their own behavior (Neslin and Shoemaker 1989). Thus, if the consumer concludes that their purchase was prompted by a promotion rather than their intrinsic brand preference, then the consumer's underlying attitude toward the brand will be weakened. In the long-term, this weakening of brand attitudes will undermine loyalty (Neslin 2002). Additionally, the frequent use of price promotions is found to be harmful to brands (Yoo et al. 2000). In some cases, price promotions convey negative associations, which decrease consumers' perceptions of product quality (Boulding et al. 1994). Price advertising also increases price sensitivity, as the attribute of price plays a greater role in the consumer's decision-making process (Jedidi et al.

1999; Kaul and Wittink 1995; Mela et al. 1997). The increase in price sensitivity may be associated with a decline in price tolerance, which will have a negative effect on loyalty.

Operationalization. As a proxy for the firm's sales promotion effort, a variable of partial selling, general, and administrative expenses (PSG&A) is created. The PSG&A measure accounts for the marketing expenses that remain after subtracting advertising from SG&A, which includes spending on promotions, the sales force, and other administrative expenses. Within the CPG industry, the role of the sales force has little relevance, as the bulk of the allocation of marketing resources is towards advertising and sales promotion (Shankar 2008). As demonstrated by Banker et al. (2011), sales promotion accounts for a large portion of SG&A. In their study, they analyzed a broad sample of firms that included at least 20 firms from each two-digit SIC code in COMPUSTAT, over a 34-year time span. They found that within SG&A across firms, 82% was spent on overhead and sales promotion. Consistent with this figure, Ailawadi et al. (2009) claim that promotions account for the majority of marketing expenses, as firms spend at least two-thirds of their marketing expenditures on promotions. Among CPGs, an average of 56% of a firm's overall marketing budget was spent on trade promotions alone in 2009, with consumer pass-through accounting for a large portion of expenditures (Trade Promotion Report 2010).

Given the large role of sales promotion in PSG&A, it follows that a firm's PSG&A will vary predictably with its sales promotion expenditure. Thus, PSG&A effort is subsequently used as a proxy for a firm's sales promotion effort. Following the example of Kim and McAlister (2011), the firm's expenditure on advertising is subtracted from the annual SG&A for each firm (COMPUSTAT) in order to avoid double-counting. Consistent

with the method used to calculate advertising effort, PSG&A is then divided by the previous year's sales in order to normalize by firm size.

3. New Product Introductions

Motivation. With respect to new product introductions, the direction of the effect on customer loyalty is contingent on the uniqueness and success of the product. New product introductions may offer distinctive benefits to the customer that are unmatched by competitors, and may thus become an object of customer loyalty. However, the failure rate of new products in the CPG sector is extremely high, easily exceeding 70% within the first two years (Ernst&Young/ACNielsen 2000). Product failure can lead to a loss in consumer confidence in the firm, which is detrimental to customer loyalty. An extreme case was the Coca Cola debacle in 1985 when it introduced New Coke (e.g., Simon and Sullivan 1993).

New product options also present the risk of disrupting current buying habits and reopening the purchase decision (Mitchell and Papavassiliou 1999). This may encourage current customers to seek variety and try new brands, which may lead to a permanent switch (Quelch and Kenny 1994). Even if the additional options do not affect the consumer's final choice, they can still foster uncertainty and dissonance surrounding the consumer's product selection (Mitchell and Papavassiliou 1999), which may decrease a consumer's preference strength of the chosen option (Chernev 2003; Iyengar and Lepper 2000). A vast number of new options may also lead to choice overload (Scheibehenne et al. 2010), which arises given that a consumer's ability to assimilate and process information is subject to finite limits (Miller 1944). When overload occurs, decision making becomes less accurate and less effective (Jacoby 1977). The consumer may then make suboptimal decisions, which will result in lower satisfaction (Jacoby 1977; Scheibehenne et al. 2010; Mitchell and

Papavassiliou 1999). This negative effect on satisfaction may be particularly pronounced, as large assortments heighten customer expectations (Diehl and Poynor 2007), increasing the likelihood of negative disconfirmation of expectations, or disappointment (Schwartz 2000).

Operationalization. The number of annual new product introductions for each firm was accessed from Product Launch Analytics, and it is a count of the number of unique product names introduced each year. A product is considered to be new if it fits any of the following criteria: an entirely new product, new flavor, new packaging, a reformulation, or a renamed product. Each introduction of a new product variant is associated with a unique product name. Product names may correspond to more than one SKU if there are multiple sizes offered. However, the number of sizes is not included in the count. To illustrate the extent of new product variants, a few examples of new Colgate products include Colgate Luminous Toothpaste, Colgate Max Fresh Toothpaste with Mini Breath Strips in Cool Mint, and Colgate Simply White Whitening Toothpaste in Sparkling Mint. The average number of annual new product introductions per firm across all observations is 44.3.

Step 1 Model

In a first step, random parameters stochastic frontier estimation is used to estimate the relationship between the marketing inputs of advertising effort, promotion effort, and new product introductions and customer loyalty. Stochastic frontier estimation is applied so that each firm's measures of loyalty capability may be captured. By using a random parameters approach, this analysis accounts for heterogeneity across firms and allows for a time-varying measurement of loyalty capability to be obtained for each individual firm.

SFE empirically estimates the efficient frontier and hence each firm's distance between actual performance and the maximum achievable performance. This discrepancy

constitutes the firm's degree of inefficiency. The smaller the inefficiency level, the greater the firm's relative ability to transform their resources into high customer loyalty scores (c.f., Dutta et al. 2005).

In Essay 1, it was demonstrated that the relationship between advertising effort and customer satisfaction is curvilinear. As customer loyalty is a consequence of customer satisfaction, the model in this study allows for a curvilinear relationship between advertising and customer loyalty. Quadratic effects are also included for promotion effort and new product introductions to allow for potential curvilinear relationships between promotion effort and customer loyalty and new product introductions and customer loyalty.

The stochastic function relating advertising effort, promotion effort, and new product introductions to customer loyalty may be written as

$$(1) \quad \log \text{loyalty}_{i,t} = \alpha_{0i} + \alpha_{1i} \log \text{ad_effort}_{i,t} + \alpha_{2i} (\log \text{ad_effort}_{i,t})^2 + \\ \alpha_{3i} \log \text{PSGA_effort}_{i,t} + \alpha_{4i} (\log \text{PSGA_effort}_{i,t})^2 + \alpha_{5i} \log \text{nps}_{i,t-1} + \\ \alpha_{6i} (\log \text{nps}_{i,t-1})^2 + v_{i,t} - u_{i,t}$$

where i and t are indices referring to firm i and year t , respectively, whereby time is given in years. The new product introduction variable (nps) is lagged to capture the effect on loyalty of new products that were rolled out in the previous year. The time of year when the product was introduced or when the consumer would have subsequently learned about the product is unknown. Thus, the variable is lagged based on the assumption that the new product will have its greatest effect on the consumer throughout the first full year following its introduction.

In the basic stochastic frontier model, the idiosyncratic term ($v_{i,t}$) is symmetric and normally distributed. The one-sided (non-negative) inefficiency component ($u_{i,t}$) is distributed half-normal with zero mean and constant variance σ_u^2 (Dutta et al. 2004).

$$(2) \quad v_{i,t} \sim N[0, \sigma_v^2],$$

$$u_{i,t} = |U_{i,t}| \text{ where } U_{i,t} \sim N[0, \sigma_u^2].$$

In this model, all unmeasured heterogeneity is absorbed in $u_{i,t}$. An additional assumption of this model is that inefficiency is uncorrelated with included variables (Greene 2005).

The estimator of $u_{i,t}$ is

$$(3) \quad E[u_{i,t} | (v_{i,t} - u_{i,t})] = \frac{\sigma\lambda}{1 + \lambda^2} \left[\frac{\phi(a_{it})}{1 - \Phi(a_{it})} - a_{it} \right]$$

where $\sigma = [\sigma_v^2 + \sigma_u^2]^{1/2}$, $\lambda = \sigma_u / \sigma_v$, $a_{it} = \pm(v_{it} - u_{it})\lambda / \sigma$, and $\phi(a_{it})$ and $\Phi(a_{it})$ denote the standard normal density and CDF evaluated at a_{it} , respectively (Greene 2005).

Finally, each firm's annual efficiency, or loyalty capability, is obtained by using the following function (Kumbhakar and Lovell 2000):

$$(4) \quad \varphi_{it} = \text{EXP}(-U_{i,t})$$

3.3.3 Step 2: Relating Drivers to Loyalty Capability

Operationalization of drivers

To provide information on each firm's allocation of advertising effort, each firm's percent of advertising expenditure dedicated to television and internet advertising is separately identified. The measure of print advertising is purposely omitted, as including all three media types results in errors related to collinearity of the data.

All innovative product introductions represent new products, but most new products are not truly innovative. The only criterion for a product to be considered "new" is that it

simply offers a new variant of a product, such as a new flavor, variety, or even a new name. Therefore, only a small fraction of new product introductions are classified as innovative.

Innovations are measured by a count of the number of firm innovations introduced each year. Data on product innovations was gathered from Product Launch Analytics. Each innovative product is categorized as one or more of following innovation types: formulation, technology, packaging, merchandising, new markets, or positioning. Among all of the innovative CPG products assessed by Product Launch Analytics, formulation is the most frequently used innovation rating, as it often refers to first-ever flavors. Technology innovation describes when a new manufacturing process is used that results in a product with breakthrough technology. Innovative packaging offers a new benefit through packaging design, and merchandising innovation involves marketing through an outlet that is unique to the category's standard marketing technique. Instances of new market innovation, which requires opening up a completely new market, are extremely rare. Lastly, positioning innovation involves targeting a new group of users or positioning for a new usage. Following the example of Gielens (2012), I classify the innovations related to formulation and technology as intrinsic innovations, packaging and merchandising as extrinsic innovations, and new markets and positioning as usage innovations. The average number of annual innovations across all observations is 2.2, which represents a very small fraction of the annual new product introductions, of which the average is 44.3.

Interpurchase cycle data, which measures purchase frequency for the product category, was obtained for each firm using the ACSI survey data collection protocol, following the example of Morgan and Rego (2009). Personal care and cleaning products have an interpurchase cycle of three months, while all other categories in the data set (food,

beverages, and pet food) have an interpurchase cycle of one month. A dummy variable was created that equals 0 when the interpurchase cycle is one month, and equals one when the interpurchase cycle is three months.

The Hirshman-Herfindahl index (HHI) is used as a measure of the degree of market concentration, which quantifies the extent to which the market is dominated by a few large firms. To determine the appropriate market for each firm, the firms were categorized based on the first four digits of their respective NAICS codes, provided by COMPUSTAT. There are 10 unique 4-digit codes represented in the data set. The HHI index values were then obtained for each of these 10 industries from the U.S. Census (<http://www.census.gov>). The U.S. Census reports the HHI⁶ for each market every five years, based on the market share of the top 50 firms in each industry.

To measure the scope of the firm, I use a count of the number of segments in which it is marketed. The number of segments is based on the North American Industry Classification System (NAICS) market segments, and is a count of the number of NAICS operating codes in which each firm markets its brands. This data was obtained from the Hoover's database. A few examples of market segments represented in the sample include breakfast cereal manufacturing, bread and bakery product manufacturing, and coffee and tea manufacturing. Kraft has the greatest number of segments, with 36, while Procter & Gamble dog food is only marketed in one segment. The average number of segments across firms is 11. To measure firm scale, or firm size, an annual count of the number of employees is used, as number of employees is a commonly used proxy (Shalit and Sankar 1977). The average

⁶ The HHI is calculated for the U.S. Census by summing the squares of the individual company percentages of market share for the largest 50 companies.

number of employees across all observations in the data set is approximately 19,900. This information was obtained from COMPUSTAT.

Table 3.1 describes the operationalization of each measure.

Table 3.1**Data Operationalizations**

Annual data from 1996-2010	Description and Source of Data
Annual customer loyalty scores	Aggregated at the firm level (ACSI)
Advertising effort	Advertising expenditure divided by the previous year's sales (TNS Media and COMPUSTAT)
Promotion effort	PSG&A = SG&A – advertising expenditure; PSG&A is then divided by the previous year's sales (TNS Media and COMPUSTAT)
New product introductions	Number of unique product names listed in Product Launch Analytics; Corresponds to SKUs, less the SKUs for different product sizes (Product Launch Analytics)
Communication mix (traditional versus nontraditional)	% of total annual advertising expenditures spent on TV and internet advertising, respectively (TNS Media)
Innovative new product mix (Revolutionary, Incremental, and Usage)	Innovations are coded as Packaging, Merchandising, Technology, Formulation, New Market, or New Positioning in Product Launch Analytics. The count of Packaging and Merchandising are combined to form Incremental Innovations (Extrinsic), Technology and Formulation are Revolutionary Innovations (Intrinsic), and New Market and New Positioning are Usage Innovations (Product Launch Analytics)
Product interpurchase cycle	Based on the ACSI survey data collection protocol (ACSI)
Market concentration	Measured by the Hirshman-Herfindahl Index (HHI) for each product category, as indicated by each firm's four-digit NAICS code (COMPUSTAT and U.S. Census)
Firm scope	Number of segments per firm based on the number of unique NAICS codes that a firm spans (Hoover's)
Firm scale	Number of employees per firm (COMPUSTAT)
Firm sales	Annual total revenue per firm (COMPUSTAT)

Step 2 Model

In a second step, a tobit model is used to regress the measures of loyalty capability on the percentage of advertising spent on internet advertising, the percentage of advertising spent on television advertising, revolutionary, incremental, and usage innovations, the degree of market concentration, the product interpurchase cycle, the firm's scale and scope, and potential moderating effects of market concentration. The innovation variables are lagged for the same reasons that the new product introductions variable is lagged in the first step. Since the loyalty capability value is censored at 1, a tobit model is used.

Tobit model:

$$(5) \quad \log \text{loyalty_capability}_{i,t} = \beta_0 + \beta_1 \log \text{revolutionary}_{i,t-1} + \beta_2 \log \text{incremental}_{i,t-1} + \beta_3 \log \text{usage}_{i,t-1} + \beta_4 \log \% \text{internet}_{i,t} + \beta_5 \log \% \text{television}_{i,t} + \beta_6 \text{interpurchase_cycle}_i + \beta_7 \log \text{market_concentration}_{i,t} + \beta_8 \log \text{firm_scope}_{i,t} + \beta_9 \log \text{firm_scale}_{i,t} + \beta_{10} (\log \text{mkt_conc.}_{i,t} \times \log \text{revolutionary}_{i,t-1}) + \beta_{11} (\log \text{mkt_conc.}_{i,t} \times \log \text{incremental}_{i,t-1}) + \beta_{12} (\log \text{mkt_conc.}_{i,t} \times \log \text{usage}_{i,t-1}) + \beta_{13} (\log \text{mkt_conc.}_{i,t} \times \log \% \text{internet}_{i,t}) + \beta_{14} (\log \text{mkt_conc.}_{i,t} \times \log \% \text{television}_{i,t}) + \beta_{15} (\log \text{mkt_conc.}_{i,t} \times \log \text{firm_scope}_{i,t}) + \beta_{16} (\log \text{mkt_conc.}_{i,t} \times \log \text{firm_scale}_{i,t}) + \beta_{17} (\log \text{mkt_conc.}_{i,t} \times \log \text{interpurchase_cycle}_i) + e_{it}$$

where revolutionary, incremental, and usage, respectively, refer to the type of product innovation.

3.3.4 Step 3: Relating Loyalty Capability to Firm Sales

Step 3 Model

In a third and final step, I evaluate whether loyalty capability is indeed a significant

determinant of firm performance. Given that some of the loyalty observations correspond to a division of a firm (i.e. Nestle Pet), as opposed to the firm in its entirety, the corresponding sales figures are used as the outcome measure. A measure of customer loyalty is included to isolate the effects of loyalty capability on sales from the effects of absolute customer loyalty on sales. The error term associated with the inefficiency component from which the loyalty capability measures are obtained is subtracted from loyalty, resulting in a net loyalty term, so that the error term is not redundant across measures. A large inefficiency component will result in a significantly lower net loyalty score, while a small inefficiency component for the same customer loyalty score will result in a net loyalty score that is only marginally lower. I also control for longitudinal fluctuations in the market by using dummy variables for time (year). The relationship between lagged loyalty capability and sales is then specified as follows:

$$\begin{aligned}
 (6) \quad \text{sales}_{i,t} = & \pi_0 + \pi_1 \text{loyalty_capability}_{i,t-1} + \pi_2 \text{net_loyalty}_{i,t-1} + \\
 & \pi_3 (\text{net_loyalty}_{i,t-1} \times \text{loyalty_capability}_{i,t-1}) + \pi_4 \% \text{internet}_{i,t} + \pi_5 \% \text{television}_{i,t} + \\
 & \pi_6 \text{revolutionary}_{i,t-1} + \pi_7 \text{incremental}_{i,t-1} + \pi_8 \text{usage}_{i,t-1} + \pi_9 \text{interpurchase_cycle}_i + \\
 & \pi_{10} \text{market_concentration}_{i,t} + \pi_{11} \text{firm_scale}_{i,t} + \pi_{12} \text{firm_scope}_{i,t} + \\
 & \sum_{k=12}^{27} \pi_k \times \text{year}_{k-12} + u_i + e_{it}
 \end{aligned}$$

where u_i is a random firm component that allows for the correction of the stratified nature of the data.

73.4 Results

I first discuss the results of Step 1, which reveal the effect of a firm's advertising effort, promotion effort, and new product introductions on customer loyalty. I then examine the loyalty capability measures that are derived for each firm. Next, I report the effects on loyalty capability of the category characteristics of degree of concentration and purchase frequency and the effects of a firm's strategic choices including its diversity of resource allocations. Finally, I analyze the impact of a firm's loyalty capability on performance.

3.4.1 Step 1: Measuring Loyalty Capabilities

The results for the random parameters SFE analysis are reported in Table 3.2.

Table 3.2

Results of Random Parameters Stochastic Frontier Estimation: Impact on Customer Loyalty

Independent Variables	Coefficients	Standard Error	Standard Dev.	Standard Error
Constant (α_0)	4.4125***	.0152		
Advertising Effort (α_1)	-.0149***	.0048	.0004	.0003
Advertising Effort ² (α_2)	-.0023***	.0006	.0010***	.0001
Promotion Effort (α_3)	-.0332***	.0117	.0161***	.0010
Promotion Effort ² (α_4)	-.0038	.0034	.0002	.0004
New Products _{t-1} (α_5)	-.0162***	.0056	.0063***	.0004
New Products _{t-1} ² (α_6)	.0023***	.0008	.0001*	.0001
λ	8.2114***	1.0395		
σ	.0801***	.0023		
σ_u	.0795			
σ_v	.0097			
Log likelihood	515.340			

*** $p < .01$; ** $p < .05$; * $p < .10$, two-sided

N=342

Multicollinearity does not seem to be a problem as the maximum reported variance inflation factor (VIF) is 1.03, which is well below the common cut-off threshold of 10 (e.g. Kleinbaum et al. 1988). The relationship between advertising effort and customer loyalty is curvilinear, as both the linear and the quadratic effects of advertising effort are significant ($\alpha_1 = -.015$; $p < .01$; $\alpha_2 = -.002$; $p < .01$). The curvilinear relationship between advertising effort and customer loyalty is graphically depicted in Figure 3.3a. In contrast, promotion effort has a negative linear effect on customer loyalty ($\alpha_3 = -.033$; $p < .01$). Finally, the results for the new product introductions parameters indicate a curvilinear relationship between new product introductions and customer loyalty ($\alpha_5 = -.016$; $p < .01$; $\alpha_6 = .002$; $p < .01$), which is shown in Figure 3.3b. Figures 3.3a and 3.3b reflect the relevant ranges of advertising effort and new product introductions, respectively, based on the data sample. Over this range, the curvilinear relationship between new product introductions and customer loyalty appears relatively flat. As shown in Table 3.2, the standard deviations of the quadratic term for advertising effort, the linear term for promotion effort, and the linear and quadratic terms for new product introductions are all significant, which indicates that there is a great deal of variability surrounding the parameter results. Table 3.3 provides the individual parameter results for each firm for those parameters that are statistically significant, and Table 3.4 provides some summary statistics related to each firm's derived efficiency measures, or loyalty capabilities.

Figure 3.3a
Impact of Advertising Effort on Customer Loyalty

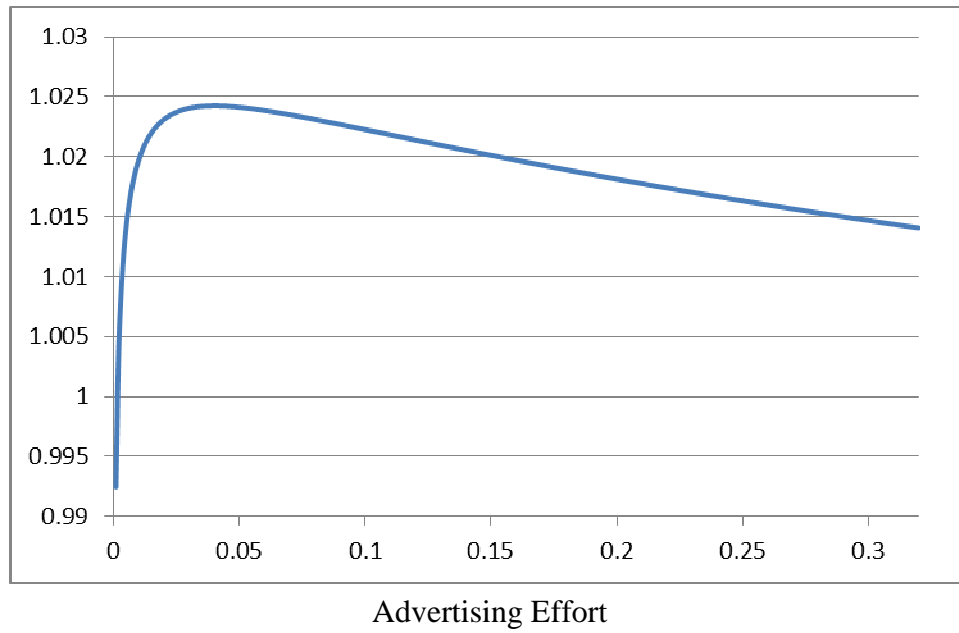


Figure 3.3b
Impact of New Product Introductions on Customer Loyalty

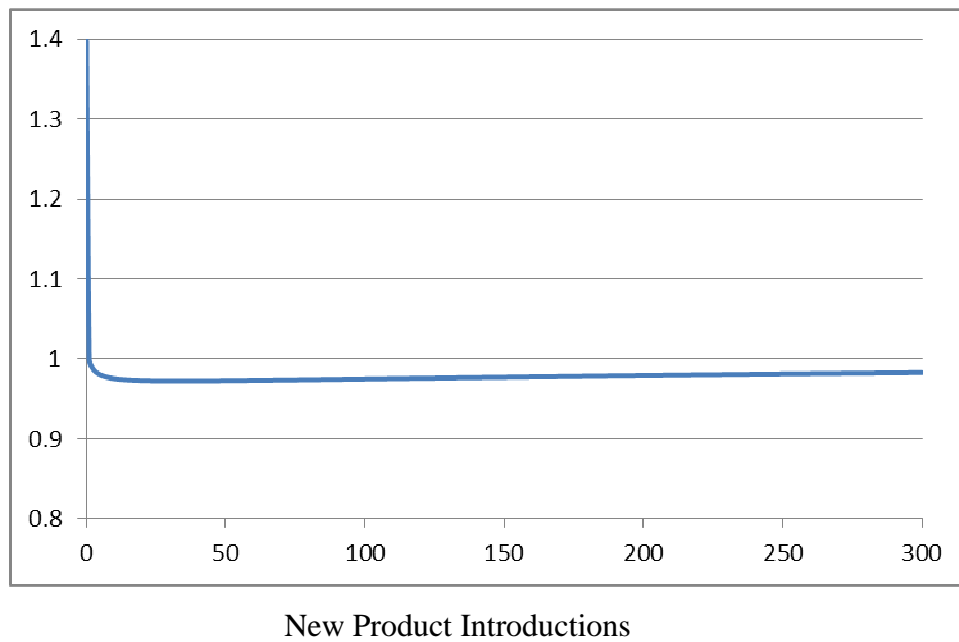


Table 3.3
Random Parameter Results by Firm

	Advertising Effort²	PSG&A Effort	New Products	New Products²
Cadbury Schweppes	-0.0028	-0.0238	-0.0222	0.0023
Campbell Soup Co.	-0.0023	-0.0287	-0.0105	0.0023
Clorox	-0.0017	-0.0503	-0.0119	0.0023
Coca Cola	-0.0017	-0.0386	-0.0132	0.0023
Colgate-Palmolive	-0.0014	-0.0282	-0.0168	0.0023
Colgate Pet (Hill's)	-0.0007	-0.0498	-0.0127	0.0024
ConAgra Foods	-0.0031	-0.0332	-0.0163	0.0024
Dial	-0.0016	-0.0264	-0.0136	0.0023
Dole Food Co.	-0.0020	-0.0221	-0.0189	0.0023
General Mills A ⁷	-0.0028	-0.0192	-0.0219	0.0023
General Mills B	-0.0027	-0.0313	-0.0166	0.0023
Hershey	-0.0026	-0.0417	-0.0131	0.0024
H.J. Heinz	-0.0020	-0.0596	-0.0093	0.0024
Kellogg Co.	-0.0028	-0.0271	-0.0189	0.0023
Kraft Foods	-0.0022	-0.0350	-0.0155	0.0024
Nestlé S.A.	-0.0028	-0.0197	-0.0191	0.0024
Nestlé Pet (Purina)	-0.0018	-0.0512	-0.0081	0.0023
PepsiCo	-0.0025	-0.0392	-0.0174	0.0023
Pillsbury	-0.0026	-0.0284	-0.0176	0.0023
Ralston Purina	-0.0021	-0.0416	-0.0164	0.0023
Procter & Gamble	-0.0030	-0.0262	-0.0123	0.0024
P&G Pet (Iams)	-0.0020	-0.0439	-0.0130	0.0023
RJR Nabisco	-0.0026	-0.0259	-0.0183	0.0023
Quaker Oats	-0.0034	-0.0447	-0.0174	0.0023
Sara Lee Corp.	-0.0023	-0.0426	-0.0168	0.0023
Tyson Foods	-0.0034	-0.0281	-0.0191	0.0024

Table 3.4
Loyalty Capability Statistics by Firm

	Minimum	Maximum	Mean
Cadbury Schweppes	.8305	.9913	.9362
Campbell Soup Co.	.8742	.9907	.9431
Clorox	.8872	.9912	.9525

⁷ General Mills is broken down into two parts to reflect the structural break in the data, which is a result of a 2001 merger with Pillsbury. General Mills A includes data from the years 1996-2001, and General Mills B includes data from 2002-2010.

Coca Cola	.8252	.9946	.9330
Colgate-Palmolive	.8463	.9947	.9319
Colgate Pet (Hill's)	.8746	.9907	.9515
ConAgra Foods, Inc.	.8643	.9925	.9361
Dial	.8567	.9928	.9397
Dole Food Co.	.8400	.9885	.9050
General Mills	.8282	.9904	.9368
Hershey	.8722	.9918	.9459
H.J. Heinz	.8360	.9902	.9497
Kellogg Co.	.8435	.9906	.9377
Kraft Foods	.8252	.9928	.9395
Nestlé S.A.	.8506	.9926	.9438
Nestlé Pet (Purina)	.9381	.9876	.9686
Procter & Gamble	.8361	.9937	.9469
PepsiCo	.8512	.9945	.9361
Pillsbury ^{8a}	.9202	.9202	.9202
P&G Pet (Iams)	.9519	.9911	.9702
Ralston Purina	.8852	.9896	.9233
RJR Nabisco ^{8b}	.9211	.9211	.9211
Quaker Oats	.8413	.9918	.9357
Sara Lee Corp.	.8428	.9910	.9383
Tyson Foods	.8545	.9937	.9417

Coca-Cola and Kraft Foods share the minimum observation of loyalty capability, with an efficiency measure of .8252. Colgate-Palmolive has the maximum efficiency measure, with .9947. The firm with the highest average efficiency is Procter & Gamble's Iams pet food, with an average of .9702. The average efficiency over all of the firm's observations was .9414, and the median was .9553.

3.4.2 Step 2: Drivers of Loyalty Capability

Table 3.5 reports the effects on loyalty capability of the innovative new product mix, communication mix, category characteristics, and portfolio strategy, and the interaction of the degree of market concentration with these predictors. The highest VIF is 1.98, which

^{8a} & ^{8b} There was missing data for Pillsbury and RJR Nabisco, which resulted in only one measure of advertising efficiency per firm. Hence, the minimum, maximum, and mean are the same across each firm.

indicates that there is no harmful collinearity. I also tested for possible endogeneity of the explanatory variables of firm scale, firm scope, percent of advertising spent on internet, percent of advertising spent on television, and innovation type using the Durbin, Hausman and Wu specification test (Hahn and Hausman 2002), which is a two-step procedure. In a first step, I create a “predicted” value by regressing the explanatory variable on a number of instrumental variables. The instrumental variables used for internet advertising, TV advertising, and firm scale included the interpurchase cycle, the market concentration level measured by HHI, and industry dummy variables. For the innovation variables, the lag of each innovation type was also used as additional instrumental variables after verifying the absence of serial correlation using the Durbin-Watson test. When creating the predicted value for firm scope, the industry dummies were dropped, as operating across a large number of segments is likely to be correlated with operating in a large number of industries. The predicted values were then individually added to the original regression equation, and the test statistic for the coefficient of the predicted value was used to test endogeneity. If the test statistic is significant, then the null hypothesis that the variable is exogenous would be rejected. For each variable, the test statistics were not significant, indicating that the explanatory variables are indeed exogenous. The p -values for each test were as follows: Extrinsic innovations: $p=.760$; Intrinsic innovations: $p=.931$; Usage innovations: $p=.434$; Internet advertising: $p=.341$; TV advertising: $p=.335$; Firm scale: $p=.774$; and Firm scope: $p=.373$.

The estimates are unstandardized regression coefficients, but effect sizes are also reported using the Cohen’s d metric. The effect sizes are generally defined as .2 being a small effect, .5 being medium, and .8 being a large effect (Cohen 1988).

Table 3.5

Results of Tobit Model: Impact on Loyalty Capability

Independent Variables	Expected	Coefficients	Standard Error	Effect Size (Cohen's d)
Constant (β_0)		4.6194***	.9101	
Interpurchase cycle (β_6)	-	-2.5983	.2983	n.s.
Market concentration (β_7)	+	-.0251	.1463	n.s.
Revolutionary innovations (β_1)	+	.4004	.5036	n.s.
Incremental innovations (β_2)	+	-.7444	.5683	n.s.
Usage innovations (β_3)	+	.2128	.7042	n.s.
% of expenditure on Internet (β_4)	+	.1863*	.0972	.11
% of expenditure on TV (β_5)	-	-.1731*	.0956	.11
Firm scope (β_8)	-	.4257	.4011	n.s.
Firm scale (β_9)	-	-.0264***	.0077	.20
Mkt. concentration x Revol. (β_{10})	+	-.0787	.0846	n.s.
Mkt. concentration x Incr. (β_{11})	-	.1480	.0971	n.s.
Mkt. concentration x Usage (β_{12})	-	-.0492	.1186	n.s.
Mkt. concentration x Internet (β_{13})	-	-.0352**	.0169	.12
Mkt. concentration x TV (β_{14})	+	.0220	.0157	n.s.
Mkt. concentration x Scope (β_{15})	+	-.0960	.0698	n.s.
Mkt. concentration x Scale (β_{16})	+	.0260***	.0076	.20
Mkt. concentration x Interpur (β_{17})	+	.4323	.2983	n.s.
Log likelihood		-231.203		

*** $p < .01$; ** $p < .05$; * $p < .10$, two-sided

N=312

Hypotheses 4a and 4b are fully supported, as the effect of internet advertising on loyalty capability is positive and significant ($\beta_4 = .1863$; $p < .10$), and the effect of television advertising is negative and significant ($\beta_5 = -.1731$; $p < .10$). As expected (H8a), market concentration has a negative moderating effect on internet advertising ($\beta_{13} = -.0352$; $p < .05$). The effects of innovations on loyalty capability are not significant, nor are significant main effects found for market concentration or interpurchase cycle. With respect to portfolio strategy, H6 is supported as firm scale is found to have a negative effect on loyalty capability ($\beta_9 = -.0264$; $p < .01$). The effect of firm scope on loyalty capability is not significant. H9 is partially supported, as the relationship between firm scale and loyalty capability is positively moderated by market concentration ($\beta_{16} = .0260$; $p < .01$).

3.4.3 Step 3: The Impact on Firm Sales

Table 3.6 reports the effects of loyalty capability and the firm's degree of diversification on sales, while controlling for fluctuations in the market⁹. I first checked for multicollinearity among the predictors by examining the VIFs. Two of the VIFs were slightly above 10, with loyalty capability at 10.8 and loyalty at 11.1, while the remaining VIFs were below 2.2. As a VIF greater than 10 warrants further investigation, the condition index of each predictor was calculated. The condition index is the square root of the ratio of the largest to the smallest eigenvectors of the variance / covariance matrix (Belsley et al. 1981). The condition indices of loyalty capability and loyalty were 2.0 and 3.7 respectively, which are well below the cut-off threshold of 10 and indicate that multicollinearity is not a concern (Brown and Lattin 1994). Once again, the effect sizes of the unstandardized regression coefficients are reported.

⁹ The dummy variables for years are not shown in the table.

The hypothesis that loyalty capability has a positive effect on sales is supported ($\pi_1 = 264,839$; $p < .05$). Significant effects for net customer loyalty and the interaction of loyalty capability with net loyalty are not found. With respect to the effects of advertising allocations, the percent of advertising spent on television has a positive effect on sales ($\pi_5 = 6,890$; $p < .05$), while the percent of advertising spent on internet is not significant. Usage innovations are found to have a negative effect on sales ($\pi_8 = -994$; $p < .10$). Both firm scale and firm scope have a positive effect on firm sales: ($\pi_{11} = 112$; $p < .01$) and ($\pi_{12} = 890$; $p < .01$), respectively. Finally, the dummy variable indicating a longer interpurchase cycle (three months) has a positive and significant effect on sales ($\pi_9 = 112,162$; $p < .01$).

To see whether loyalty capability has a mediating role between the independent variables and the outcome of sales, I first test for the presence of a significant indirect path through loyalty capability using the Sobel test (Zhao et al. 2010). The variables eligible for testing include those of internet advertising, television advertising, and firm scale, as they exhibit significant main effects on loyalty capability. Based on the results of the Sobel test, I find that loyalty capability mediates the effect of firm scale on sales at a $p < .05$ confidence level. Using the decision tree created by Zhao et al. (2010), I conclude that the mediating effect can be classified as competitive mediation, as the indirect path and the direct path are of opposite sign. This indicates that alternative negative mediators may exist in the path to sales.

Table 3.6

Regression Results: Impact on Sales

Independent Variables	Coefficients	Standard Error	Effect Size (Cohen's d)
Constant (π_0)	-140,916.726	95,937.362	
Loyalty Capability (π_1)	264,838.758**	106,401.573	.18
Net Loyalty (π_2)	-792.161	1,706.511	n.s.
Loyalty Capability x Net Loyalty (π_3)	-695.559	1,541.625	n.s.
% of expenditure on Internet (π_4)	-2,748.049	6,875.789	n.s.
% of expenditure on TV (π_5)	6,889.937**	3,179.653	.15
Revolutionary innovations (π_6)	239.083	286.176	n.s.
Incremental innovations (π_7)	550.226	418.412	n.s.
Usage innovations (π_8)	-993.647*	581.331	.11
Interpurchase cycle (π_9)	12,162.103***	4,625.967	.17
Market concentration (π_{10})	5.705	4.278	n.s.
Firm scale (π_{11})	112.117***	11.813	.52
Firm scope (π_{12})	889.762***	188.043	.29
Log likelihood	-2,742.186		

*** $p < .01$; ** $p < .05$; * $p < .10$, two-sided

N=315

3.5 Discussion

In this study, I first examined the impact of advertising effort, sales promotion effort, and new product introductions on customer loyalty in order to measure loyalty capability. From this relationship, I derived measures of efficiency with respect to maximizing customer loyalty using a random parameters stochastic frontier model. Next, I related each firm's loyalty capability to its allocation of marketing resources associated with its innovation and communication mix while controlling for the firm's portfolio strategy and category characteristics, as well as the moderating effects of market concentration. As a final step, I examined the relationship between loyalty capability and firm sales while controlling for net loyalty as well as the aforementioned predictors.

A curvilinear relationship between advertising effort and customer loyalty was found, which means that customer loyalty declines beyond a certain threshold of advertising effort. Therefore, additional advertising beyond the optimal point represents overadvertising with respect to optimizing loyalty, though there is significant variability surrounding the quadratic parameter. The relationship between new product introductions and customer loyalty is also curvilinear, yet the relationship indicates a very gradual increase of customer loyalty over the relevant range of new product introductions (i.e., more than one new product). There is a great deal of variability in the relationship between new products and customer loyalty with respect to both the linear and the quadratic parameters. Finally, the results indicate that customer loyalty decreases with promotion effort. While there is significant variability surrounding the linear promotion parameter, the coefficients for the parameter remain consistently negative across firms, indicating a clear negative relationship between promotions and customer loyalty.

Internet advertising is found to have a positive effect on loyalty capability. Thus, diversifying into nontraditional media such as internet advertising will improve the firm's ability to convert its marketing inputs into customer loyalty. However, as the degree of market concentration increases, the positive effect of internet advertising on loyalty capability declines. This suggests that the extent to which internet advertising may help a firm in a highly concentrated market to build strong relationships with customers will be more limited. As expected, expenditure on television advertising is found to have a negative main effect on loyalty capability, as it does little to engage consumers and strengthen relationships.

With respect to portfolio strategy, the effect of firm scale on loyalty capability is negative, as it becomes increasingly difficult for large firms to uniquely serve a distinct market segment. However, market concentration has a positive moderating effect on this relationship. Since firms in highly concentrated markets are more likely to engage in non-price competition and thus differentiate themselves from competitors, they may be more successful in building strong relationships with customers, thus helping to overcome challenges created by firm scale.

The results pertaining to the impact on sales indicate that loyalty capability does indeed have a positive and significant effect on firm performance. With respect to a firm's communication mix, spending on traditional media positively affects sales, while spending on non-traditional media does not have a significant effect. Based on these results alone, a firm may be motivated to maintain its current expenditure on traditional media without diversifying into non-traditional media. However, a firm may only become more proficient in using the non-traditional media as they gain additional experience with it over time.

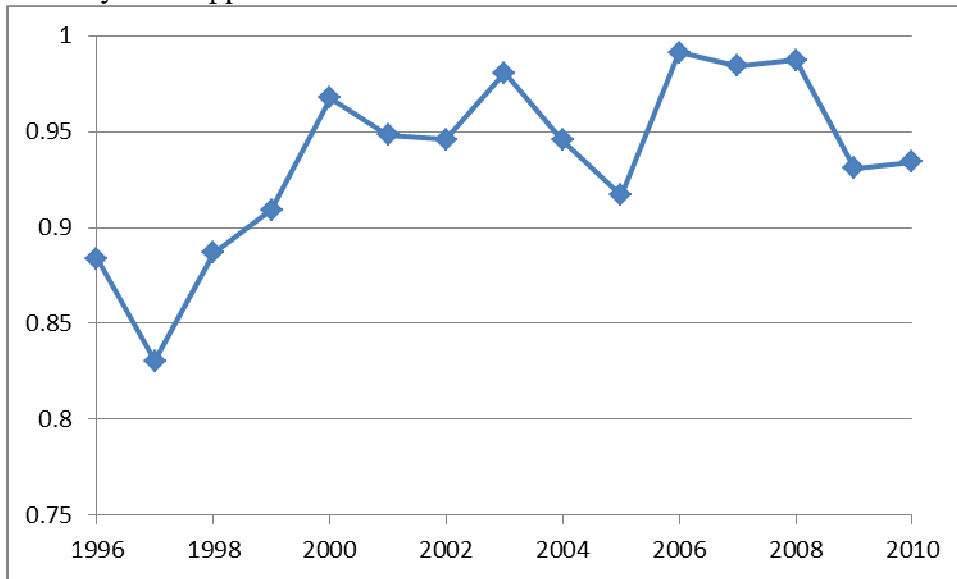
Usage innovations are found to have a negative effect on sales, though the effect size is very small (.11). Though the results concerning interpurchase cycle may seem counterintuitive, as they indicate that sales increase as interpurchase cycle time increases, it may be the case that a greater sales price for the products bought less frequently (in the personal care and cleaning products category) more than accounts for the fact that they are purchased less often.

Finally, with respect to a firm's scale and scope, the results favor a portfolio strategy that consists of a broad portfolio of brands that is supported by a large firm scale.

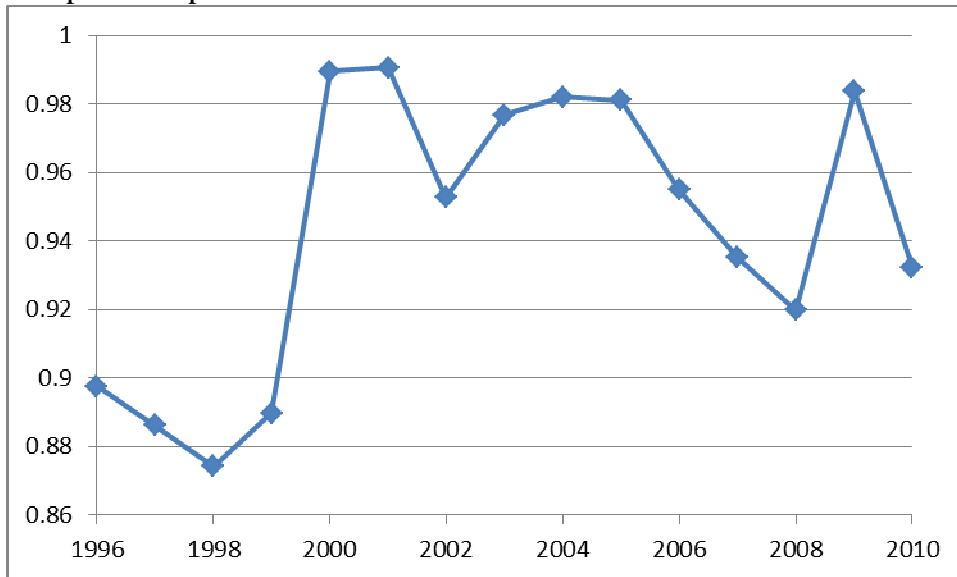
Overall, this research suggests that loyalty capability is indeed an important source of enduring competitive advantage. Based on this analysis, loyalty capability is found to vary across firms and over time due in part to the firms' advertising allocations, mix of innovations, and category characteristics. Figure 3.4 presents a graph for each firm that depicts its evolution of loyalty capability over time. Thus, in order to leverage loyalty capability and increase customer loyalty, product development and marketing must collaborate and coordinate their efforts to benefit from the diversification of firm resources and increase the firm's efficiency in building customer loyalty. Hence, loyalty capability is the outcome of a collective firm effort that relies on tacit knowledge and the strategic allocation of resources.

Figure 3.4
Evolution of Loyalty Capability over Observations

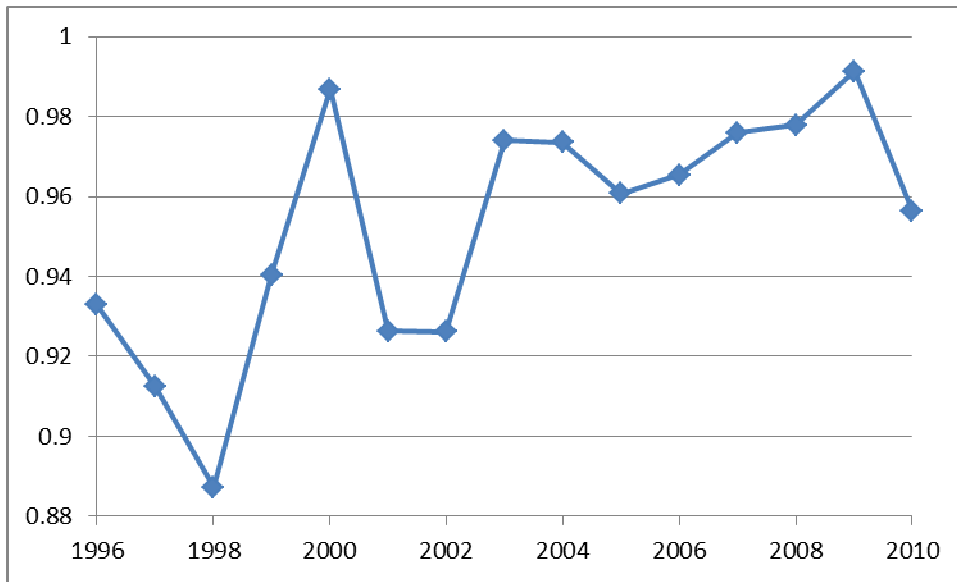
Cadbury Schweppes



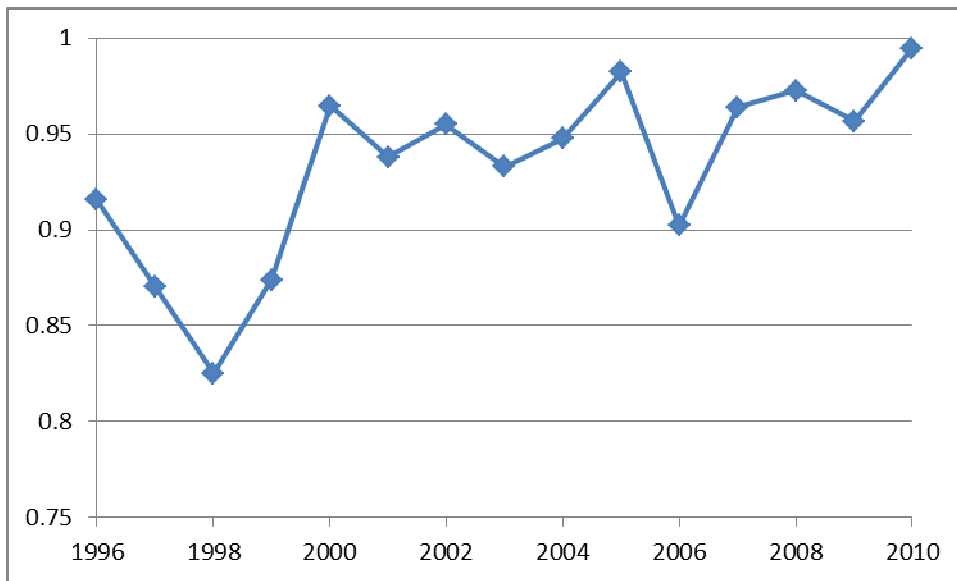
Campbell Soup Co.



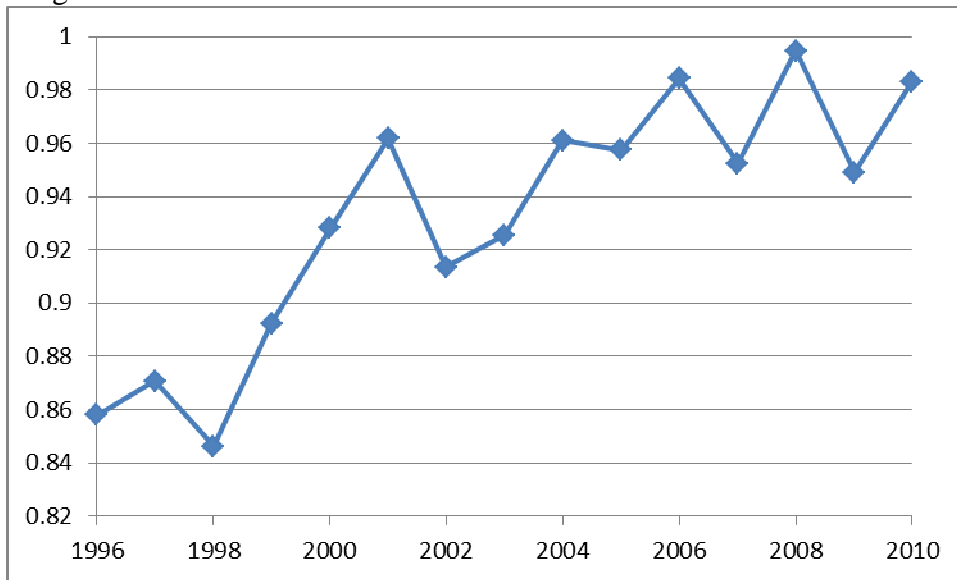
Clorox



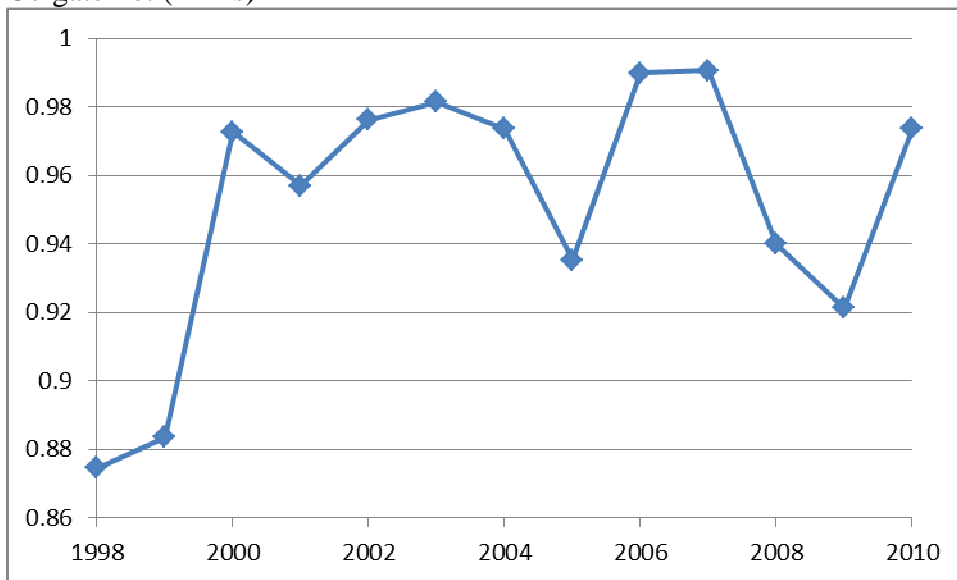
Coca Cola



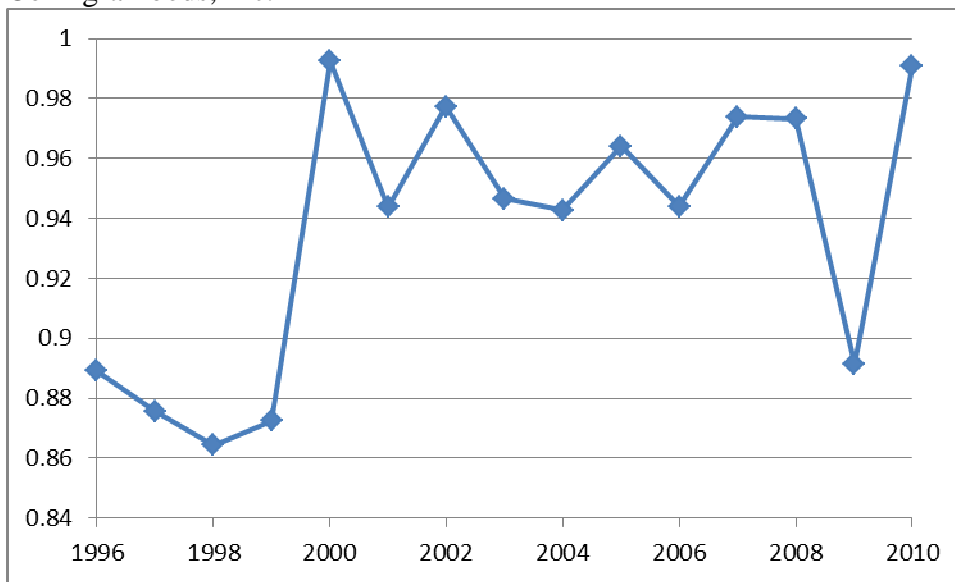
Colgate-Palmolive



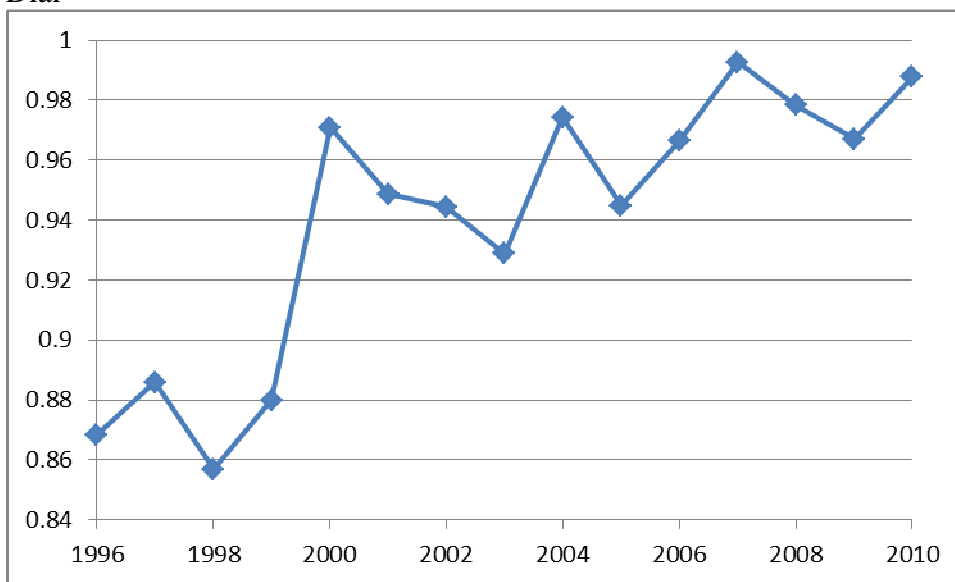
Colgate Pet (Hill's)



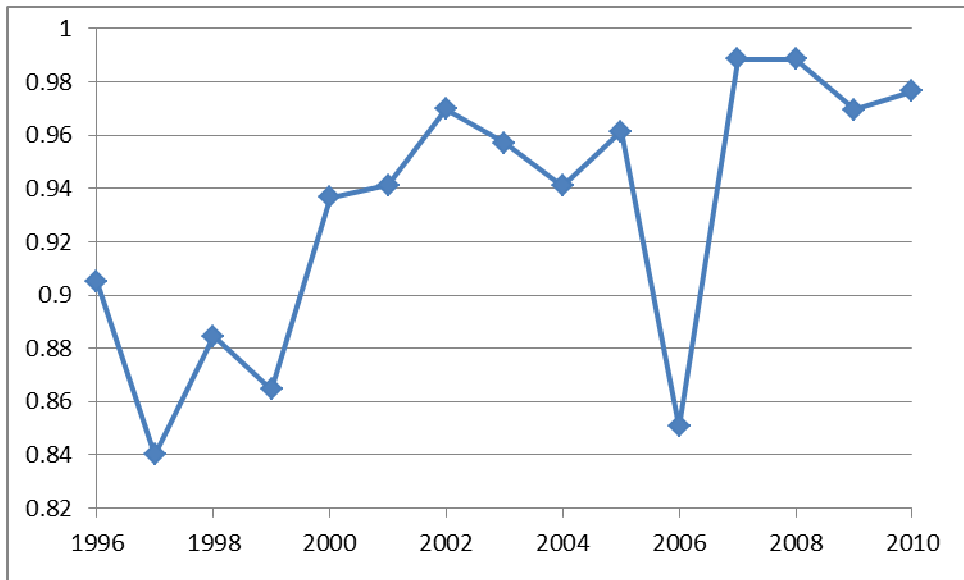
ConAgra Foods, Inc.



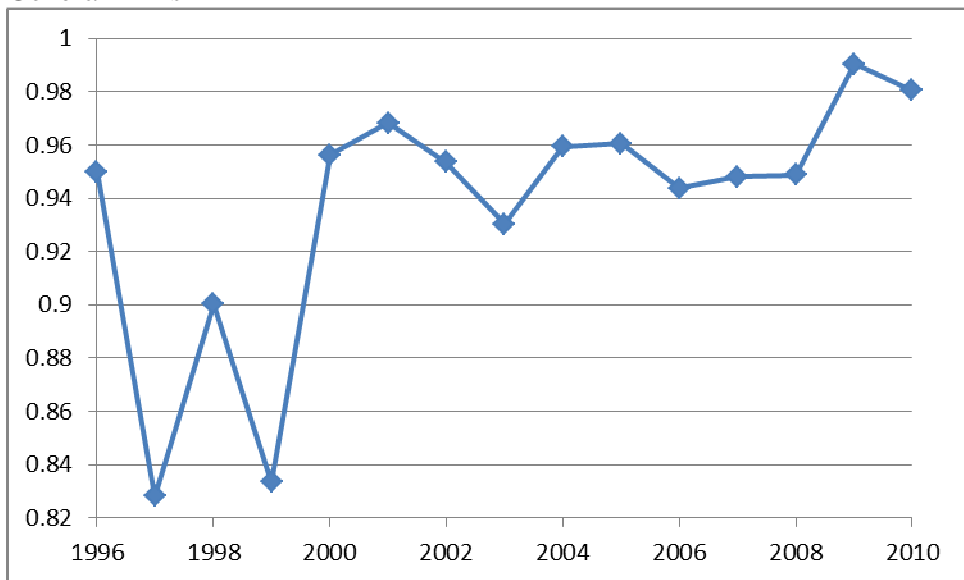
Dial



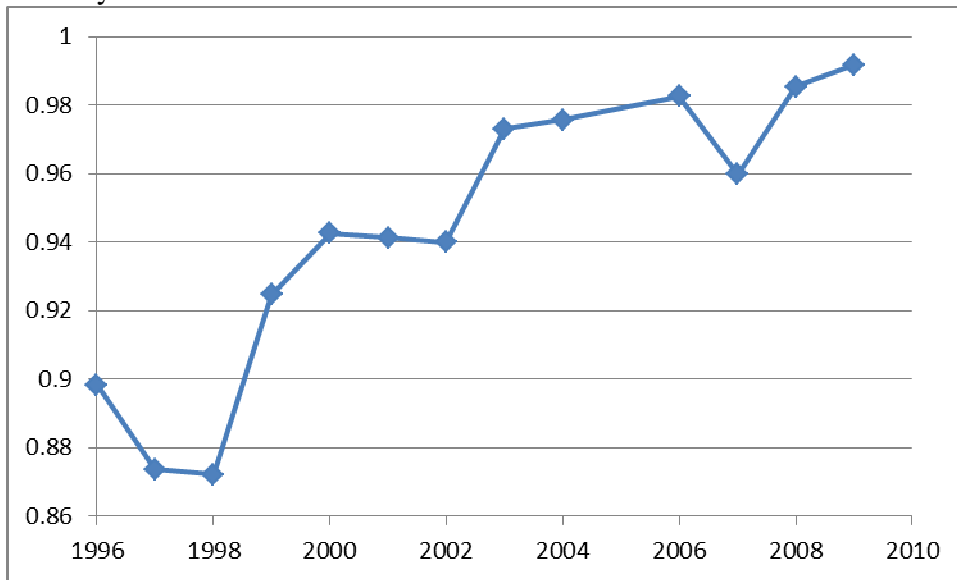
Dole Food Co.



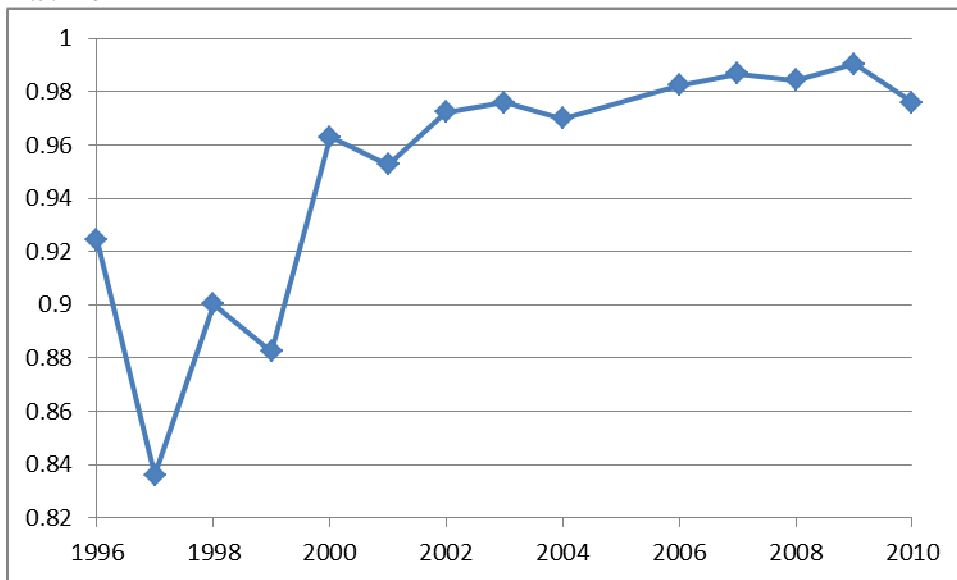
General Mills



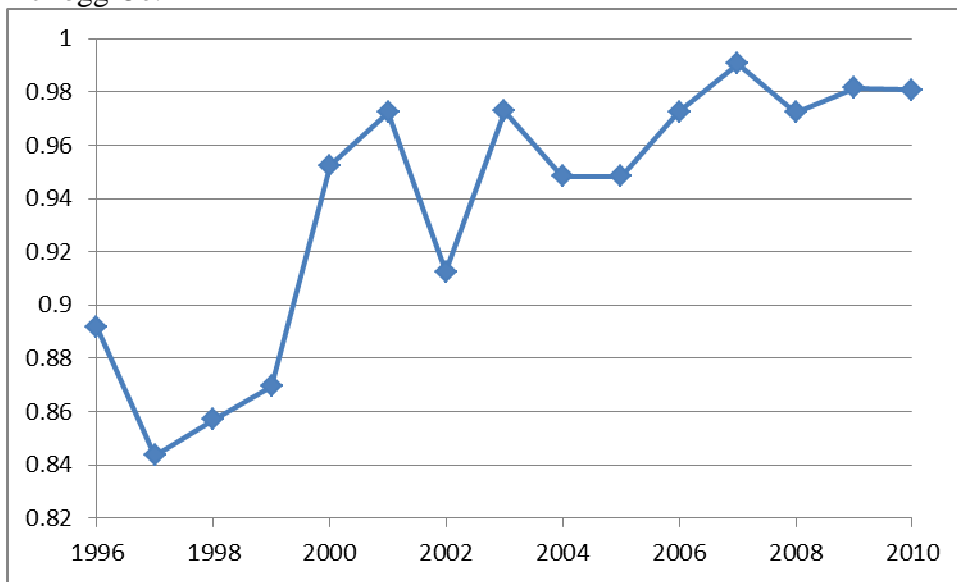
Hershey



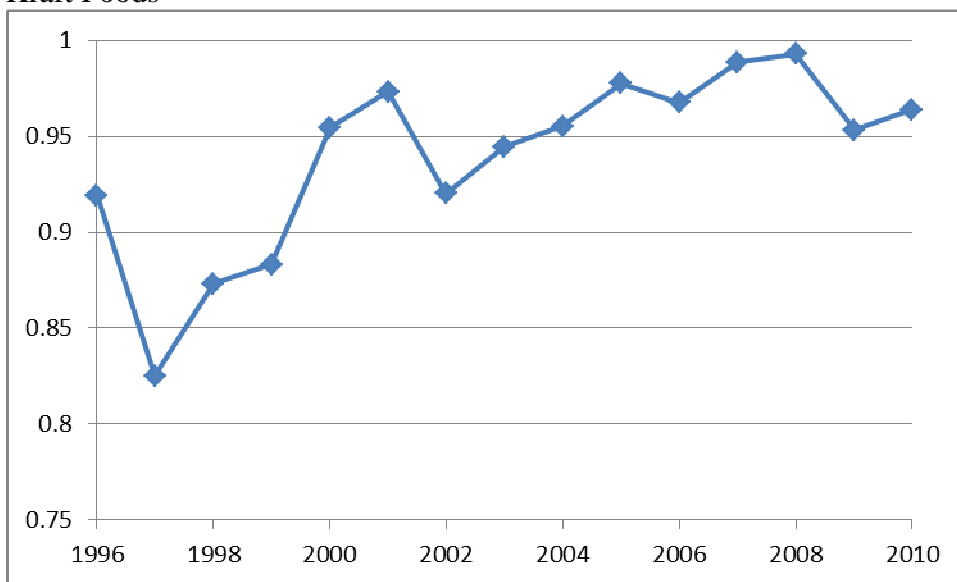
H.J. Heinz



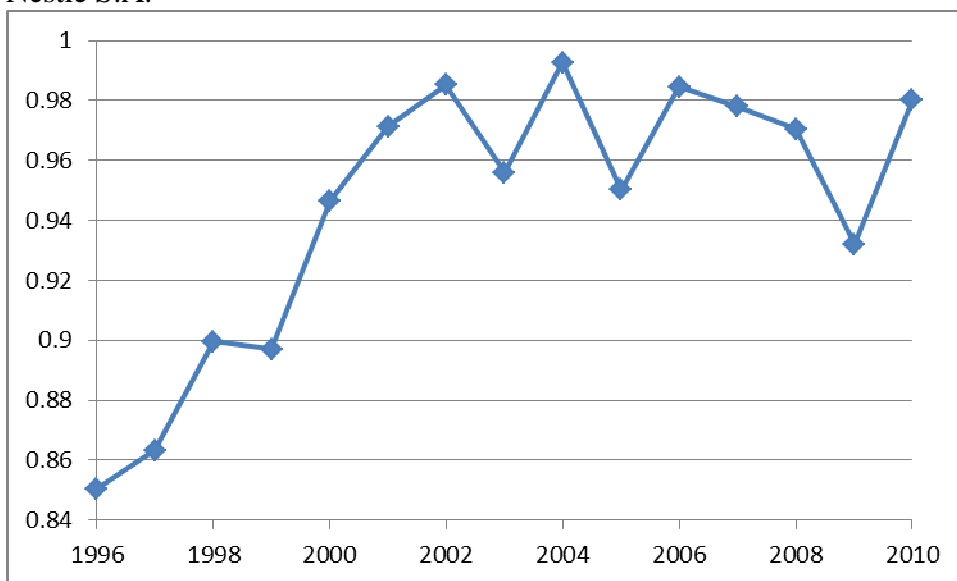
Kellogg Co.



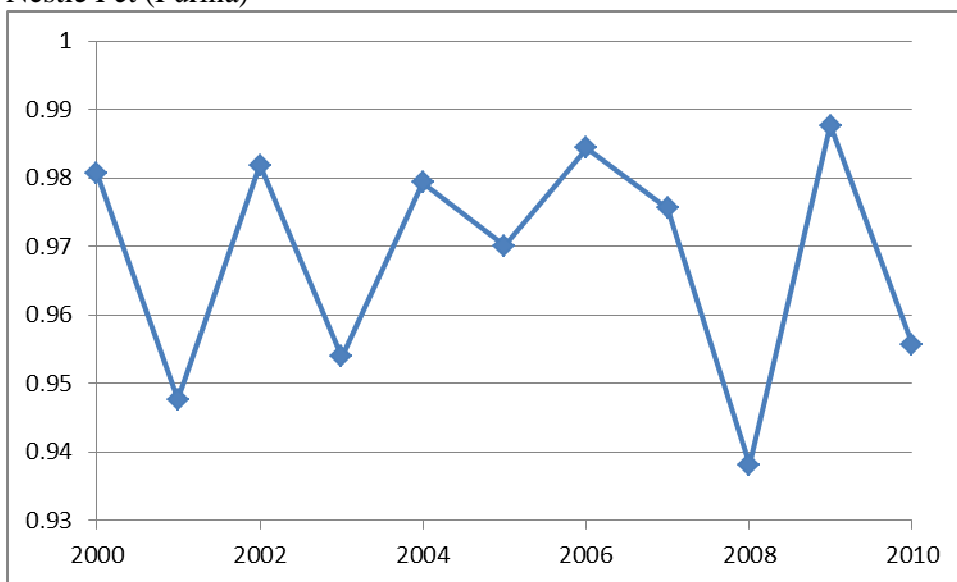
Kraft Foods



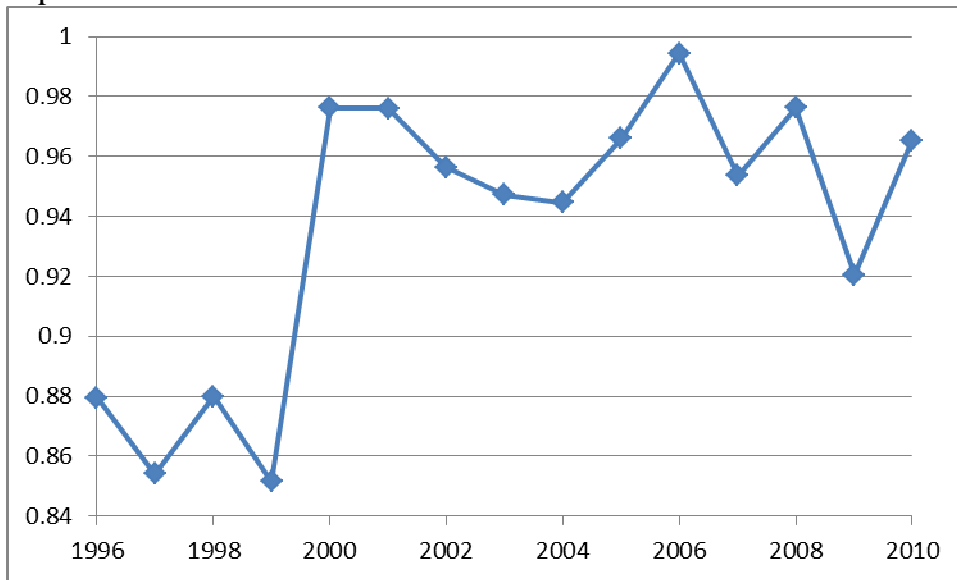
Nestlé S.A.



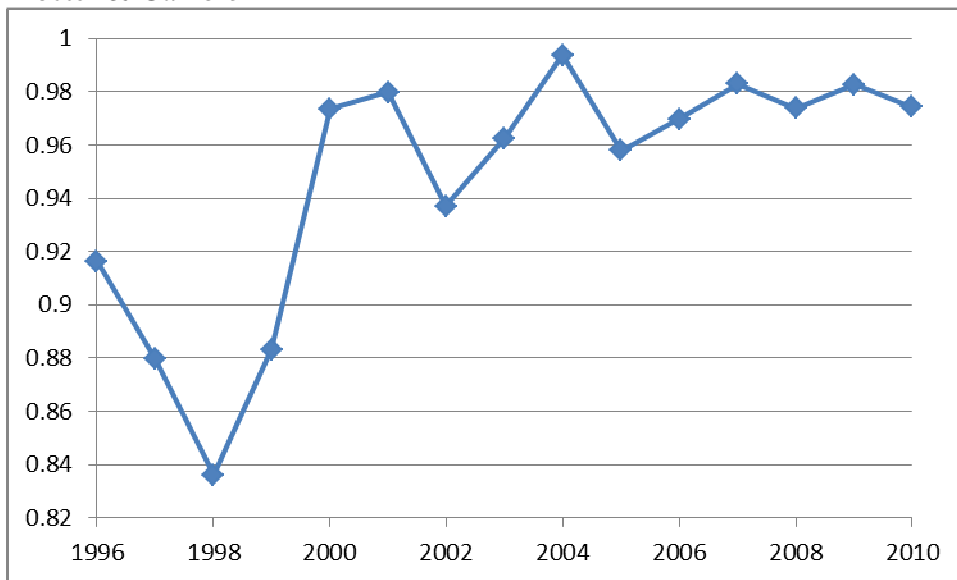
Nestlé Pet (Purina)



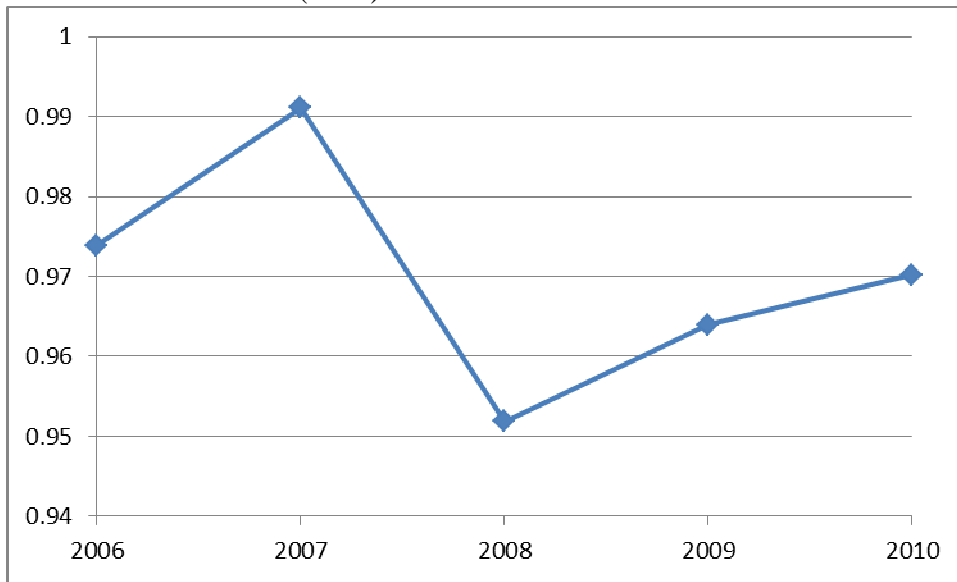
PepsiCo



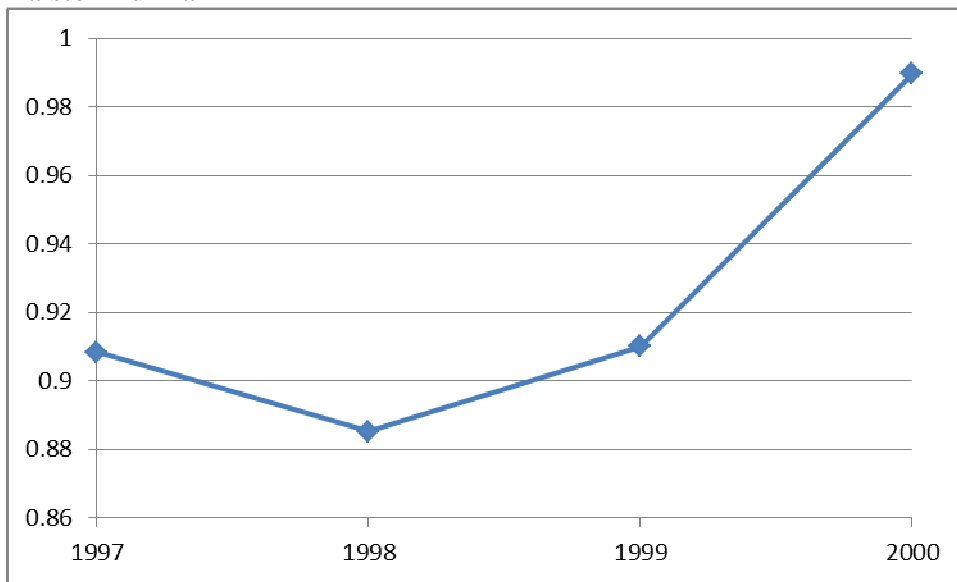
Procter & Gamble



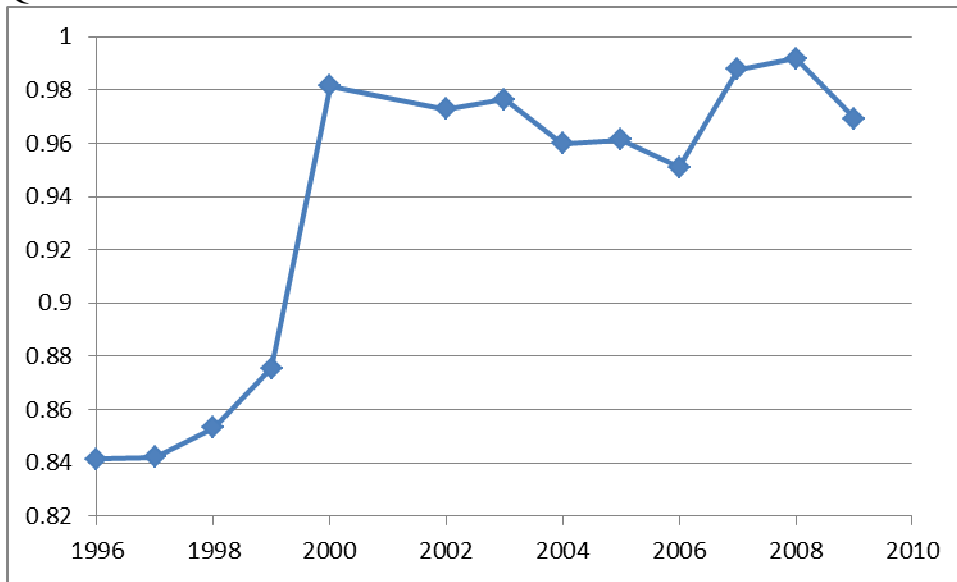
Procter & Gamble Pet (Iams)



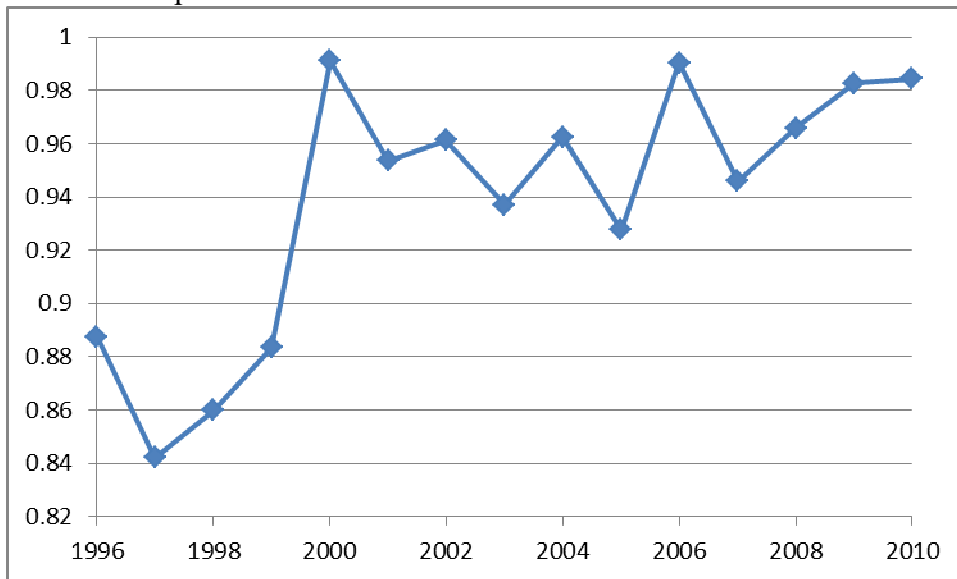
Ralston Purina



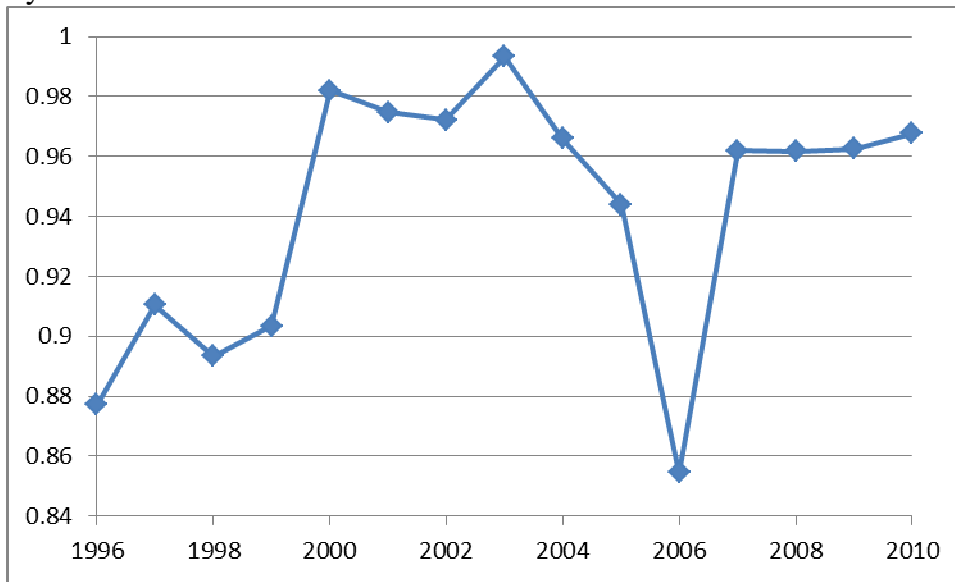
Quaker Oats



Sara Lee Corp.



Tyson Foods



3.6 Future Research

To address some empirical limitations, a more sophisticated measure of the HHI could be used. This study uses the HHI metric from the U.S. Census, which is measured in waves. Thus, this metric could be replaced with a HHI measure that varies annually. In addition, the mediation effects could be tested using a Preacher-Hayes bootstrap test, which is more powerful than the Sobel test (Zhao et al. 2010).

To expand upon the current research, given that this study is limited to the CPG sector, modeling these relationships in other industries, including the service sector and nondurables, presents an opportunity for future research. For other industries, there may even be different drivers of loyalty capability, and the effects of a firm's innovative new product mix on loyalty capability may vary across industries.

Another area for future research is to examine the effects of different advertising tactics on loyalty capability. For example, a separate study could control for whether the

advertising is informative, persuasive, or transformative (Mehta et al. 2008). Informative advertising serves to educate a consumer about product features and attributes, and shape their perceptions of quality. Persuasive advertising is particularly effective in low-involvement situations (Mehta et al. 2008), and operates by influencing consumer attitudes directly, without the need for cognitive evaluation (Aaker and Norris 1982; Zajonc and Markus 1980). Lastly, transformative advertising, which tends to be abstract (Deighton 1988) and rarely contradicts consumer beliefs directly (Deighton 1984), significantly affects a consumer's brand experience, as it influences how consumers view and evaluate the product (Mehta et al. 2008). Thus, given the different functions of these advertising tactics, it may be the case that the efficiency with which a firm converts advertising into loyalty varies across tactics.

Lastly, future research could control for the brand's stage in its life cycle. This would affect whether the consumer has already developed cognitive or affective perceptions of the brand (Johnson et al. 2006), as well as whether the firm is looking to establish initial customer loyalty or maintain and strengthen existing loyalty levels. Since advertising may affect loyal consumers differently than nonloyal consumers, the firm may benefit from running customized advertising campaigns based on the stage in the brand's lifecycle in order to efficiently increase loyalty.

In sum, this research shows that loyalty capability is a significant driver of firm performance, and can be enhanced by strategically allocating the marketing mix. However, achieving the optimal marketing mix is challenging, given that the ideal mix varies with category characteristics and firm-level factors including a firm's portfolio strategy.

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CHAPTER IV – ESSAY III: MARKET EXPERIENCE AND INTERNATIONAL CUSTOMER SATISFACTION

4.1 Introduction

Multinational corporations (MNCs) face many unknowns associated with offering their products in foreign markets, including uncertain consumer demand and unfamiliar business conditions. Some of the questions that plague MNCs include the following: will the firm be able to overcome cultural and economic differences and avoid incurring prohibitive costs associated with operating in unfamiliar territory? Can experience in the market increase the firm's knowledge and adaptive intelligence and help them to overcome their cultural and economic distance from the host country? In sum, will the MNC be able to successfully provide a valuable offering to consumers in the host country that will meet or exceed consumer expectations?

Within the domestic market, the firm is well acquainted with the customer, woven into the cultural and economic fabric of the marketplace. Shared cultural values make it easier for the firm to anticipate customer needs and adapt product offerings to local tastes and whims accordingly. Conversely, firms engaged in international sales must deal with differences in culture, education, and level of development between the home and host countries. The sum of such factors that hinder the flow of market information in foreign markets is referred to as psychic distance (Johanson and Vahlne 1977), which can result in a

fundamental disconnect that presents challenges to the firm in terms of providing value to the customer.

In this study, the metric of customer satisfaction is used to measure the firm's ability to provide value to the customer. Customer satisfaction has been the focus of extensive academic research because of its links to customer loyalty and potential financial implications for the firm. It has been found to contribute to long-term profitability (Mittal et al. 2005) as well as stock price (Fornell et al. 2006). Customer satisfaction is a useful managerial metric in that it aids in planning and forecasting, as it serves as a barometer of performance and allows for benchmarking against competitors. Due to its usefulness, many countries have adopted a customer satisfaction model. While it is enlightening for firms to track customer satisfaction within their respective domestic markets, understanding customer satisfaction evaluations abroad is very important, since for many MNCs, foreign sales account for a significant percentage of the firm's revenue. In 2000, foreign sales among the S&P 500 companies represented 30% of total S&P 500 revenue. In 2011, the percentage of S&P 500 revenue from outside of the United States had climbed to 46.1% (PRNewswire 2012). Given that customer satisfaction is tied to firm performance, it can serve as a valuable indicator for the MNC as they continue to expand into new markets.

To the best of my knowledge, only one paper has looked into the differences in customer satisfaction across countries. More specifically, Morgeson et al. (2011) conducted a large-scale cross-cultural analysis where customer satisfaction is defined at the industry level. Their study examines how customer satisfaction varies as a function of country-level cultural, socioeconomic, and political-economic predictors of cross-national variation in satisfaction, thereby ignoring firm-level effects. As such, no insights can be derived as to the

extent to which firm experience and differences between a firm's home and host-market characteristics impede/stimulate adding value for customers.

Currently, there is little existing research that addresses customer (dis)satisfaction with multinational firms and examines how satisfaction varies relative to a firm's experience with and proximity to the customer. This article addresses these gaps by analyzing a firm's customer satisfaction scores abroad to assess the extent to which the challenges associated with operating abroad, including accounting for and adapting to the differing values of foreign consumers, may affect customer satisfaction. This study also examines the extent to which cultural and economic differences between the host country and the firm's country of origin can be mitigated by experience.

Thus, I center on the following key question: to what extent does market familiarity and experience compensate for psychic distance between the firm's home country and the host country? Using multilevel modeling, the hypotheses are tested on a data set consisting of customer satisfaction evaluations across 22 countries. The customer satisfaction evaluations come from business-to-consumer firms covering a wide range of industries. This study analyzes the extent to which cultural and economic distances between the home and host countries negatively affect customer satisfaction, and whether those effects are moderated by a firm's experience in the market. The analysis also accounts for a number of country-specific cultural and socioeconomic control variables that may systematically affect a firm's ability to satisfy consumers.

4.2 Conceptual Framework

The liability of foreignness refers to the operational hurdles posed by distance between the home and host countries as well as being unfamiliar with the cultural, political, and economic conventions of the host country (Zaheer 1995). Discrepancies between the home and host markets can indeed make it difficult for the firm to understand what customers value and how to ultimately meet their needs. These differences between the home and host countries are identified as psychic distance (Johanson and Vahlne 1977), which can describe differences in language, education, level of development, and culture. An additional barrier associated with psychic distance is low homophily, or a lack of a mutual subculture and a difference in personal characteristics. Psychic distance and low homophily make general knowledge-sharing more challenging, and decrease the firm's ability to perceive and interpret subtle nuances of the market.

Learning helps to reduce the psychic distance between the home country and the host country by expanding knowledge of conditions in the host country (Barkema et al. 1996). Among multinational firms, international experience represents a prime source of organizational learning (Belderbos 2003), which enables a firm to improve their actions through increased knowledge and understanding (Fiol and Lyles 1985). Thus, experience in foreign markets, which allows for organizational learning to take place, may help a firm to overcome the liability of foreignness. However, erratic changes and volatility in the differences between the firm's country of origin and the host country may impede organizational learning, making it difficult for the firm build upon its knowledge over time.

With respect to the psychic distance between the home and host countries, I examine how the differences between cultures and economies of the home and host markets affect a

firm's ability to satisfy customers. The difference between the cultures and economies of two countries is termed cultural distance and economic distance, respectively. Cultural distance has been studied a great deal in the context of entry into foreign markets (Barkema et al. 1996; Gielens and Dekimpe 2007; Kogut and Singh 1988; Mitra and Golder 2002), as it affects consumers' tastes and preferences (Ghemawat 2001). Therefore, cultural distance may have a significant effect on a consumer's degree of customer satisfaction.

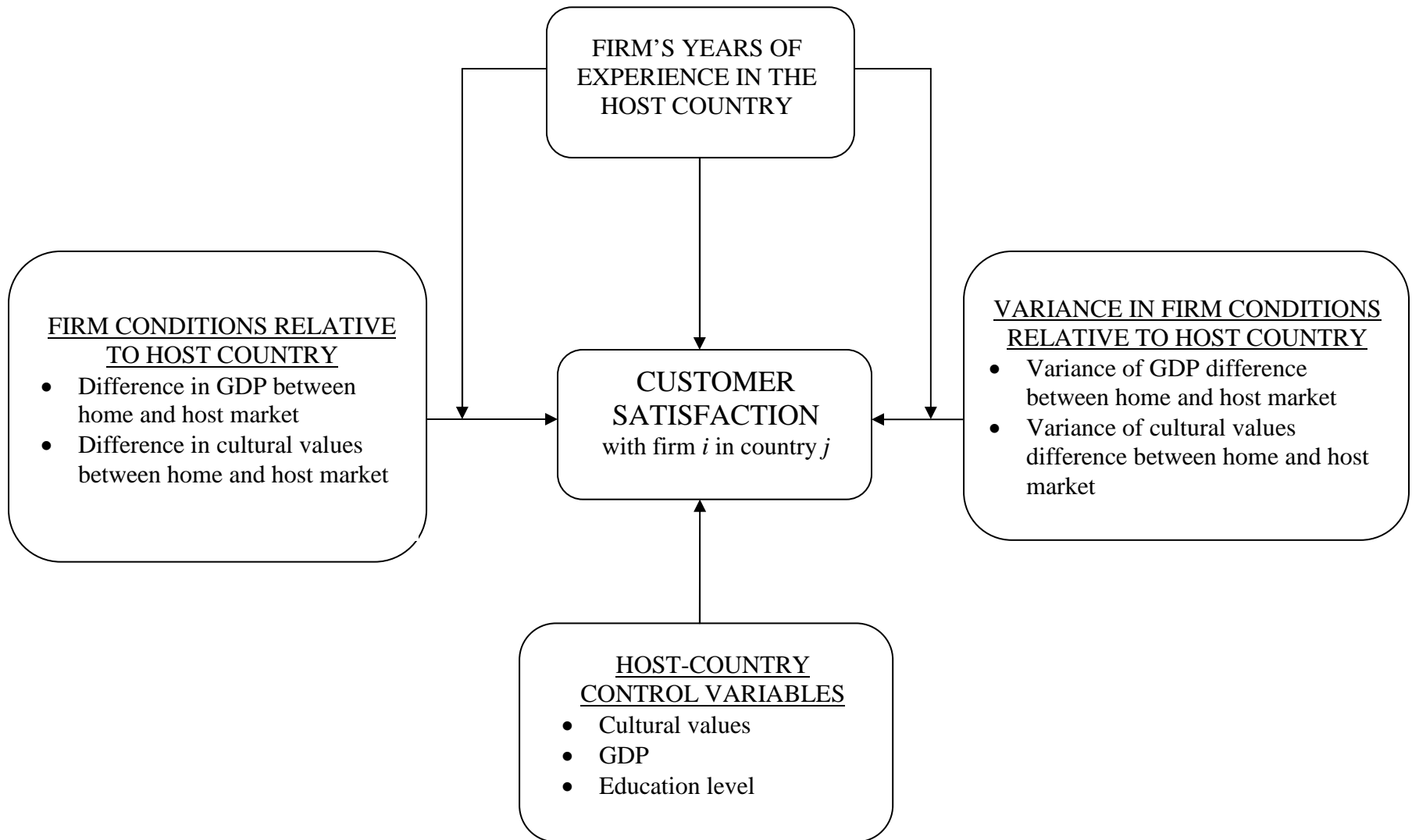
Like cultural distance, economic distance has also been acknowledged as a factor that affects a firm's ability to succeed in foreign markets (Barkema et al. 1996; Gielens and Dekimpe 2007; Mitra and Golder 2002). Economic distance between two countries broadly indicates a difference in consumer incomes (Ghemawat 2001). Further, a nation's per capita income level generally determines consumers' preference similarity, or consumption patterns, regardless of nationality (Kotabe and Helsen 2008). Thus, if GDP per capita in the host country is similar to that of the home country, then a firm may be able to apply knowledge related to its home market to the host market. According to Mitra and Golder (2002), similarities in economic conditions may aid in knowledge transfer and translate to similarities in consumer demand.

However, depending on the nature and direction of the cultural and economic distance, distance may even put the firm in an advantageous position in terms of satisfying customers. Thus, the direction of the cultural and economic distances between the two countries is considered when evaluating the effect of distance on a firm's ability to satisfy consumers in the host country.

Before elaborating on how these distances and the volatility of the respective distances may affect a firm's ability to satisfy the customer in the host market, the potential main effects of culture and economic prosperity of the host market are addressed.

Figure 4.1 presents the conceptual framework of this essay, in which I hypothesize that the cultural and economic conditions of the firm's country of origin relative to the host country, as well as the evolution of those conditions over time, will affect customer satisfaction. I posit that these conditions will be moderated by the firm's years of experience in the host country. I also anticipate that host-country control variables related to socioeconomic conditions will be drivers of customer satisfaction. Additionally, I control for the cultural values specific to each host country. Below, I discuss how each of the respective cultural and socioeconomic variables may affect customer satisfaction.

Figure 4.1
Conceptual Framework



The Impact of Cultural Distance on Customer Satisfaction

Culture

According to Tse et al. (1988, p. 82), one of the ways in which culture is reflected is through “general rules for selective attention, interpretation of environmental cues, and responses.” Thus, cultural norms have a significant impact on consumer perceptions as well as the importance assessed to certain items that factor into the overall customer satisfaction evaluation. For example, Japanese consumers assign a higher value to personal interactions than do American consumers when it comes to the relationship between suppliers and customers (Khan et al. 2009). Though there is a great deal of heterogeneity within countries, “meaningful within-country commonalities and between-country value differences” exist (Sivakumar and Nakata 2001, p. 559). Thus, it is expected that a nation’s cultural values will have a significant impact on customer satisfaction evaluations, since consumers across cultures inevitably focus on different cues and have a variety of interpretations.

To quantify and subsequently compare each country’s cultural dimensions, Inglehart’s framework (Inglehart and Baker 2000) is used. This framework is appropriate for the following study as it is concerned with cultural values that apply to consumers at the national level, and it tracks the movement of a country’s cultural values over time. A country’s culture is closely tied to its level of economic development, as economic development has systematic cultural and political consequences, and propels societies to move in a predictable direction (Inglehart and Baker 2000; Tang and Koveos 2008). These changes take the form of a parallel movement, rather than a convergence, as a country’s heritage continues to play a large role and countries retain their distinctive cultural traditions (Inglehart and Welzel 2009). The Inglehart framework is measured through the World

Values Survey, and it has been used in previous cross-national studies by Morgeson et al. (2011), Steenkamp and de Jong (2010), and Steenkamp and Geyskens (2012).

Inglehart's framework is represented by two bipolar dimensions of values: traditional versus secular-rational, and survival versus self-expression. Traditional societies tend to emphasize the importance of family life, religion, and respect for authority. Secular-rational societies are characterized by a sense of control over nature and by uniform social classes which value the accumulation of goods. Individuals in survival societies place a high value on economic and physical security, are low in trust, and feel threatened by foreigners. Conversely, individuals in self-expressive societies are highly tolerant and place a premium on well-being and freedom of choice (Inglehart and Welzel 2005). Below, I discuss how these cultural values may affect consumption and subsequent customer satisfaction evaluations within a society.

As a country evolves from an agrarian to an industrial society, it moves from an emphasis on traditional values to an emphasis on secular-rational values (Inglehart and Baker 2000). As an economy progresses from industrialism to postindustrialism, values transfer from an emphasis on survival to an emphasis on self-expression. This shift is associated with the rise of the service sector at the expense of the industrial sector (Inglehart and Baker 2000; Inglehart and Welzel 2005).

Consumers in countries that exhibit strong secular-rational values should be easier to satisfy for a number of reasons. As members of uniform social classes, they share similar tastes and preferences. Members of secular-rational societies may even experience "secular utopias" through the accumulation of man-made goods (Inglehart and Welzel 2005, p.26). Thus, as secular-rational consumers may experience high levels of satisfaction through the

accumulation of standardized products, firms need only provide standardized goods to this mass market, as customization is not valued.

Conversely, consumers in countries that exhibit strong values of self-expression may be difficult to satisfy due to their diverse preferences. This postindustrial state is marked by a concern for human welfare and the decline of materialistic secularism (Inglehart and Welzel 2005). Thus, the individual's search for meaning extends into their purchase situations, in which they seek goods that reflect their individuality and humanistic interests. These criteria require firms to deliver a high degree of customization, which make it challenging for the firm to provide value.

Empirically, other results have been found which show that consumers in secular-rational societies express lower satisfaction than consumers in traditional societies, and consumers in highly self-expressive societies express greater satisfaction than consumers in survival-oriented societies (Morgeson et al. 2011). Morgeson et al.'s conceptual rationale for these relationships focuses on the impact of culture on the evaluation processes of individuals. More specifically, they argue that individuals in secular-rational societies use more critical judgment than individuals in traditional societies, which negatively affects customer satisfaction, and individuals in self-expressive societies are more trusting and have greater overall satisfaction with life experiences, which translates to positive experiences with products and services. The present study is not a replication of the Morgeson et al. (2011) analysis, but rather addresses how well an individual firm may satisfy the needs of consumers in a particular society. Empirically, the studies greatly differ, as the Morgeson et al. (2011) study aggregates customer satisfaction at the industry level and does not control for variation in satisfaction evaluations that occurs within a given country. In contrast, this

study allows for variation not only at the country-level, but at the firm-level as well. Further, the hypotheses in this essay are conceptually based on the premise that culture provides information surrounding the complexity of consumer needs and preferences in a given society, and the difficulty associated with satisfying the needs and preferences of consumers will directly affect the firm's ability to provide value to those consumers.

In sum, this study proposes the following:

H1a: Firms will experience greater success in satisfying consumers in secular-rational societies.

H1b: Firms will experience less success in satisfying consumers in self-expressive societies.

Cultural distance

According to Kronberg and Thomsen (2009), cultural distance between the firm's home country and the host country contributes to the liability of foreignness. Given that knowledge transfer from the home to host market occurs more readily when unhindered by distance (Gielens and Dekimpe 2007), at first sight, a foreign firm may appear to be at a disadvantage if it does not share a common set of cultural values with the consumer. However, as I will argue below, depending on the nature of the differences between the two cultures, it may turn out to be an advantage. Thus, the extent to which the cultures of the home and host markets differ may have significant yet divergent effects on customer satisfaction.

With respect to traditional societies, "unlike industrial workers, free farmers and merchants in preindustrial capitalist economies experienced a conservable degree of free choice in their daily activities" (Inglehart and Welzel 2005, p. 35). "Preindustrial free-farmer

and free-trading societies allowed for more individual autonomy than industrial societies...” (Inglehart and Welzel 2005, p. 34). Thus, industrial product offerings may not align with needs of traditional societies, which are more fragmented and unique to the individual’s situation. This variation is less a function of an individual’s need for self-expression, and more related to varied needs that are based on vocation and individual circumstances. Thus, despite the fact that firms in traditional societies have not yet “progressed” to standardized production on a mass scale, firms originating from traditional societies may be better equipped to satisfy the needs of segments of consumers from secular-rational cultures than vice versa.

If the culture of the host-market is more self-expressive than the culture of the firm’s country of origin, then the firm will lack the resources and skills necessary to provide the level of creative, multi-faceted product solutions that highly self-expressive consumers are seeking. There is a large discrepancy between the priorities of self-expressive societies versus survival societies, as self-expressive societies value freedom of choice and individual autonomy (Inglehart and Welzel 2005). In addition, individuals in self-expressive societies have a greater concern for human welfare and the environment (Inglehart and Welzel 2005), and thus may assign significant value to a firm’s degree of corporate social responsibility. In sum, consumers in self-expressive societies may demand products that reflect their unique personal identities, including their social concerns. Survival societies have vastly different priorities, as physical and economic security are of primary concern (Inglehart and Welzel 2005). Thus, survival societies will struggle to provide value to self-expressive consumers, as their products and services will not meet the diverse preferences of individuals in self-

expressive societies. Therefore, consumers may be less satisfied with firms from nations that are lower in postindustrialization.

In sum, the following effects are hypothesized:

H2a: Firms will have greater success in satisfying customers if the host country is more secular-rational than the firm's country of origin.

H2b: Firms will experience less success in satisfying customers if the host country is more self-expressive than the firm's country of origin.

Variation in cultural distance

The differences in cultural values between the host country and the firm's country of origin are subject to variation over time. If the differences remain static, then the firm has the opportunity to learn about the host market over time and tailor its product offerings accordingly. However, large variances of cultural differences between countries over time may result in increased risk for the firm, as cultural volatility can lead to erratic changes in consumer preferences. This variation makes it challenging for a firm to learn how to provide value to consumers in the host country and build upon prior experiential and market knowledge.

If there is a convergence (divergence) of cultural distance that is constant, then a firm will be better able to learn and make predictions about future circumstances. A convergence (divergence) of cultural distance represents a trend, whereas a high level of variation requires the firm to adapt to unexpected changes. Unexpected changes in the environment bring greater demands on the firm, as adaptability represents a further capability that is required by the firm. The relevance of adaptability is further discussed in the context of the benefits of firm experience in the market.

With respect to variation in cultural distance, the following effects are proposed:

H3a: Variance in traditional/secular-rational distance between the host country and country of origin over time will make it more difficult for the firm to satisfy the customer.

H3b: Variance in survival/self-expressive distance between the host country and country of origin over time will make it more difficult for the firm to satisfy the customer.

The Impact of Economic Distance on Customer Satisfaction

Economic prosperity (GDP per capita)

According to Benjamin Friedman, “economic growth is consistent with both producing more and producing better” (Fornell 2007, p. 47). GDP per capita is a proxy for economic prosperity that measures the quantity of national output and economic activity per capita. In a study by Grigoroudis et al. (2008), they find that GDP per capita has a positive effect on all three of the national satisfaction indices in their study, including the American Customer Satisfaction Index (ACSI), the Swedish Customer Satisfaction Barometer (SCSB), and the German index, or Deutsche Kundenbarometer (DK).

Consumer spending represents a significant portion of GDP; in the U.S., consumer spending accounts for as much as 70% of GDP (Global Macroeconomics Team 2012). Fornell (2007) proposes that consumer spending is propelled by anticipated customer satisfaction, as consumers seek gratification through purchases, and therefore purchase those items that they believe will bring them the greatest satisfaction. Through multiple purchase occasions and subsequent learning, consumers can make corrections in order to purchase goods with which they are satisfied. Thus, through an iterative process, high levels of spending in aggregate should result in increased satisfaction levels.

Thus, the following hypothesis is proposed:

H4: Firms will experience greater success in satisfying consumers in nations with high GDP per capita.

Differences in economic prosperity (GDP per capita)

Research shows that a country's level of economic development, measured by GDP per capita, has a positive effect on a country's number of ISO 9000 certifications, which certify quality processes within an organization (Guler et al. 2002). These certifications are not limited to manufacturing firms, but are available to all of the industries represented in this study, including the service industry. Thus, the quality of products and services from countries characterized by high economic development will generally be superior.

Consumers may also infer quality from extrinsic cues (Olson and Jacoby 1972). In the context of a global marketplace, a firm's country of origin¹⁰ may serve as a quality cue (Verlegh and Steenkamp 1999), similar to price (Schooler 1965), which has a direct effect on customer satisfaction. Aside from research relating to country-specific image, studies analyzing the role of country of origin as a quality cue tend to focus on consumer perceptions of products from emerging versus developed countries (Josiassen and Harzing 2008; Pappu et al. 2007; Sharma 2010; Usunier and Cestre 2008). A country's GDP is an indicator of its level of economic development, which factors into its classification as either a developed or emerging country (<http://www.msci.com/>). Thus, research showing that products from developed countries are evaluated more favorably than products from emerging markets (Bilkey and Nes 1982; Verlegh and Steenkamp 1999) suggests that products from countries with a higher GDP per capita should generally be evaluated more positively. Thanasuta et al.

¹⁰ While there is rich literature on specific country of origin effects (Roth and Diamantopoulos 2009; Verlegh and Steenkamp 1999), it is beyond the scope of this research to account for all of the individual country/product perceptions due to the large number of industries and countries included in this data set.

(2009) find support for this relationship in the auto industry, as firms from countries with a high per capita GDP are able to leverage quality perceptions associated with their nation's level of economic development and charge a premium.

In sum, the following effects are proposed:

H5a: Firms will experience less success in satisfying consumers when the GDP per capita of the host country is greater than that of the firm's country of origin.

H5b: Firms will experience greater success in satisfying consumers when the GDP per capita of the host country is less than that of the firm's country of origin.

Variation in economic distance

Variation in economic distance between the firm's country of origin and the host market may occur due to several possible scenarios, including fluctuations in the host country's economy, fluctuations in the country of origin's economy, or concurrent fluctuations in both countries. If the economy of the host country is volatile or erratic, then a firm may find it difficult to continuously satisfy consumers in that market, as changes in consumer wealth in the host country may significantly affect consumption patterns. If this is the case, then the firm will be challenged to anticipate the changing needs of customers in the host country and subsequently provide them with value. For example, a recession, which is reflected in a shrinking GDP, may require that the firm alter their strategy by changing the product mix, putting greater emphasis on a product's value, or offering the product in smaller sizes or quantities (Kotabe and Helsen 2008). Alternatively, while economic growth of the host market may present opportunities for the firm, it may also require an adjustment of the marketing mix to reflect changes in consumer preferences.

Likewise, economic instability in the country of origin may also create obstacles for the firm. For example, a country like Russia that is characterized by relatively high variation in GDP per capita over the past fifteen years has been plagued by significant geopolitical risk. This risk may be detrimental to a MNC that is based in Russia in that it may create challenges that threaten operations, including currency fluctuations or a disruption in the flow of resources. In addition to creating challenges in providing superior goods and services to consumers, these operational issues may further distract the firm from efficiently expanding upon its stock of organizational learning. Thus, variability in between-country differences may impede organizational learning, whether the variability is attributed to volatility in the firm's country of origin, volatility in the host country, or a combination of both.

Alternately, firms can more readily adapt to situations in which there is little variance in the economic distance between the firm's country of origin and the host country. If the differences remain fixed, then the relationship should be relatively stable and there should be few surprises for the firm related to the operating environment and consumer preferences. This provides a greater opportunity for significant organizational learning to take place.

Thus, with respect to variation in economic differences, the following hypothesis is proposed:

H6: Variance in GDP distance between the host country and country of origin over time will make it more difficult for the firm to satisfy the customer.

The Impact of Experience on Customer Satisfaction and its Moderating Effects on Cultural and Economic Distance

The longer a firm is in the market, the greater its opportunity to increase its market-specific knowledge and experiential knowledge. While knowledge should increase with duration of time in the market, diminishing returns are to be expected over time (cf. Mitra and Golder 2002). In addition to building knowledge, a firm is also able to develop and strengthen local connections and networks over time (Johanson and Vahlne 1977; Barkema et al. 1996). As a firm's local connections and knowledge grow, so does its ability to understand and respond to unique customer needs, and ultimately provide value to the customer.

In contrast to objective knowledge, which can be taught, experiential knowledge cannot be transferred and must be learned firsthand through personal experience (Johanson and Vahlne 1977). Experiential knowledge, gained over time, confers many benefits to the firm and represents a competitive advantage (Gupta and Govindarajan 2000; Mitra and Golder 2002). In fact, a study by Kronberg and Thomsen (2009) finds that older firms enjoy a significant survival premium. As a firm's cumulative experience increases over time, the firm's ability to communicate and understand relevant knowledge also increases (Zander and Kogut 1995). Further, a firm's tacit knowledge and absorptive capacity increases with cumulative experience, thus enhancing the firm's ability to assimilate and apply new information (Gupta and Govindarajan 2000).

Through time and experience in a certain market, a firm is able to build upon its knowledge that is specific to operating within that market. This knowledge relates to knowledge of cultural patterns, the business climate, and the customer, and it serves as a

valuable resource to the firm (Johanson and Vahlne 1977). Knowledge related to the host market is idiosyncratic in nature, as it reflects the history and experience that is specific to the firm (Zander and Kogut 1995).

These resources are particularly useful when it comes to managerial work and marketing—both of which are based on relationships and communication (Johanson and Vahlne 1977). In addition, a firm's duration of time in the market tends to correspond directly with its degree of organizational learning, or its "critical organizational know-how" (Belderbos 2003, p. 240). Thus, a firm with a great deal of experiential knowledge, knowledge about the host market, and a high level of organizational learning will be well-positioned to identify and pursue opportunities in new markets in order to form meaningful relationships with the customer. This logic suggests that the following will be true for foreign firms:

H7: Years of experience in the host market will be positively related, at a decreasing rate, to a firm's ability to satisfy the customer.

In addition to the hypothesized positive main effect of experience, years of experience in the market should also have a positive moderating effect on the cultural and economic distance between the host market and the firm's country of origin. Particularly when operating in a foreign market, a firm's initial market knowledge might be very low. Firms may then benefit a great deal from experiential knowledge, as they accumulate country-specific knowledge over time (Barkema et al. 1996). Further, MNCs may reduce cultural barriers through the accumulation of foreign experiences, i.e., organizational learning (Barkema et al. 1996). Thus, the firm is able to reduce the psychic distance between the home and host countries by increasing their knowledge about local conditions over time.

A firm's years of experience in the market will also aid in their ability to cope with variation in economic and cultural distances between the home and host countries. A firm may learn from their past experience through the following process: through continual feedback-based learning, a firm builds a history of outcomes and learns to reuse the procedures that result in successes (March 2006). A firm then becomes more adaptive, and fit for "existence under the conditions of its changing environment" (Chakravarthy 1982, p. 35). Adaptive firms have the ability to align their strengths and opportunities with their environment, even to the extent that they may exploit their environment (Chakravarthy 1984). Additionally, these firms seek new market opportunities (Chakravarthy 1982) and prepare for the unknown by investing slack resources in ventures that improve survival potential. Thus, adaptive firms are equipped to handle complex environments and update accordingly. This capability should serve to diminish the negative effect of cultural and economic variation on a firm's ability to satisfy the consumer. Therefore, the following hypotheses are proposed:

H8a: Years in the market will have a positive moderating effect on the relationship between traditional/secular-rational distance and the firm's ability to satisfy the customer.

H8b: Years in the market will have a positive moderating effect on the relationship between survival/self-expressive distance and the firm's ability to satisfy the customer.

H8c: Years in the market will have a positive moderating effect on the relationship between GDP distance and the firm's ability to satisfy the customer.

H9a: Years in the market will help to diminish the negative effect of variance of the traditional/secular-rational distance on the firm's ability to satisfy the customer.

H9b: Years in the market will help to diminish the negative effect of variance of the survival/self-expressive distance on the firm's ability to satisfy the customer.

H9c: Years in the market will help to diminish the negative effect of variance of the GDP distances between the host country and the firm's country of origin on the firm's ability to satisfy the customer.

Control Variables

The impact of education on customer satisfaction

According to prior research, education has been found to have a negative effect on customer loyalty (Chance and French 1972; Mittal and Kamakura 2001; Murphy 1978) since educated consumers are more aware of the alternatives available to them, which may increase expectations. Educated consumers are able to engage in comprehensive information gathering and are capable of being discerning and skilled at evaluating the quality of products and services (Cooil et al. 2007). Provided that highly educated consumers are more effective at searching than less educated consumers, their cost of search will be relatively low. Thus, educated consumers will tend to gather more information about a product than less educated consumers, as they will "search until the marginal expected cost of search becomes greater than its marginal expected return" (Nelson 1970). Though the information garnered by the consumer aids in their purchase decision, it can also make the consumer more critical. Additionally, consumers will experience even greater disconfirmation of expectations in both directions as the ease of evaluating quality increases (Anderson and Sullivan 1993).

With greater information, the consumer's pre-purchase expectations will be more defined and the consumption experience will be evaluated against criteria that are less ambiguous. Each consumer has a unique latitude of acceptance, based on the ambiguity

surrounding the product experience (Anderson and Sullivan 1993). If expectations and product perceptions are within the consumer's "latitude of acceptance", the consumer's perceptions will converge toward their expectations. However, when a consumer is armed with information and ambiguity is low, they will have a narrow latitude of acceptance, and assimilation may not occur if there is a sufficiently large discrepancy between expectations and perceptions. Disconfirmation of expectations arises when actual outcomes as perceived by the consumer diverge from expectations (Izard 1977; Tomkins 1962). Negative disconfirmation is a case of expectations exceeding outcomes (Szymanski and Henard 2001), and it leads to dissatisfaction (Yi 1991). Based on prospect theory, losses loom larger than gains for the consumer (Kahneman and Tversky 1979), making the impact of negative disconfirmation of expectations particularly strong. Therefore, if the consumer experiences levels of positive and negative disconfirmation that are roughly equivalent, the net effect on satisfaction will be negative. Thus, the following hypothesis is proposed:

H10: Firms will experience less success in satisfying consumers in nations with a high level of education.

The impact of products vs. services on customer satisfaction

Finally, this analysis controls for whether the firm offers products versus services so that the results will not be confounded by the mix of industries and firm types included in the data set. Numerous studies using the ACSI have found that consumers consistently demonstrate lower satisfaction with services than with goods (Anderson 1994; Fornell and Johnson 1993; Fornell et al. 1996; Johnson et al. 2002; <http://www.theacsi.org/>). According to Fornell et al. (1996), this is also true across the SCSB and the DK, which suggests that the divergence of customer satisfaction scores for products versus services may be universal.

Products and services may differ greatly in the manner in which they are produced and consumed. Services are characterized by greater intangibility and inseparability of production and consumption than traditional consumer products (Parasuraman et al. 1985). Patterson and Cicic (1995) derived a framework that classifies service delivery along two dimensions: intangibility of the deliverable and the degree of face to face contact. The dominant role of the human component in service offerings makes services very difficult to standardize. Thus, service offerings will tend to be heterogeneous in nature, and therefore characterized by variation in actual quality, which can have a negative effect on customer satisfaction.

As the level of standardization decreases, as is the case with services, there will be a greater variance in perceived quality (Anderson 1994). The variance in perceived quality then leads to an increase in instances of negative disconfirmation of expectations. Given that consumers are more sensitive to the effects of negative disconfirmation than the effects of positive disconfirmation (Kahneman and Tversky 1979; Rust et al. 1999), it is anticipated that an increase in the variance of perceived quality will result in a net negative effect on customer satisfaction.

Therefore, based on the risks associated with service delivery, the following is proposed:

H11: Firms will experience less success in satisfying consumers through service interactions than through traditional consumer products.

4.3 Data

These hypotheses are tested using annual customer satisfaction data from 22 countries from 1994-2011. Since this study focuses on the MNC's ability to overcome psychic distance in order to ultimately satisfy customers, only customer satisfaction evaluations associated with foreign firms are included. Thus, for American customer satisfaction scores, scores for multinational firms that are based abroad are included, such as scores for Mercedes, Nestlé, and Samsung. Among the satisfaction evaluations collected from these 22 countries, there are a total of 151 firms represented. For each of these firms, variables were gathered that describe the firm's country of origin as well as the host countries from which the customer satisfaction information was obtained. The variables are measured at an annual level of temporal aggregation and can be classified as cultural variables (World Values Survey) and socioeconomic variables (The World Bank).

Measures

Two of the most widely used customer satisfaction indices are the ACSI and the Extended Performance Satisfaction Index (EPSI), which utilize a common model and methodology (Eklof and Selivanova 2008; Fornell et al. 1996; Morgeson et al. 2011). The ACSI model is currently licensed by nine countries and continues to expand into developing countries including Indonesia and Malaysia (<http://www.theacsi.org/>). The EPSI is currently implemented in over fifteen countries throughout Europe and Central Asia. Using data from both of these indices, the data set includes customer satisfaction evaluations from 22 countries¹¹.

¹¹ These countries include Azerbaijan, Colombia, Croatia, the Czech Republic, Denmark, the Dominican Republic, Estonia, Finland, Georgia, Indonesia, Kazakhstan, Latvia, Lithuania, Norway, Portugal, Russia, Singapore, Sweden, Turkey, the United Kingdom, Ukraine, and the United States.

Appendix E provides a listing of the 151 firms for which customer satisfaction data were obtained, categorized as 1) firms that manufacture consumer products and 2) firms that operate in the service industry. Each of the firms in this data set is multinational, and reflects customer satisfaction information from non-domestic customers. Of the 151 firms, twenty-seven firms in the data set are evaluated across multiple categories, and therefore are subject to multiple sets of customer satisfaction scores. Most of these firms are in the financial industry and are evaluated across the categories of credit cards, mortgages, or retirement. There are also a number of firms that are mobile phone service providers as well as internet providers, and are evaluated separately in each category.

There are a total of 835 firm-level observations in this data set. Among the 22 countries represented, the greatest number of observations are from consumers in the United States, followed by Sweden, and then Singapore. This is not surprising, given that the original customer satisfaction methodologies were developed in Sweden and the United States. While all of the time series observations fall within the years of 1994 and 2011, the majority of the observations are from recent years, as the median year of all of the observations is 2007.

To measure the firm's degree of *experience* in the host country, I account for how many years the firm has been operating in the host country. Thus, a firm's years of experience increases over the data set. This data was recovered from multiple sources including annual reports. The model also controls for the passage of time in years from 1994 to 2011, as reflected by *year*.

This study uses the Inglehart and Baker framework, as previously described, to operationalize the cultural variables of *traditional vs. secular-rational* and *survival vs. self-*

expressive values. The scores on the two dimensions reflect low to high results for each country, spanning from traditional (low) to secular-rational (high), and survival (low) to self-expressive (high). These measures are publicly available on the World Values Survey website (<http://www.worldvaluessurvey.org/>). To date, there have been five measurement waves of the World Values Survey: from 1981 to 2006. This analysis uses the second, third, fourth, and fifth waves of the survey, which were completed in 1990, 1995, 2000, and 2006, respectively.

The measure of *gross domestic product (GDP) per capita* is converted to current international dollars using purchasing power parity per capita. This time-varying measure was obtained from the World Bank data's World Development Indicators.

The measure of *education* was also accessed from the World Bank data's World Development Indicators. A time-varying indicator is used, which reflects the total number of new entrants into the last grade of primary education, regardless of age, expressed as a percentage of the relevant age group for that grade. This ratio may be greater than 100% if students entering the last grade of primary education are under-aged, over-aged, or repeating a grade.

Table 4.1 presents descriptive statistics for the customer satisfaction measure, the measure of a firm's experience, and the control variables described above.

Table 4.1
Descriptive Statistics

The minimums, maximums, medians, and means for each of the variables below are taken from observations between the years of 1994 and 2011.

	Minimum	Maximum	Median	Mean
Customer Satisfaction	45.02	90.98	74.31	73.89
Years in Market	0	145	14	25.06
Traditional/Secular-rational	-1.87	1.86	-.47	.09
Survival/Self-expressive	-1.42	2.35	1.12	.74
GDP per capita, PPP	\$2,432	\$60,490	\$35,146	\$31,899
Education: Primary Completion Rate	89%	116%	99%	99.14%

The firm with the lowest customer satisfaction scores across all observations was discount retailer Lidl (45.02) in Norway. The firm with the highest customer satisfaction score was Nokia (90.98) in Indonesia. The lowest observation of GDP per capita was Indonesia (\$2,432), and the highest was Norway (\$60,490). The provider with the most experience in the market was Posten Privat, which was established as the Royal Postal Agency in 1636 in its home market of Sweden, and had been serving Indonesia for 145 years at the time of the study. There are also a number of firms that were completely new to the market, with no experience at the first observation. The country that exhibited the greatest traditional values was Colombia (-1.87), while the country with the greatest secular-rational values was Sweden (1.86). Sweden was also highest on self-expression (2.35), and Russia demonstrated the greatest survival values (-1.42).

With respect to cultural value scores, of primary concern is the direction in which the firm is located on each dimension relative to the host country. The *cultural distances* are then calculated by subtracting the cultural scores of the firm's country of origin from the cultural scores of the host market. Thus, the scores of the respective secular-rational and

self-expressive dimensions are positive (negative) if the host country is more (less) modernized than the firm's home country. Since the cultural values are measured approximately every 5 years, and thus exhibit periodic "jumps" in the data, I take an average of the differences between the firm's country of origin and the host country across observations to create a non-time varying variable representing cultural differences.

With respect to the *difference in national incomes*, a spline regression analysis (Johnston 1984) is used to address the potentially asymmetric effects of economic distance on customer satisfaction. To do so, two spline independent variables are constructed that represent 1) the extent to which the host country's GDP exceeds the GDP of the firm's country of origin, and 2) the extent to which the GDP of the firm's country of origin exceeds that of the host country. Each spline segment is then incorporated into the regression equation as a separate variable (Johnston 1984; Kumar et al. 1998). To obtain these independent measures, I calculate the absolute difference between the per capita GDPs of the firm's country of origin and the host market. Two dummy variables are then created: one that indicates when the GDP of the host market is greater than that of the firm's country of origin, and one that indicates the opposite. The spline variables are then created by multiplying GDP distance by the two dummy variables. When the GDP of the host market is greater (less) than that of the firm's country of origin, the appropriate spline variable reflects the degree and direction of that distance, while the other spline variable equals zero. As was done with the cultural variables, I take an average of the GDP differences between the firm's country of origin and the host country.

To complement the variables of average cultural and economic distance, another variable is constructed to indicate the respective *variances of the distance in cultural values and GDP per capita* over the observation period.

4.4 Methodology

Hierarchical linear modeling (HLM) is used to estimate the influence of firm experience, firm-level factors, and country-level factors on customer satisfaction, as it “enables the simultaneous estimation of relationships of variables at two (or more) levels” (Steenkamp et al. 1999). It facilitates the estimation of cross-level effects, and thus makes it possible to test hypotheses on how variables measured at the country level affect satisfaction evaluations occurring at the firm level. The coefficients may be treated as random, partially explained by country-level variables and firm-level variables (where applicable). This enables the investigation of interactive effects of firm- and country-level variables. This method is particularly useful for international marketing research, as demonstrated by Steenkamp et al. (1999), as it allows for varying country-level effects and interactions with lower-level variables.

With respect to centering decisions, there is no statistical preference for one centering option over the other, though the choice should be made on a conceptual basis (Kreft et al. 1995). Based on Hoffman and Gavin’s (1988) four paradigms that describe the relationships between cross-level variables, the cross-level relationship examined in this study can be described as an incremental paradigm. The incremental paradigm involves the investigation of whether the group-level variables provide incremental prediction over and above individual-level predictors. Thus, this essay explores the extent to which cultural and

economic distance, and the interaction of market experience with those distance measures, predicts customer satisfaction after controlling for individual country-level factors and the firm's years of experience in each market. The incremental paradigm suggests that no variance in within-group slopes is expected (Hoffman and Gavin 1988). Therefore, grand mean centering is more appropriate than group-mean centering for this paradigm.

In the following model, years of market experience is not centered, though all of the remaining explanatory variables are grand-mean centered. Thus, the intercept π_{0ij} represents the expected outcome of customer satisfaction when a firm is new to the market, which is denoted as having zero years of experience, and the remaining level-1 predictors are equal to their respective grand means.

The level-1 model is comprised of the time-varying parameters, including each firm's years of experience in the market, a variable that controls for the year or the passage of time, and the country-level descriptors. The log transformation of years in the market is used in order to test the hypothesis that a firm's ability to satisfy consumers increases with years in the market at a decreasing rate (cf. Hair et al. 1995). The level-1 intercept reflects the firm's expected customer satisfaction score for a firm that is new to the market and has values that equal the grand mean for the remaining variables (e.g. Raudenbush and Bryk 2002). The error term, e_{tij} , is normally distributed with mean 0 and variance σ_j^2 .

Level 2 models non time-varying parameters, including the average differences between a firm's country of origin and the host country, the variance of these distances, and whether the firm is in the service sector. Since a spline is used to explore possible asymmetric effects related to GDP distance, the GDP distance variable is representative of two variables: one that indicates when the GDP of the host market is greater than that of the

firm's country of origin (GDP_distance_host), and one that indicates the opposite (GDP_distance_COO). The error term, r_{0ij} , is normally distributed over firms with an expected value of 0 and a variance of τ_{00} . To allow the slopes of years in the market and years to vary, random coefficients are included for these variables. This is reflected in the model as random error terms are included in equations 2b and 2c.

In level 3, the random effect, u_{00j} , is normally distributed over firms with an expected value of 0 and $\text{var}(u_{00j}) = \tau_{00}$. $\beta_{01j} - \beta_{08j}$, $\beta_{10j} - \beta_{17j}$, β_{20j} , and $\beta_{3j} - \beta_{6j}$ are fixed non-random coefficients and are constrained to be constant across countries.

In the following models, t denotes time in years, i indicates firm, j indicates country, and CS is the customer satisfaction score. The models are formulated as follows:

Level 1:

$$(1) \quad CS_{tij} = \pi_{0ij} + \pi_{1ij} \log \text{years_in_market}_{tij} + \pi_{2ij} \text{year}_{tij} + \pi_{3j} \text{education}_{tj} + \pi_{4j} \text{GDP}_{tj} + \pi_{5j} \text{secular}_{tj} + \pi_{6j} \text{survival}_{tj} + e_{tij}$$

Level 2:

$$(2a) \quad \pi_{0ij} = \beta_{00j} + \beta_{01j} \text{service}_{ij} + \beta_{02j} \text{GDP_distance_host}_{ij} + \beta_{03j} \text{GDP_distance_COO}_{ij} + \beta_{04j} \text{secular_distance}_{ij} + \beta_{05j} \text{survival_distance}_{ij} + \beta_{06j} \text{GDP_dist_variance}_{ij} + \beta_{07j} \text{sec_dist_variance}_{ij} + \beta_{08j} \text{surv_dist_variance}_{ij} + r_{0ij}$$

$$(2b) \quad \pi_{1ij} = \beta_{10j} + \beta_{11j} \text{GDP_distance_host}_{ij} + \beta_{12j} \text{GDP_distance_COO}_{ij} + \beta_{13j} \text{secular_distance}_{ij} + \beta_{14j} \text{survival_distance}_{ij} + \beta_{15j} \text{GDP_dist_variance}_{ij} + \beta_{16j} \text{sec_dist_variance}_{ij} + \beta_{17j} \text{surv_dist_variance}_{ij} + r_{1ij}$$

$$(2c) \quad \pi_{2ij} = \beta_{20j} + r_{2ij}$$

$$(2d) \quad \pi_{kj} = \beta_{kj} \text{ for } k = 3, \dots, 6$$

Level 3:

$$(3a) \quad \beta_{00j} = \gamma_{000} + u_{00j}$$

$$(3b) \quad \beta_{0pj} = \gamma_{0p0} \text{ for } p = 1, \dots, 8$$

$$(3c) \quad \beta_{1qj} = \gamma_{1q0} \text{ for } q = 0, \dots, 7$$

$$(3d) \quad \beta_{20j} = \gamma_{200}$$

$$(3e) \quad \beta_{kj} = \gamma_{k00} \text{ for } k = 3, \dots, 6$$

Substituting Equations 2a-3e into Equation 1 yields the following model:

$$(4) \quad \begin{aligned} CS_{ij} = & \gamma_{000} + \gamma_{010}service_{ij} + \gamma_{020}GDP_distance_host_{ij} + \gamma_{030}GDP_distance_COO_{ij} + \\ & \gamma_{040}secular_distance_{ij} + \gamma_{050}survival_distance_{ij} + \gamma_{060}GDP_dist_variance_{ij} + \\ & \gamma_{070}sec_dist_variance_{ij} + \gamma_{080}surv_dist_variance_{ij} + \gamma_{100} \log years_in_market_{ij} + \\ & \gamma_{110}(\log yrsinmkt \times gdp_dist_host)_{ij} + \gamma_{120}(\log yrsinmkt \times gdp_dist_COO)_{ij} + \\ & \gamma_{130}(\log yrsinmkt \times sec_dist)_{ij} + \gamma_{140}(\log yrsinmkt \times surv_dist)_{ij} + \\ & \gamma_{150}(\log yrsinmkt \times GDP_dist_variance)_{ij} + \gamma_{160}(\log yrsinmkt \times sec_dist_variance)_{ij} + \\ & \gamma_{170}(\log yrsinmkt \times surv_dist_variance)_{ij} + \gamma_{200}year_{ij} + \gamma_{300}education_{ij} + \gamma_{400}GDP_{ij} + \\ & \gamma_{500}secular_{ij} + \gamma_{600}survival_{ij} + \text{error term} \end{aligned}$$

4.5 Results

I first checked for multicollinearity among the predictors by examining the variance inflation factors (VIFs). The maximum VIF is 18.10 for GDP per capita, which is above the common cut-off threshold of 10 (e.g. Kleinbaum et al. 1988), while the remaining VIFs are below 10. As a VIF greater than 10 warrants further investigation, I examined the condition index of each predictor. The condition index is the square root of the ratio of the largest to the smallest eigenvectors of the variance / covariance matrix (Belsley et al. 1981). The condition index of GDP per capita was 3.09, which is well below the cut-off threshold of 10

and indicates that multicollinearity is not a concern (Brown and Lattin 1994). When excluding the variable for GDP per capita, the highest VIF is then 6.05, or alternately, when excluding the spline variable for GDP distance when the GDP per capita of the host country is greater than the GDP of the country of origin, the highest VIF is 9. To further investigate the robustness of the results and confirm that multicollinearity is not an issue, I compared the original results to the results obtained when dropping the GDP per capita variable, as well as the results obtained when dropping the GDP distance spline variable. The results remained consistent across each of the three models.

Table 4.2 reports the HLM results, in which the coefficients are unstandardized regression coefficients. The variance is broken down to the following percentages: 31.3% of variance is across countries, 50.4% is across firms within countries, and 18.3% of the variance occurs over time, within firms. Table 4.2 also reports the relative effect sizes for all of the estimates.¹²

Assessing the robustness of the customer satisfaction measurement tool

To test the robustness of the results to the customer satisfaction index used, a dummy variable is included that indicates whether the ACSI model or the EPSI model was used, to control for any systematic differences in measurement. This dummy variable was included in level 3 of the model, and was grand-mean centered. The full model, including the dummy variable that equals 1 if the ACSI model was used, is formulated as follows:

$$(5) \quad CS_{ij} = \gamma_{000} + \gamma_{001}ACSI_dummy_j + \gamma_{010}service_{ij} + \gamma_{020}GDP_distance_host_{ij} + \gamma_{030}GDP_distance_COO_{ij} + \gamma_{040}secular_distance_{ij} + \gamma_{050}survival_distance_{ij} +$$

¹² The effect sizes are computed as $r = [t^2 / (t^2 + df)]^{.5}$. Relative effect sizes are obtained by dividing r by the sum of the effect sizes of all predictor variables (Gielens and Steenkamp 2007; Steenkamp et al. 1999).

$$\begin{aligned}
& \gamma_{060}\text{GDP_dist_variance}_{ij} + \gamma_{070}\text{sec_dist_variance}_{ij} + \gamma_{080}\text{surv_dist_variance}_{ij} + \\
& \gamma_{100}\log \text{ years_in_market}_{ij} + \gamma_{110}(\log \text{ yrsinmkt} \times \text{gdp_dist_host})_{ij} + \\
& \gamma_{120}(\log \text{ yrsinmkt} \times \text{gdp_dist_COO})_{ij} + \gamma_{130}(\log \text{ yrsinmkt} \times \text{sec_dist})_{ij} + \\
& \gamma_{140}(\log \text{ yrsinmkt} \times \text{surv_dist})_{ij} + \gamma_{150}(\log \text{ yrsinmkt} \times \text{GDP_dist_variance})_{ij} + \\
& \gamma_{160}(\log \text{ yrsinmkt} \times \text{sec_dist_variance})_{ij} + \gamma_{170}(\log \text{ yrsinmkt} \times \text{surv_dist_variance})_{ij} + \\
& \gamma_{200}\text{year}_{ij} + \gamma_{300}\text{education}_{ij} + \gamma_{400}\text{GDP}_{ij} + \gamma_{500}\text{secular}_{ij} + \gamma_{600}\text{survival}_{ij} + \text{error term}
\end{aligned}$$

Though the results of this model were directionally consistent with the original results, the model yielded very high VIFs for GDP per capita (19.63), the ACSI dummy (14.74), and the traditional/secular-rational variable (12.05). Thus, there may be a selection bias of countries measured by the ACSI versus countries measured by the EPSI¹³.

¹³ The countries in this data set that license the ACSI model include Colombia, the Dominican Republic, Indonesia, Singapore, Turkey, and the United States. The countries measured by the EPSI include Azerbaijan, Croatia, the Czech Republic, Denmark, Estonia, Finland, Georgia, Kazakhstan, Latvia, Lithuania, Norway, Portugal, Russia, Sweden, the United Kingdom, and the Ukraine.

Table 4.2
Impact on Customer Satisfaction^a

Independent Variables	Unstandardized Coefficient	Relative effect size	Expected
Intercept (γ_{000})	70.9013***		
Time-varying effects:			
Log years in market (γ_{100})	1.6322***	.122	+ (H7)
Year (γ_{200})	-.0327	.006	
Education (γ_{300})	-.0981**	.032	- (H10)
GDP (γ_{400})	.2610***	.064	+ (H4)
Traditional/Secular-rational (γ_{500})	-2.3021***	.141	+ (H1a)
Survival/Self-expressive (γ_{600})	-3.4838***	.201	- (H1b)
Firm-level effects (non-time varying):			
Service (γ_{010})	-.7548	.016	- (H11)
GDP distance: host country>COO (γ_{020})	-.8618***	.088	- (H5a)
GDP dist.: host country<COO GDP (γ_{030})	.0949	.027	+ (H5b)
Traditional/Secular-rational distance (γ_{040})	.1407	.011	+ (H2a)
Survival/Self-expressive distance (γ_{050})	-.2850	.006	- (H2b)
GDP distance variance (γ_{060})	.0594	.012	- (H6)
Trad/Secular-rational dist. variance (γ_{070})	13.2001	.022	- (H3a)
Survival/Self dist. variance (γ_{080})	-10.6277	.008	- (H3b)
Moderating effect of experience:			
GDP distance: host country>COO x Years in market (γ_{110})	.1798**	.062	+ (H8c)
GDP distance: host country<COO x Years in market (γ_{120})	-.0205	.016	+ (H8c)
Trad/Secular distance x Yrs in market (γ_{130})	.1098	.018	+ (H8a)
Survival/Self distance x Yrs in market (γ_{140})	.0993	.019	+ (H8b)
GDP dist. variance x Yrs in market (γ_{150})	-.0457	.037	+ (H9c)
Trad/Secular dist. var. x Yrs in mkt (γ_{160})	-9.9070**	.042	+ (H9a)
Survival/Self dist. var. x Yrs in mkt (γ_{170})	18.9900**	.049	+ (H9b)
Variance (%)			
Within firms across time	18.3%		
Among firms within countries	50.4%		
Among countries	31.3%		
Log likelihood	3,233.4		

*** $p < .01$; ** $p < .05$; * $p < .10$.

^aTest of significance is based on one-tailed test.

N=835

The effect sizes allow us to compare the magnitudes of effects across levels of aggregation. The average relative effect size is .048. The predictors with relative effect sizes greater than average are those for years in the market, GDP per capita, traditional/secular-rational values, survival/self-expressive values, GDP distance when the GDP per capita of the host country is greater than that of the country of origin, the interaction of that variable with years in the market, and finally, the interaction of survival/self-expressive distance variance with years in the market.

As expected (*H7*), the relationship between a firm's years in the market and its ability to satisfy the customer is positive and significant ($\gamma_{100} = 1.6322$ $p < .01$). With respect to cultural values, contrary to the hypothesis that firms experience greater success in satisfying consumers in secular-rational societies, the results indicate a negative relationship between secular-rational societies and customer satisfaction ($\gamma_{500} = -2.3021$; $p < .01$). However, as proposed in *H1b*, the results indicate that firms experience less success in satisfying consumers in self-expressive societies ($\gamma_{600} = -3.4838$; $p < .01$). While the variance in cultural distance between the host country and the country of origin does not significantly affect a firm's ability to satisfy customers, a firm's years in the market negatively moderate the relationship between traditional/secular-rational distance variance and the firm's ability to satisfy consumers ($\gamma_{160} = -9.9070$; $p < .05$). This finding is contrary to hypothesis 9a. Hypothesis 9b is supported, as years in the market have a positive moderating effect on the relationship between survival/self-expressive distance variance and the firm's ability to satisfy consumers ($\gamma_{170} = 18.9900$; $p < .05$).

With respect to the effect of a nation's level of economic prosperity, firms experience greater success in satisfying consumers in nations with high GDP (*H4*; $\gamma_{400} = .2610$; $p < .01$).

When evaluating the effects of economic distance, the results indicate that firms experience less success in satisfying consumers if the GDP of the host country is greater than that of the firm's country of origin ($H5a$; $\gamma_{020} = -.8618$; $p < .01$). This relationship is positively moderated by years of experience in the market ($H8c$; $\gamma_{110} = .1798$; $p < .05$). The effect of variance in economic differences between the host country and country of origin is not found to be significant.

Lastly, the results associated with the control variables are reported. As expected, firms experience less success in satisfying consumers in nations with a high level of education ($H10$; $\gamma_{300} = -.0981$; $p < .05$). The hypothesis that firms experience less success in satisfying consumers through service interactions than with traditional consumer products is not supported.

4.6 Discussion

This essay examined the extent to which experience in the market has a positive effect on a firm's ability to satisfy the customer. It also explored whether experience can help a MNC to overcome cultural and economic differences between their country of origin and the host country, as well as adapt to volatility in those differences. This analysis shows that years of experience in the market have a positive, yet diminishing effect on a firm's ability to satisfy the customer. However, the results are mixed with respect to whether experience helps a MNC to overcome cultural and economic differences between the country of origin and the host country, and cope with volatility of these differences.

With respect to economic differences between the home and host countries, the results indicate that economic distance has a negative effect on a firm's ability to satisfy

consumers when the GDP per capita of the host country is greater than that of the country of origin. However, market experience has a positive moderating effect on this relationship.

With respect to volatility of between-country differences, the results indicate that years of market experience do indeed have a significant moderating effect on the relationship between the volatility of cultural distance and a firm's ability to satisfy consumers. As expected, the results indicate that market experience has a positive moderating effect on the relationship between survival/self-expressive distance variance and the firm's ability to satisfy consumers. However, market experience has a negative effect on the relationship between traditional/secular-rational distance variance and a firm's ability to satisfy consumers. As a post-hoc explanation, I propose that there may be little experiential learning taking place in a secular-rational market. Since production is standardized and there is little reward for customization in secular-rational societies, a firm will not necessarily become more adaptive even with additional time and experience in the market. Thus, if a firm does not have the incentive to innovate and experiment in the marketplace, they may find themselves in a stable equilibrium (March 2006), and ill-equipped to anticipate the changing needs of customers.

The finding that firms experience less success satisfying consumers in secular-rational societies is also surprising. As a post hoc explanation, it may be the case that while it is easier for the firm to respond to mass, standardized needs, it is harder for the firm to provide superior levels of satisfaction and to delight these customers. Further exploration is needed to evaluate the drivers of customer satisfaction, including customer expectations and perceived value, in order to provide some insight as to why it is harder to satisfy these customers.

In summary, the conceptual model is broadly supported, as the findings of this study support the value of accounting for a firm's experience in the market. More specifically, the results show that the relationship between the volatility of country differences and the firm's ability to satisfy the customer is significantly moderated by the firm's degree of experience in the market. Additionally, the findings underscore the importance of controlling for firm-level characteristics when conducting a cross-national analysis of customer satisfaction, given that more than half of the variance in this analysis (50.4%) occurs across firms, within countries.

The results of this analysis have important implications for managers that are responsible for expansion into international markets. Though the effect size is modest, the results suggest that satisfaction with a MNC's products or services is lower in host countries with a GDP that is greater than or equal to that of the firm's country of origin. It may also be noted that customer satisfaction is expected to increase as the firm gains experience in the market, which should provide encouragement to a manager that is entering a new market. These findings also indicate that it is in a manager's best interest to devote resources toward the growth of a firm's adaptive intelligence and organizational knowledge, even if market preferences appear relatively stagnant, as in secular-rational societies. Though adaptive intelligence should increase organically with years of experience, the firm may benefit from taking deliberate steps to cultivate adaptive intelligence. By doing so, they may enhance their ability to provide value to consumers, even in a diverse cultural landscape characterized by volatility and uncertainty.

4.7 Future Research

This study suffers from several limitations which present opportunities for future research. First, this research does not control for industry-specific effects, since the data span so many different industries. By focusing on a specific industry, it would be more feasible to control for country image effects, which could potentially impart halo effects (Han 1989). Additionally, focusing on a smaller set of firms would allow the researcher to include a measure of each firm's past experience in other countries that are more similar to the country of interest than the firm's home country. Thus, one could control for each firm's level of near-market knowledge (Gielens and Dekimpe 2007) to gain additional insight with regard to the effects of market experience. Lastly, future research could control for a firm's entry mode (i.e. joint venture, etc.) into international markets.

In sum, this research shows that market familiarity and experience can help a firm to overcome psychic distance. Thus, by showing how distance between the home and host markets affects customer satisfaction, and how it may be moderated by experience, this research may help managers of multinational firms gain a better understanding of the dynamics of international customer satisfaction.

Appendix A

ACSI Model and Methodology*

**The following is a verbatim excerpt from “The American Satisfaction Index: Nature, Purpose, and Findings” (Fornell et al. 1996)*

ACSI Methodology

For each firm, approximately 250 interviews were conducted with the firm’s current customers. Interviews came from 48 replicate national probability samples of households in the continental United States with telephones (95% of households). Prospective respondents (selected without substitution from the household by the “nearest birthday” method) were screened to identify purchasers of specific goods or services within defined purchase and consumption time periods. These periods vary from three years for the purchase of a major durable, to “within the past month” for frequently purchased consumer goods and services, to currently having a bank account or insurance policy in the person’s own name.

Once a respondent was identified as a customer, the interviewer proceeded with the customer satisfaction questionnaire. Each questionnaire contains the same 17 structured questions and 8 demographic questions. Lead-in wording and examples were tailored to specific goods and services.

Customer expectations were measured by asking respondents to think back and remember the level of quality they expected on the basis of their knowledge and experience with a good or service.¹⁴ Three expectation measures were collected: (1) overall expectations, (2) expectations regarding customization, and (3) expectations regarding reliability. Customers then rated their recent experience with the good or service by using three measures: (1) overall perceived quality, (2) perceived customization, and (3) perceived reliability. Two questions then tapped perceived value, quality relative to price, and price relative to quality.

Overall customer satisfaction (ACSI) was operationalized through three survey measures: (1) an overall rating of satisfaction, (2) the degree to which performance falls short of or exceeds expectations, and (3) a rating of performance relative to the customer’s ideal good or service in the category. Whereas the latter are commonly used as antecedents in models of transaction-specific satisfaction (Oliver 1980; Yi 1991), their use as reflective indicators of overall customer satisfaction is consistent with the cumulative nature of ACSI, because each measure represents a qualitatively different benchmark customers use in making cumulative evaluations, such as overall customer satisfaction (ACSI). Moreover, the latent variable methodology employed to estimate overall customer satisfaction only extracts shared variance, or that portion of each measure that is common to all three questions and related to the ACSI construct’s position in the model’s chain of cause and effect. Thus, satisfaction is not confounded by either disconfirmation or comparison to an ideal. Only the psychological distance between performance and expectations, and between performance and the customer’s ideal point, was used to estimate overall customer satisfaction (ACSI).

Customer complaints were measured by whether a customer had complained either formally (as in writing or by phone to a manufacturer) or informally (as to service personnel

¹⁴ Although such post hoc measures of expectations are imperfect, the cost of obtaining expectations prior to purchase is prohibitive in a study of this magnitude.

or a retailer). In addition, there were two measures of customer loyalty. The first was repurchase likelihood. The second measure was constructed from two survey variables: the degree to which a firm could raise its prices as a percentage before the customer would definitely not choose to buy from that firm again the next time (given that the customer has indicated he or she is likely to repurchase) and the degree to which a firm could lower its prices as a percentage before the customer would definitely choose again from that firm the next time (given that the customer has indicated he or she is unlikely to repurchase).

Scales and Model Estimation

The frequency distribution of satisfaction and quality ratings is always negatively skewed in competitive markets (Fornell 1995). To reduce the statistical problems of extreme skewness, the ACSI uses 10-point (versus 5- or 7-point) rating scales to enable customers to make better discriminations (Andrews 1984). The use of multiple indicators also reduces skewness (Fornell 1992). A version of partial least squares (PLS) is used to estimate the model (Wold 1989). Partial least squares is an iterative procedure for estimating causal models, which does not impose distributional assumptions on the data, and accommodates continuous as well as categorical variables. Because of the model structure, PLS estimates weights for the survey measures that maximize their ability to explain customer loyalty as the ultimate endogenous or dependent variable. The estimated weights are used to construct index values (transformed to a 0- to 100-point scale) for ACSI and the other model constructs.

Appendix B
Products and Services firms included in the dataset

Products		Services	
Adidas	Oldsmobile	Allstate	Southwest Airlines
Apple	Pepsi	American Airlines	Supervalu
BMW	Pontiac	American Electric Power	Taco Bell
Buick	Procter & Gamble	Bank of America	United Airlines
Busch	Quaker	Burger King	State Farm Insurance
Cadillac	Sara Lee	CMS Energy	United Airlines
Chevrolet	Saturn	Consolidated Edison	UPS
Chrysler	Toyota	Continental	US Airways
Clorox	Tyson	Delta	USPS
Coke	Unilever	Dillards	Wal-Mart
Colgate	VF (clothing)	Dominion Resources	Wells Fargo
ConAgra	Volkswagen	Domino's Pizza	Wendy's
Dell	Volvo	Duke Energy	Winn Dixie
Dial	Whirlpool	Energy Future Holdings	
Dodge		Entergy	
Ford		Farmers	
Gateway		FedEx	
GE Appliances		FPL Group	
General Mills		Hilton Hotels	
GMC		Holiday Inn	
Hanes		JC Penney	
Heinz		KFC	
Hershey		Kroger	
Honda		Macy's	
Hewlett Packard		Marriott	
Jeep		MetLife	
Kellogg		New York Life Insurance	
Kraft		Northeast Utilities	
Levi Straus		Northwest Airlines	
Lincoln Mercury		PG&E	
Liz Claiborne		Pizza Hut	
Maytag		Prudential Financial	
Mazda		Publix	
Mercedes-Benz		Ramada	
Nestle		Safeway	
Nike		Sears	
Nissan		Southern Company	

Appendix C

Descriptive Statistics by Firm

The minimums, maximums, and means for each variable are taken from 1994-2008. For advertising effectiveness, underadvertising is denoted by (-) and overadvertising is denoted by (+).

American Airlines	Min	Max	Mean
ACSI	60	71	64.93
Advertising effort	0.32%	0.80%	0.56%
Tobin's q	.47	1.17	.76
Advertising effectiveness	-9.95E+37%	-9.95E+37%	-9.95E+37%
Advertising efficiency	.908	.994	.955

American Electric Power	Min	Max	Mean
ACSI	73	82	76.6
Advertising effort	.00%	.12%	.04%
Tobin's q	.70	1.27	1.01
Advertising effectiveness	-.47%	-.35%	-.43%
Advertising efficiency	.945	.993	.971

Apple	Min	Max	Mean
ACSI	69	85	76.40
Advertising effort	.47%	3.83%	2.36%
Tobin's q	.59	6.90	2.36
Advertising effectiveness	-3.25%	+.11%	-1.35%
Advertising efficiency	.882	.994	.949

Bank of America	Min	Max	Mean
ACSI	61	74	68.36
Advertising effort	.13%	1.09%	.78%
Tobin's q	.50	.67	.61
Advertising effectiveness	-1,101,276%	-1,101,275%	-1,101,275%
Advertising efficiency	.881	.988	.963

Buick	Min	Max	Mean
ACSI	83	86	84.67
Advertising effort	.02%	.24%	.09%
Tobin's q	.88	1.08	.99
Advertising effectiveness	-.03%	+.19%	.05%
Advertising efficiency	.958	.980	.972

Burger King	Min	Max	Mean
ACSI	64	71	67.50
Advertising effort	16.54%	18.75%	17.98%
Tobin's q	1.75	2.20	1.94
Advertising effectiveness	+16.54%	+18.75%	+17.98%
Advertising efficiency	.963	.979	.971

Busch	Min	Max	Mean
ACSI	78	84	80.93
Advertising effort	2.06%	4.47%	3.37%
Tobin's q	1.90	3.92	3.07
Advertising effectiveness	-303.03%	-300.62%	-301.72%
Advertising efficiency	.948	.988	.971

Cadillac	Min	Max	Mean
ACSI	83	88	85.64
Advertising effort	.04%	.15%	.09%
Tobin's q	.88	1.08	.99
Advertising effectiveness	+.04%	+.15%	+.08%
Advertising efficiency	.953	.987	.973

Chevrolet	Min	Max	Mean
ACSI	76	82	78.67
Advertising effort	.10%	.27%	.17%
Tobin's q	.88	1.08	.99
Advertising effectiveness	+.09%	+.27%	+.16%
Advertising efficiency	.949	.989	.972

Chrysler	Min	Max	Mean
ACSI	78	82	80.07
Advertising effort	.19%	.24%	.23%
Tobin's q	.73	.79	.76
Advertising effectiveness	+.18%	+.24%	+.22%
Advertising efficiency	.971	.983	.975

Clorox	Min	Max	Mean
ACSI	83	88	85.93
Advertising effort	3.08%	13.33%	9.41%
Tobin's q	2.12	4.64	3.07
Advertising effectiveness	-176.76%	-166.50%	-170.42%
Advertising efficiency	.950	.986	.972

CMS Energy	Min	Max	Mean
ACSI	71	79	75.00
Advertising effort	.00%	.01%	.00%
Tobin's q	.69	1.22	.93
Advertising effectiveness	-.01%	.00%	-.01%
Advertising efficiency	.928	.987	.968

Coke	Min	Max	Mean
ACSI	81	87	84.00
Advertising effort	3.90%	6.15%	4.85%
Tobin's q	3.76	10.34	6.28
Advertising effectiveness	-2,430%	-2,428%	-2,429%
Advertising efficiency	.947	.987	.971

Colgate	Min	Max	Mean
ACSI	80	87	82.80
Advertising effort	3.32%	5.03%	4.20%
Tobin's q	1.97	5.57	4.13
Advertising effectiveness	-6,186%	-6,184%	-6,185%
Advertising efficiency	.949	.988	.968

Con Agra	Min	Max	Mean
ACSI	80	86	82.40
Advertising effort	.33%	1.38%	.64%
Tobin's q	1.36	2.07	1.69
Advertising effectiveness	+.33%	+1.38%	+.64%
Advertising efficiency	.954	.989	.971

Consolidated Edison	Min	Max	Mean
ACSI	66	77	70.80
Advertising effort	.01%	.11%	.05%
Tobin's q	.90	1.58	1.18
Advertising effectiveness	-4,680,868,442%	-4,680,868,442%	-4,680,868,442%
Advertising efficiency	.922	.992	.961

Continental	Min	Max	Mean
ACSI	62	70	66.07
Advertising effort	.23%	.54%	.33%
Tobin's q	.65	1.07	.84
Advertising effectiveness	-53,490,450%	-53,490,450%	-53,490,450%
Advertising efficiency	.921	.990	.964

Dell	Min	Max	Mean
ACSI	72	80	76.17
Advertising effort	.88%	2.15%	1.52%
Tobin's q	1.97	13.60	5.72
Advertising effectiveness	+.87%	+2.14%	+1.52%
Advertising efficiency	.931	.990	.968

Delta	Min	Max	Mean
ACSI	59	77	66.20
Advertising effort	.19%	.50%	.37%
Tobin's q	.62	1.16	.84
Advertising effectiveness	-3.9E+22%	-3.9E+22%	-3.9E+22%
Advertising efficiency	.898	.992	.958

Dial	Min	Max	Mean
ACSI	79	86	83.93
Advertising effort	2.22%	3.58%	2.88%
Tobin's q	1.44	3.25	2.44
Advertising effectiveness	-184,484%	-184,482%	-184,483%
Advertising efficiency	.933	.982	.969

Dillards	Min	Max	Mean
ACSI	68	77	74.07
Advertising effort	.12%	2.57%	1.63%
Tobin's q	.85	1.42	1.10
Advertising effectiveness	-1.07%	+1.38%	+.44%
Advertising efficiency	.908	.987	.970

Dodge	Min	Max	Mean
ACSI	75	81	77.80
Advertising effort	.24%	.29%	.26%
Tobin's q	.73	.79	.76
Advertising effectiveness	-3.43%	-3.38%	-3.41%
Advertising efficiency	.972	.973	.972

Dominion Resources	Min	Max	Mean
ACSI	65	75	72.13
Advertising effort	.01%	.37%	.11%
Tobin's q	1.09	1.33	1.18
Advertising effectiveness	+.01%	+.37%	+.11%
Advertising efficiency	.895	.988	.964

Domino's Pizza	Min	Max	Mean
ACSI	67	75	71.29
Advertising effort	8.07%	9.72%	9.00%
Tobin's q	1.01	5.09	3.10
Advertising effectiveness	+7.82%	+9.47%	+8.75%
Advertising efficiency	.943	.980	.969

Duke Energy	Min	Max	Mean
ACSI	76	83	79.13
Advertising effort	.00%	.004%	.001%
Tobin's q	.91	1.46	1.16
Advertising effectiveness	-.06%	-.03%	-.05%
Advertising efficiency	.947	.988	.971

Energy Future Holdings	Min	Max	Mean
ACSI	63	77	72.13
Advertising effort	.01%	.19%	.10%
Tobin's q	1.01	2.76	1.87
Advertising effectiveness	-.01%	+.17%	+.09%
Advertising efficiency	.903	.990	.952

Entergy	Min	Max	Mean
ACSI	69	76	72.53
Advertising effort	.01%	.02%	.01%
Tobin's q	.86	1.22	.98
Advertising effectiveness	-1.27%	-1.25%	-1.26%
Advertising efficiency	.936	.990	.966

FedEx	Min	Max	Mean
ACSI	80	86	83.47
Advertising effort	.46%	.81%	.64%
Tobin's q	1.23	3.06	1.73
Advertising effectiveness	+.46%	+.81%	+.64%
Advertising efficiency	.950	.988	.973

Ford	Min	Max	Mean
ACSI	75	80	77.60
Advertising effort	.09%	.29%	.18%
Tobin's q	.71	1.11	.87
Advertising effectiveness	-.73%	-.53%	-.64%
Advertising efficiency	.944	.985	.970

FPL Group	Min	Max	Mean
ACSI	68	77	73.73
Advertising effort	.01%	.09%	.05%
Tobin's q	1.08	1.60	1.30
Advertising effectiveness	-1.9E+19%	-1.9E+19%	-1.9E+19%
Advertising efficiency	.910	.988	.964

Gateway	Min	Max	Mean
ACSI	69	78	73.64
Advertising effort	1.23%	4.13%	3.06%
Tobin's q	.61	6.15	1.96
Advertising effectiveness	+1.22%	+4.12%	+3.06%
Advertising efficiency	.917	.990	.964

GE	Min	Max	Mean
ACSI	78	84	81.07
Advertising effort	.01%	.05%	.03%
Tobin's q	.56	1.65	1.05
Advertising effectiveness	+.01%	+.04%	+.02%
Advertising efficiency	.952	.988	.975

General Mills	Min	Max	Mean
ACSI	81	86	82.80
Advertising effort	4.30%	9.30%	6.80%
Tobin's q	1.63	3.55	2.53
Advertising effectiveness	-134.79%	-129.79%	-132.29%
Advertising efficiency	.960	.988	.973

GMC	Min	Max	Mean
ACSI	78	83	80.92
Advertising effort	.08%	.44%	.21%
Tobin's q	.88	1.08	.99
Advertising effectiveness	-.02%	+.34%	+.12%
Advertising efficiency	.951	.984	.973

Hanes	Min	Max	Mean
ACSI	75	83	79.27
Advertising effort	2.09%	2.55%	2.32%
Tobin's q	.97	1.43	1.20
Advertising effectiveness	-52,229%	-52,228%	-52,229%
Advertising efficiency	.967	.980	.974

Heinz	Min	Max	Mean
ACSI	85	91	88.33
Advertising effort	.45%	1.31%	.70%
Tobin's q	1.75	2.99	2.17
Advertising effectiveness	-3.3E+24%	-3.3E+24%	-3.3E+24%
Advertising efficiency	.948	.987	.972

Hershey	Min	Max	Mean
ACSI	84	88	86.00
Advertising effort	1.92%	4.23%	3.16%
Tobin's q	2.11	4.25	3.12
Advertising effectiveness	-1,707,863%	1,707,861%	1,707,862%
Advertising efficiency	.956	.983	.972

Hewlett Packard	Min	Max	Mean
ACSI	70	80	74.13
Advertising effort	.53%	2.05%	1.44%
Tobin's q	1.26	3.74	2.00
Advertising effectiveness	+.53%	+2.05%	+1.44%
Advertising efficiency	.927	.993	.964

Hilton Hotels	Min	Max	Mean
ACSI	72	78	75.47
Advertising effort	.48%	2.09%	1.15%
Tobin's q	1.19	2.11	1.55
Advertising effectiveness	-5.63%	-4.03%	-4.97%
Advertising efficiency	.942	.987	.970

Holiday Inn	Min	Max	Mean
ACSI	68	73	70.33
Advertising effort	2.86%	8.22%	5.73%
Tobin's q	1.30	3.04	1.76
Advertising effectiveness	+2.86%	+8.22%	+5.73%
Advertising efficiency	.941	.987	.970

Honda	Min	Max	Mean
ACSI	81	86	83.73
Advertising effort	.39%	.92%	.67%
Tobin's q	1.03	3.62	1.45
Advertising effectiveness	+.39%	+.92%	+.67%
Advertising efficiency	.949	.986	.969

JC Penney	Min	Max	Mean
ACSI	74	79	76.40
Advertising effort	.46%	4.85%	1.90%
Tobin's q	.83	1.97	1.17
Advertising effectiveness	-.29%	+4.10%	+1.15%
Advertising efficiency	.946	.987	.970

Jeep	Min	Max	Mean
ACSI	74	79	76.73
Advertising effort	.26%	.34%	.29%
Tobin's q	.73	.79	.76
Advertising effectiveness	-17.18%	-17.09%	-17.15%
Advertising efficiency	.954	.980	.969

Kellogg	Min	Max	Mean
ACSI	81	85	82.80
Advertising effort	3.47%	11.13%	6.77%
Tobin's q	1.89	4.80	2.96
Advertising effectiveness	-1,171.61%	-1,163.95	-1,168.31%
Advertising efficiency	.958	.986	.972

KFC	Min	Max	Mean
ACSI	63	71	67.64
Advertising effort	3.84%	8.02%	4.72%
Tobin's q	1.63	3.30	2.52
Advertising effectiveness	+3.84%	+8.02%	+4.72%
Advertising efficiency	.913	.988	.962

Kraft	Min	Max	Mean
ACSI	81	86	83.50
Advertising effort	3.65%	6.47%	4.35%
Tobin's q	1.48	1.91	1.70
Advertising effectiveness	-811.38%	-808.56%	-810.68%
Advertising efficiency	.955	.987	.974

Kroger	Min	Max	Mean
ACSI	71	78	74.40
Advertising effort	.12%	.39%	.21%
Tobin's q	1.33	3.08	1.73
Advertising effectiveness	-102.43%	-102.15%	-102.34%
Advertising efficiency	.939	.990	.970

Lincoln Mercury	Min	Max	Mean
ACSI	79	86	82.80
Advertising effort	.00%	.02%	.01%
Tobin's q	.71	1.11	.87
Advertising effectiveness	-.02%	+.01%	-.01%
Advertising efficiency	.949	.987	.972

Liz Claiborne	Min	Max	Mean
ACSI	76	84	79.27
Advertising effort	.25%	1.20%	.88%
Tobin's q	.74	2.57	1.95
Advertising effectiveness	+.25%	+1.20%	+.88%
Advertising efficiency	.945	.986	.971

Macy's	Min	Max	Mean
ACSI	66	75	70.93
Advertising effort	.48%	6.41%	3.64%
Tobin's q	.94	1.47	1.19
Advertising effectiveness	+.43%	+6.36%	+3.59%
Advertising efficiency	.920	.990	.963

Marriott	Min	Max	Mean
ACSI	74	80	76.60
Advertising effort	.36%	1.17%	.80%
Tobin's q	1.38	2.73	1.93
Advertising effectiveness	-54.93%	-54.12%	-54.49%
Advertising efficiency	.951	.987	.972

Maytag	Min	Max	Mean
ACSI	81	87	83.67
Advertising effort	.34%	1.20%	.76%
Tobin's q	.80	2.59	1.39
Advertising effectiveness	+.34%	+1.20%	+.76%
Advertising efficiency	.952	.988	.970

Mercedes-Benz	Min	Max	Mean
ACSI	80	87	84.20
Advertising effort	.06%	.46%	.16%
Tobin's q	.51	1.01	.69
Advertising effectiveness	+.03%	+.43%	+.13%
Advertising efficiency	.936	.987	.967

MetLife	Min	Max	Mean
ACSI	71	78	75.29
Advertising effort	.22%	.53%	.40%
Tobin's q	.00	.01	.01
Advertising effectiveness	-144.32%	-144.01%	-144.14%
Advertising efficiency	.926	.985	.967

Nestle	Min	Max	Mean
ACSI	81	88	83.47
Advertising effort	1.57%	3.57%	2.43%
Tobin's q	1.70	2.76	2.12
Advertising effectiveness	-12,297,142%	-12,297,140%	-12,297,141%
Advertising efficiency	.951	.986	.969

Nike	Min	Max	Mean
ACSI	72	82	75.93
Advertising effort	2.46%	4.51%	3.71%
Tobin's q	2.25	5.03	3.07
Advertising effectiveness	+2.45%	+4.51%	+3.70%
Advertising efficiency	.935	.985	.965

Nissan	Min	Max	Mean
ACSI	77	83	80.00
Advertising effort	.37%	1.28%	.77%
Tobin's q	.58	1.12	.87
Advertising effectiveness	+.37%	+1.28%	+.76%
Advertising efficiency	.948	.985	.971

Northeast Utilities	Min	Max	Mean
ACSI	65	76	70.40
Advertising effort	.00%	.07%	.02%
Tobin's q	.76	1.06	.84
Advertising effectiveness	.00%	+.07%	+.02%
Advertising efficiency	.898	.991	.958

Northwest Airlines	Min	Max	Mean
ACSI	53	71	62.73
Advertising effort	.16%	.75%	.42%
Tobin's q	.49	.96	.72
Advertising effectiveness	-12,508,200%	-12,508,200%	-12,508,200%
Advertising efficiency	.830	.995	.947

Oldsmobile	Min	Max	Mean
ACSI	80	84	81.55
Advertising effort	.07%	.16%	.10%
Tobin's q	.88	1.02	.97
Advertising effectiveness	+.04%	+.14%	+.07%
Advertising efficiency	.956	.984	.971

Pepsi	Min	Max	Mean
ACSI	82	87	84.27
Advertising effort	1.53%	5.02%	3.41%
Tobin's q	1.84	4.48	3.46
Advertising effectiveness	-10,704%	-10,700%	-10,702%
Advertising efficiency	.953	.987	.971

PG&E	Min	Max	Mean
ACSI	49	73	67.67
Advertising effort	.01%	.16%	.06%
Tobin's q	.43	1.08	.83
Advertising effectiveness	-1.2E+11%	-1.2E+11%	-1.2E+11%
Advertising efficiency	.740	.992	.949

Pizza Hut	Min	Max	Mean
ACSI	63	76	70.64
Advertising effort	2.00%	3.71%	2.90%
Tobin's q	1.63	3.30	2.52
Advertising effectiveness	+2.00%	+3.71%	+2.90%
Advertising efficiency	.936	.991	.971

Pontiac	Min	Max	Mean
ACSI	76	80	78.20
Advertising effort	.03%	.16%	.09%
Tobin's q	.88	1.08	.99
Advertising effectiveness	-.37%	-.24%	-.31%
Advertising efficiency	.951	.982	.971

Procter & Gamble	Min	Max	Mean
ACSI	81	87	83.73
Advertising effort	7.89%	12.49%	9.54%
Tobin's q	2.23	5.15	3.26
Advertising effectiveness	-204.14%	-199.54%	-202.49%
Advertising efficiency	.952	.989	.972

Prudential Financial	Min	Max	Mean
ACSI	68	79	73.20
Advertising effort	.29%	.48%	.36%
Tobin's q	.17	.31	.25
Advertising effectiveness	-247.73%	-247.53%	-247.65%
Advertising efficiency	.934	.988	.966

Publix	Min	Max	Mean
ACSI	77	83	81.00
Advertising effort	.16%	.26%	.21%
Tobin's q	1.73	28.04	7.41
Advertising effectiveness	+.14%	+.24%	+.19%
Advertising efficiency	.939	.985	.973

Quaker	Min	Max	Mean
ACSI	82	88	85.14
Advertising effort	2.92%	9.64%	5.42%
Tobin's q	1.61	5.77	3.35
Advertising effectiveness	-35,327%	-35,321%	-35,325%
Advertising efficiency	.960	.983	.969

Safeway	Min	Max	Mean
ACSI	70	76	72.87
Advertising effort	.17%	.51%	.35%
Tobin's q	1.42	3.52	2.01
Advertising effectiveness	-452,950%	-452,949%	-452,950%
Advertising efficiency	.943	.988	.968

Sara Lee	Min	Max	Mean
ACSI	80	86	82.60
Advertising effort	.42%	1.42%	.77%
Tobin's q	1.37	2.77	1.98
Advertising effectiveness	+.42%	+1.42%	+.77%
Advertising efficiency	.953	.988	.972

Saturn	Min	Max	Mean
ACSI	80	85	81.8
Advertising effort	.04%	.21%	.11%
Tobin's q	.88	1.08	.99
Advertising effectiveness	-.02%	+.15%	+.05%
Advertising efficiency	.956	.988	.971

Sears	Min	Max	Mean
ACSI	71	76	73.27
Advertising effort	1.00%	3.45%	2.24%
Tobin's q	.18	1.38	1.00
Advertising effectiveness	+1.00%	+3.45%	+2.24%
Advertising efficiency	.946	.986	.970

Southern Company	Min	Max	Mean
ACSI	76	82	79.47
Advertising effort	.02%	.22%	.11%
Tobin's q	1.13	1.44	1.26
Advertising effectiveness	+.01%	+.21%	+.11%
Advertising efficiency	.938	.985	.969

Southwest	Min	Max	Mean
ACSI	70	79	74.47
Advertising effort	1.48%	2.44%	1.95%
Tobin's q	1.04	3.25	1.83
Advertising effectiveness	+1.48%	+2.44%	+1.95%
Advertising efficiency	.926	.992	.966

Supervalu	Min	Max	Mean
ACSI	74	77	75.60
Advertising effort	.10%	.63%	.37%
Tobin's q	.95	1.62	1.30
Advertising effectiveness	+.10%	+.63%	+.37%
Advertising efficiency	.958	.983	.971

Taco Bell	Min	Max	Mean
ACSI	63	72	67.00
Advertising effort	2.52%	3.58%	3.27%
Tobin's q	1.63	3.30	2.52
Advertising effectiveness	+2.52%	+3.58%	+3.27%
Advertising efficiency	.917	.991	.963

Toyota	Min	Max	Mean
ACSI	82	87	84.47
Advertising effort	.24%	.79%	.50%
Tobin's q	.94	1.76	1.31
Advertising effectiveness	+.24%	+.79%	+.50%
Advertising efficiency	.953	.987	.972

Tyson	Min	Max	Mean
ACSI	78	83	79.73
Advertising effort	.13%	.54%	.23%
Tobin's q	1.17	1.81	1.43
Advertising effectiveness	-.10%	+.32%	+.01%
Advertising efficiency	.963	.984	.974

Unilever	Min	Max	Mean
ACSI	81	87	84.00
Advertising effort	2.61%	3.69%	3.19%
Tobin's q	2.18	3.78	2.87
Advertising effectiveness	-274,253%	-274,252%	-274,252%
Advertising efficiency	.954	.986	.972

United Airlines	Min	Max	Mean
ACSI	56	71	63.40
Advertising effort	0.00%	0.00%	0.00%
Tobin's q	.46	.78	.63
Advertising effectiveness	-1.8E+64%	-1.8E+64%	-1.8E+64%
Advertising efficiency	.873	.994	.946

United Parcel Service	Min	Max	Mean
ACSI	77	87	81.13
Advertising effort	.30%	.64%	.46%
Tobin's q	2.15	3.95	3.05
Advertising effectiveness	+.30%	+.64%	+.46%
Advertising efficiency	.942	.982	.964

US Airways	Min	Max	Mean
ACSI	54	72	62.93
Advertising effort	.12%	1.51%	.73%
Tobin's q	.56	1.28	.94
Advertising effectiveness	-947,858%	-947,857%	-947,858%
Advertising efficiency	.857	.993	.952

VF	Min	Max	Mean
ACSI	78	84	81.53
Advertising effort	1.21%	2.77%	1.83%
Tobin's q	1.58	2.40	1.84
Advertising effectiveness	-187.735%	-187,734%	-187,735%
Advertising efficiency	.944	.987	.971

Volkswagen	Min	Max	Mean
ACSI	74	83	78.93
Advertising effort	.49%	1.52%	1.06%
Tobin's q	.45	.74	.57
Advertising effectiveness	+.49%	+1.51%	+1.06%
Advertising efficiency	.940	.986	.967

Volvo	Min	Max	Mean
ACSI	80	84	81.83
Advertising effort	.24%	2.53%	1.17%
Tobin's q	.77	1.08	.94
Advertising effectiveness	-.11%	+2.18%	+.82%
Advertising efficiency	.956	.985	.972

Wal-Mart	Min	Max	Mean
ACSI	68	81	74.00
Advertising effort	0.11%	0.29%	0.21%
Tobin's q	2.04	5.29	3.01
Advertising effectiveness	+.11%	+.29%	+.21%
Advertising efficiency	.904	.994	.961

Wells Fargo	Min	Max	Mean
ACSI	62	72	67.86
Advertising effort	6.36%	12.20%	9.62%
Tobin's q	.47	.69	.60
Advertising effectiveness	+6.36%	+12.20%	+9.62%
Advertising efficiency	.923	.988	.965

Wendy's	Min	Max	Mean
ACSI	69	78	72.93
Advertising effort	9.05%	14.78%	11.79%
Tobin's q	1.98	2.63	2.21
Advertising effectiveness	+8.95%	+14.67%	+11.69%
Advertising efficiency	.929	.992	.966

Whirlpool	Min	Max	Mean
ACSI	80	87	83.27
Advertising effort	.22%	.58%	.37%
Tobin's q	.34	1.23	.97
Advertising effectiveness	+.22%	+.58%	+.37%
Advertising efficiency	.950	.988	.973

Winn Dixie	Min	Max	Mean
ACSI	71	76	73.47
Advertising effort	.10%	.30%	.20%
Tobin's q	.21	3.06	1.69
Advertising effectiveness	-859,448%	-859,448%	-859,448%
Advertising efficiency	.947	.988	.971

Appendix D

Consumer packaged goods firms included in the dataset

Food Processing:

Campbell Soup Co.
ConAgra Foods, Inc.
Dole Food Company, Inc.
General Mills, Inc.
Hershey Foods Corporation
H.J. Heinz
Kellogg Company
Kraft Foods, Inc.
Nestlé S.A.
Pillsbury
The Quaker Oats Company
RJR Nabisco
Sara Lee Corporation
Tyson Foods, Inc.

Pet Foods:

Colgate-Palmolive Corporation (Hill's Pet Nutrition)
Nestlé S.A. (Purina)
The Procter & Gamble Company (Iams)
Ralston Purina

Beverages:

Cadbury Schweppes PLC
The Coca-Cola Company
PepsiCo Inc.

Personal Care and Cleaning Products:

The Clorox Company
Colgate-Palmolive Corporation
The Dial Corporation
The Procter & Gamble Company

Appendix E

Firms included in the dataset

CONSUMER PRODUCTS

Apparel

Adidas

Automobiles

BMW

Chevrolet

Fiat

Ford

Honda

Hyundai

Kyocera

Mazda

Mercedes

Nissan

Opel

Peugeot

Renault

Tan Chong Motor

Toyota

Volkswagen

Volvo

CPGs

Nestle

Unilever

Durables

Bosch

LG

Philips

Siemens

SERVICES

Banks/Financial

BBVA (bank)

BBVA (retirement)

BNP Paribas

BTA Bank

Citibank

Danske Bank

DNB NORD

Erste banka

GE Money Bank

Handelsbanken (bank)

Handelsbanken (mortgage)

HSBC (bank)

HSBC (credit card)

Hypo banka

ING

Maybank

Narodniy Bank

Nordea

Nordea Hypotek

Popular

ProCredit Bank

RBS Group (credit card)

RBS Group (mortgage)

RBS/ NatWest (bank)

RBS/ NatWest (mortgage)

Santander (bank)

Santander (mortgage)

Santander (retirement)

Scotia Bank

SEB

SEB hypotek

Skandia (retirement)

Skandiabanken

Standard Chartered

Swedbank (bank)

Swedbank (mortgage)

Swedbank/Hansabank

Delivery and Logistics

DHL
FedEx
UPS

Energy

Caltex
EON
ExxonMobil
Fortum
Shell
Vattenfall

Hospitals

Alexandra

Insurance

Aksigaorta
American Home Assurance
American International Assurance
ASKA
AXA
BTA
Chartis
Codan
Ergo
ERGO Lietuva
Gensidige
Gensidige/Nykredit
Gjensidige
If
If Eesti Kindustos
Manulife
Nordea (Tryg)
Prudential
Skandia
Swedbank Varakindlustus
Trygg Hansa
Volvo Insurance

Mobile and Broadband

Bee Line (cable and internet)
Bee Line (mobile)
Bite (mobile)
Bite (cable and internet)
Canal Digital
Elisa
Huawei
Motorola
Movistar
Nokia
O2 Telefonica
Orange
Samsung Broadband
Samsung Wireless
Sony Ericsson
Tele2 (internet)
Tele2 (mobile)
Telenor (internet)
Telenor (mobile)
Telia (cable)
Telia (internet)
TeliaSonera
T-mobile
Voldafone
ZTE

Recreation and Leisure

Burger King
Coffee Bean & Tea Leaf
Delifrance
Grand Hyatt
KFC
McDonalds
Pizza Hut
Shangri-La
Starbucks
The Ritz-Carlton

Retail

Amazon
Bauhaus
Carrefour
DFS
eBay
Gima
Hornbach
ICA
IKI
Isetan
iTunes
K-Rauta
Lidl
Migros
Play.com
Silvan
Sok
Takashimaya
Ticketmaster

Transport

Cathay Pacific
Emirates
GoByBus
Qantas

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