The
Competitive Market Structure of the U.S. Lodging Industry and its Impact on the Financial Performance of Hotel Brands

by

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ABSTRACT

The primary objective of this study was to explore the relationship among various market structure constructs (consisting of barriers to entry, competition, growth, and market share) and their potential impact on financial performance. By applying theoretical underpinnings from the disciplines of marketing, strategy and industrial organization economics, and adapting them to the unique characteristics of the U.S. lodging industry, the above constructs were linked to produce the Lodging Market Structure (LMS) Model. The study consisted of a cross-sectional analysis using a sample of 67 well-recognized hotel brands operating in the U.S. (representing 63 percent of the national guestroom inventory), covering a four-year period between 1996 and 1999. Correlation and multiple regression analysis were used to examine the hypothesized relationships within the LMS model. This study represented the first comprehensive investigation of the competitive market structure of the U.S. lodging industry.

The key findings of the study indicate that the financial performance of hotel brands in the Unite States is strongly impacted by competitive market structure. Among the various market structure constructs studied, barriers to entry played the most dominant role in determining the level of financial performance of hotel brands. Based on a strong negative relationship, barriers to entry are very effective in reducing competition in the U.S. lodging industry. Also, of the constructs studied, barriers to entry had the greatest influence on enhancing the market share of incumbent hotel brands. The growth rate of those incumbent brands has a positive relationship with barriers to entry. As competition intensifies, the growth rate of hotel brands slows down. Increases in competition are negatively correlated with a brand's market share. Competition has a strong negative relationship with the financial performance of hotel brands. Market share improves as the growth rate of hotel brands increases. As the growth rate of brands increases, profitability also improves. Likewise, improvements in a hotel brand's market share are positively related to increases in profitability. Lastly, the U.S. lodging market is becoming more competitive, and the industry has reached the mature stage of its lifecycle.

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CHAPTER I

Introduction

The objective of this study is to explore the relationship between various market structure constructs (consisting of barriers to entry, growth, competition, and market share) and their potential impact on the financial performance of branded hotels within the U.S. lodging industry. Interest in this topic was precipitated by the commentary of hotel industry trade press regarding the following trends:

a. Increases in industry profitability (Watkins, 2000, Ruggless, 2000)
b. Growth in brand size (number of hotels) (Cook, 1997; Frabotta, 2000; Lamanno, 2000)
c. Expanding competition (Sheridan, 1997; Andorka, 1997)

These trends began many years ago, but by the end of the last decade, they received widespread acknowledgment within the lodging industry (Singh, 1999). Each one of these trends is discussed in more detail below.

Prior to the terrorist attacks of September 11, 2001, on the World Trade Center and the Pentagon, the U.S. lodging industry achieved profits of $ 25.2 billion in the year 2000 – an all-time high (PriceWaterhouse Coopers, 2001; American Hotel & Lodging Association, 2001; Smith Travel Research, 2001). Prior to that, the industry also experienced record profits for five consecutive years (PriceWaterhouse Coopers, 2000; Bear Stearns, 2000). The hotel sector's profitability is a new record both in absolute dollars as well as in percentage terms. This increase in the profitability ratio, appears to be an indication of either increased financial or operating efficiency, or both. This makes for quite a remarkable turnaround considering that ten years ago, the lodging sector

experienced significant losses during the last major recession. Table 1 below illustrates the U.S. hotel industry's climb to record profitability.

Table 1. U.S. Lodging Industry Performance 1991-2000 (in billions $).

Year	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Industry Profits ($)	-2.8	0.0	2.4	5.5	8.5	12.5	17.0	20.9	22.6	25.2
Profit (%)	-4.6	0.0	3.8	8.2	12.1	16.1	19.9	21.9	22.0	22.8
M&A's ($)	.9	1.4	2.1	0.2	1.1	5.1	8.9	33.3	6.6	0.3
Brand Size avg. #rooms	13,804	13,746	13,823	14,100	14,217	13,849	13,881	14,201	14,372	14,838
Number of Brands	140	144	146	147	150	160	170	177	185	188

Source: Bear Stearns 2001, Smith Travel Research 2001, PriceWaterhouse Coopers 2001, American Hotel & Lodging Association, 2001. (M&A's–Mergers and Acquisitions)

Another major trend in the U.S. has been the increase in the average size of hotel brands (i.e. the number of hotels affiliated with a brand, and the number of rooms controlled by them). This growth has materialized in the form of additional hotel properties being added to these brands. Presently, some70 percent of the 47,000 properties, representing 2.7 million rooms in the United States are associated (owned, managed, affiliated or franchised) with a major brand (PriceWaterhouse Coopers, 2000; American Hotel & Lodging Association, 2000). Several authors believe that, over the last few decades, the American hotel sector has accelerated its steady evolution from an industry made up of small independent hotel owner-operators to a market dominated by major international brands, and institutional investors (PKF Consulting, 1993; DeRoos & Corgel, 1996; Rushmore, 1994; Ingram, 1994; Coopers and Lybrand, 1994; Smith & Lesure, 1999, Frabotta, 2000). According to industry publications, this growth is being fueled by a surge in brand affiliation and mergers and acquisitions (Mally, 1997; Ruggless, 2000). Much of the increase in brand affiliation can be attributed to the popularity of franchising with hotels under development and independent properties (Ingram, 1994; Hou, 1994; Rushmore, 1990). In addition, one outcome of all of this merger and acquisition activity has been the conversion of individual hotels and entire chains to create larger brands with sustainable critical mass.

Between 1992 and 2000, the mergers and acquisition transaction total amounted to$58.2 billion (Bear Stearns, 2001). Appendix A lists the major transactions that have occurred over the last eight years.

The third major observed trend has been the growth in competition within the U.S. lodging sector. One major indicator of the competitive intensity at the market-level is the number of hotel brands competing in the American market place. Presently there are more than 188 national and regional lodging brands operating across the country (Coopers & Lybrand, 1998; PriceWaterhouse Coopers, 2001; American Hotel & Lodging Association, 2001). This unprecedented total of brands has intensified competition to a great degree (Crawford-Welch, 1990; Murthy, 1994, Sheridan, 1997). Part of the explanation for this surge in the number of hotel brands is segmentation, the systematic development of distinct products and services, designed to appeal to different customer profiles (Crawford-Welch, 1990). However, in the process, this explosion of new brands has created a great deal of consumer confusion regarding brand identity, and perceived benefits (Yesawich, Pepperdine & Brown, 1998).

Looking at these broad trends, there appears to be several dynamics at work within the U.S. hotel industry. On the one hand, there is preliminary indication that the industry is consolidating via mergers and acquisitions activity, as well as brand affiliation. On the other hand, there is also evidence of its fragmentation based on segmentation and new brand creation, indicating that the industry is separating into more finite pieces. These colossal market forces appear to be at odds, and their relationship with swelling industry profits is also somewhat perplexing.

Though several industry observers have briefly raised questions about these types of issues within the broader context of the U.S. lodging market's competitive structure, little empirical analysis has been performed in this area of interest (Singh, 1999; Rowe, 1997). One related piece of research was a recent

qualitative study by Matovic and McCleary (2002). In that study, the authors conducted extensive interviews with hotel industry CEO's and senior executives of 15 major U.S. hotel firms regarding their perspectives on the competitive environment of the U.S. lodging industry. The consensus opinion of the industry leaders interviewed was that the U.S. accommodation market was in a mature stage with marginal growth opportunities, there were too many brands, competition was intensifying, attainment of market share was a priority, and the ongoing consolidation within the industry will continue for a number of years. Therefore, some of the hotel industry's top minds appear to be cognizant of the competitive state of the U.S. lodging sector. Given the sweeping nature of the industry-wide movements cited by these industry leaders, and the ancillary reports from industry publications, it is perhaps appropriate to empirically investigate these events and attempt to understand their potential consequences.

1. Research Questions:

Based on the trends outlined in Table 1, and the results of Matovic and McCleary (2002), several questions arise that may be worthy of further exploration:

Research Question One: "Does the competitive market structure of the U.S. lodging industry impact the financial performance of hotel brands?" Based on Table 1, there has been noticeable growth in the number of brands competing in the U.S. lodging market. Accordingly, understanding how this growth in competition potentially impacts the financial performance of individual brands would be worthwhile.

Research Question Two: "Is there a relationship between a hotel brand's market share and its financial performance?" Again, looking at Table 1, it would appear that the increase in brand size (or its relative definition – market share) and financial performance are occurring simultaneously. If they are, this

begs the question - is there a connection, or is this relationship spurious? Specifically, has the increase in a brand's market share generated incremental profits for its stakeholders?

Research Question Three: " Does the competitive market structure of the U.S. lodging industry impact a hotel brand's market share?" Similarly, it would be beneficial to understand the potential impact of the observed increase in competition on a brand's position in the market. In essence, how has the existing competitive structure of the market affected the market share of hotel brands?

2.Definitions:

To assist readers in interpreting this investigation more clearly, the following definitions are offered.

- Hotel Brands: consist of hotels and motels affiliated with a branded chain operating in the United States, with a minimum of five properties, each with a minimum of 20 or more guest rooms (does not include independent hotels or the corporate parent entities that control the individual brands).
- Market Structure: overarching economic and technical parameters that establish an industry's environmental boundaries. Market structure includes barriers to entry, competition, growth, and market share.
- Barriers to Entry: are structural constraints present in a market that impose disadvantages on entrants relative to incumbents (e.g. development costs).
- Competition: refers to rivalry among firms operating in the same market to fill similar customer needs (in this case, hotel brands competing in the U.S.).
- Industry Concentration: the aggregate market share of the top four or eight brands in an industry. A measure of competitive intensity for industries. The higher the concentration level, the fewer the competitors in that industry.

- Financial Performance: are the total economic results of the business activities undertaken by an organization (in this case, the aggregate EBITDA profits of hotels affiliated with brands, operating in the United States).
- Growth: is the process of transformation. In the hotel industry, growth can be viewed as the annual change in revenues from the previous period.
- Market Share: is the ratio of a firm's performance, based on its revenues, to the total performance of the served market.

Further elaboration will be provided for each of these concepts throughout this document.

3. Contribution of Research:

This analysis will help to further the academic literature in the fields of lodging/ hospitality and marketing. In general, the accommodation sector has not enjoyed the same rich research traditions as some other disciplines (Hou, 1994; Singh, 1999; Chung, 2000). Accordingly, beyond acknowledging the increase in industry consolidation, hospitality scholars have done little to explore the potential implications of the trends outlined in Table 1. Based on a broad review of the academic literature in the hospitality field by this author, there appears to be very little empirical research on the topic of market structure and its component elements (barriers to entry, market share, growth and competition) and their relationship to financial performance. Other than occasional references in the industry trade press, a thorough empirical analysis of these fundamental competitive forces has not been conducted as yet within the hotel industry. Nevertheless, there does appear to be some preliminary interest in this subject matter. Several hospitality scholars and industry practitioners believe that market share, and various other structural elements may be integral in understanding various economic relationships within the lodging sector (Martel, 1974; Felstein, 1992; Gilbert & Zok, 1992; Marriott & Brown, 1997).

Given the volatile nature of the U.S. lodging market, with its many boom and bust cycles (Choi, Olsen, Kwansa & Tse, 1999), it may be advantageous to gain a better understanding of the role of competition, and the overall effects of market structure on financial performance. Also, given the difficulty in obtaining brand-level and industry-level financial data on the U.S. hotel sector (Martel, 1974; Hanson, 1991; Ingram, 1994; Rushmore, 1990), this type of quantitative assessment could provide further support for research in the field of marketing or strategic management within the lodging industry.

Unlike industries in the manufacturing sector, hotels, which are generally representative of all services, have several unique characteristics. These include fixed capacity, supply perishability, and service system complexity, all of which have been well documented in the services literature (Levitt, 1976; Barrington & Olsen, 1987; Murrmann & Becker-Suttle, 1993; Kurtz & Clow, 1998). Since these characteristics are not prevalent in producer goods industries, and most studies of market structure have been conducted within the manufacturing sector (Hall, 1987), potential variations may exist between the relationships of the various elements of market structure (barriers to entry, market share, growth and competition), as well as their potential impact on financial performance. Hence, this study attempts to determine if these relationships hold true for the hotel industry (and services in general). If the proposed relationships among these market structure variables are not supported by the results of this investigation, additional research may be warranted to determine if the unique characteristics of the lodging industry have an impact on these relationships.

Over the years, the U.S. lodging industry has become segmented with differing hotel products catering to specific customer groups (Crawford-Welch, 1990). Though segmentation has been well documented within the hospitality literature, there has been very little analysis regarding the role of segmentation in the context of competition, and overall market structure. This study attempts to understand and integrate segmentation within this broader framework.

Lastly, since the three trends outlined on page one are fundamental economic phenomenon present in most markets, this examination could shed light on key economic relationships that may have been assumed in the previous hospitality studies without appropriate empirical backup. Hopefully, this type of analysis will generate additional interest in research related to the competitive market structure of the lodging industry.

4. Study Overview:

This investigation draws on the wealth of knowledge generated by the marketing, strategy and industrial organization economics disciplines, and adapts it to the U.S. lodging sector. By applying the theoretical underpinnings from the three major disciplines outlined above, this analysis examines the relationship among various market structure constructs (consisting of barriers to entry, competition, growth, and market share) and their potential impact on financial performance. Based on supporting literature, these constructs are linked by way of propositions to create the Lodging Market Structure Model (LMS) illustrated in Figure 1.

A specified LMS Model is used to test the hypotheses generated from the propositions, which are ultimately be used to address the research questions outlined earlier. As part of the study, a cross-sectional analysis is conducted using a sample of 67 hotel brands operating in the U.S., covering a four-year period between 1996 and 1999. Multiple regression analysis is used to examine the hypothesized relationships within the LMS model. Appropriate theoretical implications and managerial recommendations are discussed accordingly.

The chapters listed below represent the major topics of discussion:
1- Introduction, 2-Literature Review, 3-Research Method, 4-Data Analysis and Results, 5- Conclusions.

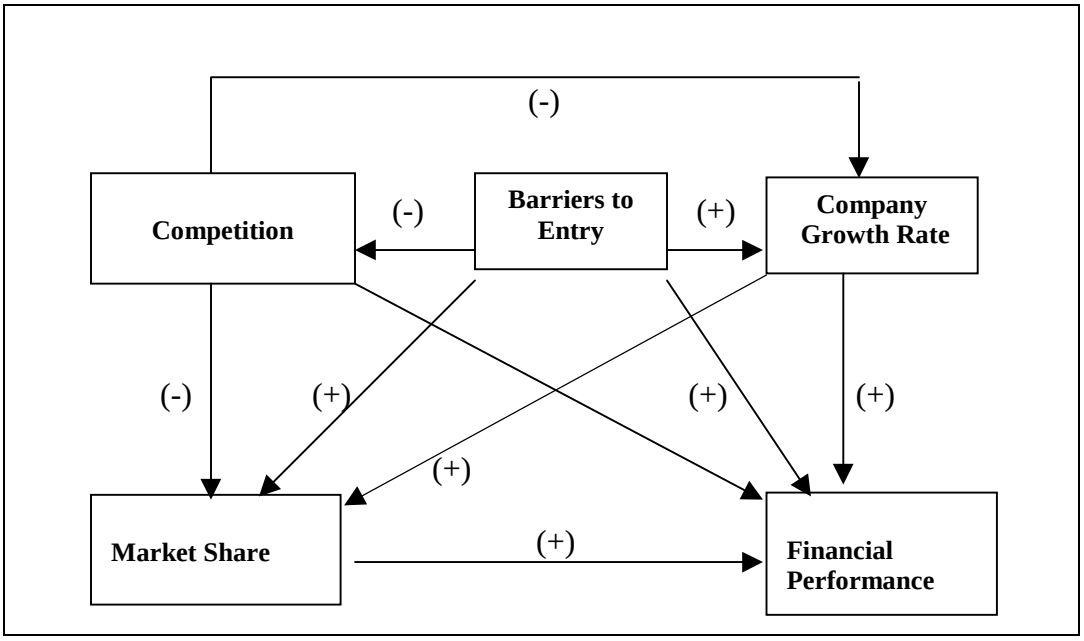

Figure 1- Lodging Market Structure (LMS) Model

CHAPTER II

Literature Review

Economists, marketers, and strategists have traditionally attempted to understand the competitive structure of markets. Classical economic wisdom suggests that comprehending the fundamental forces that drive an industry is vital to its success and to the individual firms that compete in it (Chamberlain, 1933; Collis & Montgomery, 1997). That is, understanding the key forces of supply and demand within a competitive environment is essential, if one aspires to obtain and sustain competitive advantage (Phillips, 1997; Teare Costa, Eccles & Ingram, 1996).

Much of the focus of the disciplines mentioned above has been to explain the economic forces that impact industry and firm performance (Bain, 1951; Hall & Weiss, 1967; Buzzell & Gale, 1987; Kmenta, 1986). Dating back over 70 years, a rich body of literature has evolved in these three disciplines that has continuously examined the relationship between a variety of competitive issues, and other exogenous economic influences on company profitability across a full gambit of industries (Kholi, Venkatraman & Grant, 1990; Martel, 1974; Chung, 2000). In addition, this same body of work, has also attempted to document the fundamental economic relationships within those industries (Chamberlain, 1933; Bain, 1951, Buzzell, Gale & Sultan, 1975; Gale, 1972; Shepherd, 1972; Buzzell & Gale, 1987, Jacobson & Aaker, 1985). This search by economists, marketers and strategists has directed them to consider various economic and structural factors that impact a firm's market position. That is, the approach taken by many of these scholars was to first consider the broad competitive forces that are present in a market, in

order to better understand what impact they might have on a firm's market share, as well as its profit potential.

This chapter will explore and organize the relevant literature on these topics, and attempt to integrate the findings. Specifically, this chapter is broken down into the following seven major areas:

1. Market Structure.
2. Barriers to Entry
3. Competition
4. Growth
5. Market Share
6. Financial Performance
7. Comprehensive Model

Each of these headings will be discussed in detail accordingly.

1. Market Structure:

Scholars in the field of economics, marketing and strategy use the term market structure to describe how competition takes place within a particular market or environment (Roa and Steckel, 1995). The essence of the industrial organization economics (IO) perspective is that a firm's market position within an industry depends principally on the characteristics of the environment in which it competes. Hence, competitive market structure can be thought of as the overarching economic and technical parameters that establish an industry's environmental boundaries (Hall, 1987; Porter, 1979; Chang & Singh, 2000). For the most part, companies within an industry have little or no control over this environment (at least in the short term). Accordingly, the classical IO paradigm took a deterministic view of a firm's maneuverability within this environment, and its implications regarding financial performance (Bain, 1956; Mason, 1949).

Following in this tradition, Porter (1979b) stated that the distribution of profits for all industry members are impacted by two broad sets of influences:

a. Common industry-wide structural traits such as overall economic growth, and the generalized buyer purchasing behavior for that product. These factors will tend to either raise or lower the average profit potential for the industry as a whole.
b. Profitability of the individual firm will also depend on its market position within its industry and the competitive structure of the market. These structural factors include: the level of competition, the barriers to entry, the firm's growth rate, and its market share.

Porter's position is supported by several studies. For example, Schmalensee (1985) decomposed variances in profitability across firms from the 1975 Federal Trade Commission (FTC) line of business data. He found that market structure effects were the most important factors in explaining a firm's profitability, while brand-behavioral factors such as strategy accounted for a much smaller fraction of the firm's profitability variances. Similarly, Rumelt (1991) reanalyzed the FTC data from 1974 to 1977 via time series analysis, and confirmed the conclusions made by Schmalensee several years earlier. In a more recent study, McGahan and Porter (1997) found that brand-behavioral effects accounted for 32 percent of total variation in profit, while overall market structure effects represented 19 percent of the variation in firm profitability. This implies that even when firms compete in the same industry, the idiosyncrasy in their resources leads to different performance outcomes (Schmalensee, 1989). These studies all suggest that to properly understand competition within an industry, it is important to consider both market-level influences such macroeconomic growth, as well as the impact of market structure factors which effect firms at the brand level (Jacobson, 1988). (Note: in most IO studies, macroeconomic forces such as overall economic growth and general buying behavior are assumed to impact the entire market uniformly.)

For the purposes of this study, the literature relating to market structure has been broken down into the following major categories: a – Barriers to Entry, b- Competition, c- Growth, d – Market Share. Each will be discussed accordingly. However, before reviewing the above mentioned constructs, a brief overview of the some of the environmental characteristics of the lodging sector may be warranted.

a. Relevant Characteristics of the Lodging Industry

As mentioned above, much of the literature relating to market structure was born out of the industrial economics field. However, the lodging industry has several unique features that should be acknowledged at the onset of this investigation. These characteristics are different from the manufacturing sector, and hence deserve appropriate clarification in order to adequately place them within the competitive market structure framework. That is, they represent some of environmental constraints placed on brands within the lodging sector.

The first such unique characteristic of lodging is fixed capacity (Hayes, 1952). Unlike manufacturing facilities that can expand production /supply when demand increases, hotels have a set number of rooms (in the short term), and hence their supply is capped (at least in the short run). The second unique characteristic is that lodging supply is perishable (Sasser, Olsen, & Wyckoff, 1978). Specifically, hotel stays cannot be inventoried for future use once an opportunity to rent a room has passed. Conversely, tangible goods have a shelf life that is considerably longer, and can be sold at a later date. The third unique feature is that hotels have substantial start-up capital requirements. Lastly, lodging operations encompass more complex production methods which are characterized as labor intensive, with intangible products, inseparable production and consumption functions, multiple locations, and variable levels of service quality (Sasser, Olsen, & Wyckoff, 1978). Levitt (1976) stated that, in many cases, these "service systems" are less efficient than conventional industrial production methods, and hence may have an impact on overall financial performance.

These characteristics also have a potential impact on some of the fundamental elements of market structure. For example, capacity constraints on room supply may create difficulties in matching hotel products to variations in demand (Hayes, 1952). Too little supply may encourage competition due to the robust performance of a hotel property or the overall brand. Too much supply would indicate underutilization of the assets and may facilitate divestiture of the hotel investment, or conversion to alternative uses. The added concern over the perishability of supply is also problematic, creating a greater sense of urgency regarding the execution of various marketing or yield management functions (Kurtz & Clow, 1998). Prolonged inefficiency in renting the rooms can result in asset underperformance, which can also lead to a quick exit out of the market. Conversely, by curbing perishability (i.e. achieve higher occupancy percentage), brands can improve their asset utilization, better their financial performance (Van Dyke, 1985), and enhance their overall growth rate.

The complexity of service systems also has various market structure implications. For example, the availability of labor, the intangibility of the product (which hampers marketing efforts), and the variability in service quality can also impact a brand's growth rate (Schaffer, 1986). If some hotel brands have strong human resource/recruiting capabilities, sophisticated marketing departments, and effective quality training programs, growth may be accelerated. In addition, the complexity of these service systems may also be an effective barrier to entry to firms lacking those characteristics (Becker & Olsen, 1995). The heterogeneity of the lodging market provides varying degrees of quality, along with wide array of products and services catering to different customer segments. Accordingly, the effective management of these service systems may dictate a brand's ability to compete and to fend off new entrants. Similarly, the expansion of a hotel's core offerings (rooms) to include peripheral services (restaurants, conference facilities, recreational facilities etc.) for the purposes of diversifying and shifting demand, also requires mastery of more complex services systems

which again, can be a factor in both growth opportunities, as well as acting as potential entry impediments (Kurtz & Clow, 1998).

Hotels, unlike some services, require significant capital investments prior to any rooms being sold, along with a lengthy development cycle (Hanson, 1990). These initial costs are exacerbated by the fact that lodging demand is disbursed across a wide geographic spectrum. Hence, unlike manufacturing that can potentially fill all of the demand for their product from a single location, hotel brands must locate in multiple cities across the country in order to capture that demand. This multi-locational distribution strategy creates various logistical problems for brands to achieve efficient growth or economies of scale, thus adding to the existing service system complexities described above (Olsen, Tse & West, 1998). Multiple locations also require incremental capital to build the overhead infrastructure for each hotel which is not as efficient as simply adding variable capacity as in the case of the manufacturing sector. Again, these capital and logistical concerns can inhibit growth for a brand, but at the same time, they can also act as deterrents for expansion by competitors.

Therefore, an analysis of the competitive market structure of the lodging industry should take into consideration the unique characteristics of fixed-capacity, perishability, high-capital requirements, and complexity of service systems within the framework of the constructs outlined earlier, principally competition, growth and barriers to entry.

2. Barriers to Entry:

Barriers to entry are one of the principal forces of competition that shape the performance of firms and industries in any economy (Porter, 1980). The study of entry barriers was pioneered by Bain (1956) who identified four major types of barriers: capital requirements, scale economies, product differentiation, and absolute costs. The economic theory behind barriers to entry postulates that in

every market various structural constraints can impose disadvantages on entrants relative to incumbents. That is, the presence of barriers to entry result in fewer entries and therefore allows incumbent firms to enjoy above-average profitability (Yip, 1982; Mann, 1966; Shepherd, 1979; Bain, 1956; Shepherd, 1972; Porter, 1980; Hall & Weiss, 1967; Karakaya & Stahl, 1991; Avgeropoulos, 1998).

Mann (1966) looked at barriers to entry across 30 industries between 1950 and 1960. He found that firms in industries with very high entry barriers had above average profit rates. Both Bain (1956) and Mann (1966) found that the average level of profitability for industries characterized by "very high entry barriers" to be five percentage points higher than industries with "moderate to low" barriers (Grant, 1995).

In addition, Mann (1966) demonstrated a correlation between barriers to entry and concentration showing that many of the firms in the high concentration (high market share) group also fell into very high barrier classification. Mann also confirmed Bain's (1956) results that in industries where the top eight firms had more than 70 percent concentration levels (highly concentrated industries), there was a statistically significant difference in average profit rates. However, Mann also pointed out that barriers to entry exert an independent influence aside from concentration. Essentially, highly concentrated industries with very high barriers to entry earned a distinctly higher average return than just highly concentrated industries in other categories.

Porter (1979b) stated that barriers to entry have three properties.

i. Barriers to entry are not static. As some of the underlying structural or economic conditions change, the barriers to entry in an industry also change.
ii. Barriers to entry usually change for reasons largely outside the incumbent firm's control.

iii. Barriers to entry in an industry are not experienced uniformly by all potential entrants (Sharma and Kesner, 1996)

Barriers to entry can also be classified as either structural or behavioral (Sigfried & Evans, 1994). Karakaya and Stahl (1991) referred to structural barriers as "environmental" factors, while behavioral barriers were termed as "controllable" factors. Structural barriers derive from the base characteristics of an industry, not the discretionary conduct of incumbent firms. They include factors such as government approvals, capital requirements, technology levels, and industry concentration. Behavioral barriers, on the other hand, are purposeful acts carried out by incumbent firms to prevent entry of potential competitors. These strategies include such issues as patents, price undercutting, lobbying, lawsuits, product proliferation, exclusivity agreements with suppliers and distributors etc. In general, these entry-deterrent strategies have been used in predominantly mature markets (Bunch & Smiley, 1992). Since this study is focusing on structural issues, behavior-based barriers to entry will not be explored since many of these are well documented corporate strategies, and are perhaps best left for a more detailed analysis couched in the traditions of more formal strategic research.

In Bain's (1956) book *Barriers to New Competition,* he identified five major types of entry barriers. These included scale economies, governmental approvals, product differentiation, absolute costs, and capital requirements. Each can play a role in deterring new entrants into the market, and their respective importance may vary depending to the unique characteristics of an industry (Porter, 1979b; Hall, 1987). For example, Hall and Weiss (1967) confirmed Baumol's (1959) hypothesis that entry barriers based on large capital requirements result in higher profit rates. They found that these capital barriers have a greater effect on profitability than on market share, the traditional index of market power. Large up-front capital costs have been viewed as a major entry barrier in certain industries like automobiles, steel manufacturing, utilities, and commercial airlines (Hall, 1987).

Barriers to entry also have an impact on competition. In most cases, they will discourage competition from entering the market. However, once the decision is made by new entrants to invest large sums of capital to enter a high-barriers market, or to obtain the requisite governmental approvals etc., firms will aggressively pursue market share in order to cover their fixed cost. Eventually, this creates increased competition for the industry, since each participant has more at risk. This perspective is supported by Jain (1997), who stated that in industries where capacity can only be added in large capital-intensive increments, competition intensifies exponentially. This means that where efficiencies realizable through large-scale operations are substantial, a firm will do all it can to achieve scale economies. Thus, attempts to capture these efficiencies may lead firms to aggressively compete for market share, escalating pressures on other firms, and creating a chain reaction (Avgeropoulos, 1998).

To date, there have only been a few studies in the hospitality sector relating to entry barriers. For example, Martel (1974), identified high construction and development costs (Bain referred to these as capital barriers) as a major entry barrier in the hotel industry. Likewise, Hanson (1991) analyzed the relationship between development costs and financial performance in the hotel industry. He found a strong positive correlation between hotel development costs and operating income. Similarly, (Chung, 2000) studied the impact of development cost barriers on other market structure constructs and financial performance in a single city market. He concluded that barriers to entry allowed the hotels in that market to exercise monopoly-like pricing practices, thus increasing profitability.

In addition to development costs, the complexity of service systems can also act as potential entry barriers within the lodging industry (Olsen, Tse, & West, 1998). As noted earlier, the complexity of administering multiple hotel locations spread out across a broad geographic region is a formidable task (Lavin & Lunceford, 1993). This endeavor is made even more challenging when

considering that brands must orchestrate the efforts of multiple departments at the various properties offering a variety of products and services, recruit and train a large labor pool, manage sophisticated marketing and yield management programs, stay abreast of countless governmental regulations, and overcome the concerns of skeptical consumers about the tangibility of the lodging experience (Jones, 1998). However, since the hotel industry is segmented (Crawford-Welch, 1990), the heterogeneity of demand creates opportunities for brands to carve out a niche across a broad spectrum of services, amenities and prices. Therefore, if brands can develop a competitive advantage by mastering specific elements of these complex service systems, they may be able to use them as barriers to entry for potential competitors to enter their market, as well as allowing them to accelerate their growth, either at a local level or at a national one (Becker & Olsen, 1995).

In summary, the presence of high entry barriers inhibit competition from entering the market, increase an incumbent brand's rate of growth, improves the brand's share of the market, and increases incumbent firm's profits by allowing them to charge higher prices and/or achieve greater asset efficiencies (Porter, 1979b). Hence, based on the entry barriers literature, and a preliminary review of the related lodging literature, we can state, the following relationships:

Since barriers to entry are a general deterrent to competition, the proposition below articulates that position.

Proposition 1: If entry barriers increase, then competition will decrease.

Also, since barriers to entry decrease competition, this also allows incumbent firms to take advantage of new market opportunities, by expanding their existing products, charging higher prices, or pursuing complementary projects, thus allowing them to increase their rate of growth. Hence, we can state the following proposition:

Proposition 2: If entry barriers increase, then a company's growth rate will increase for incumbent firms.

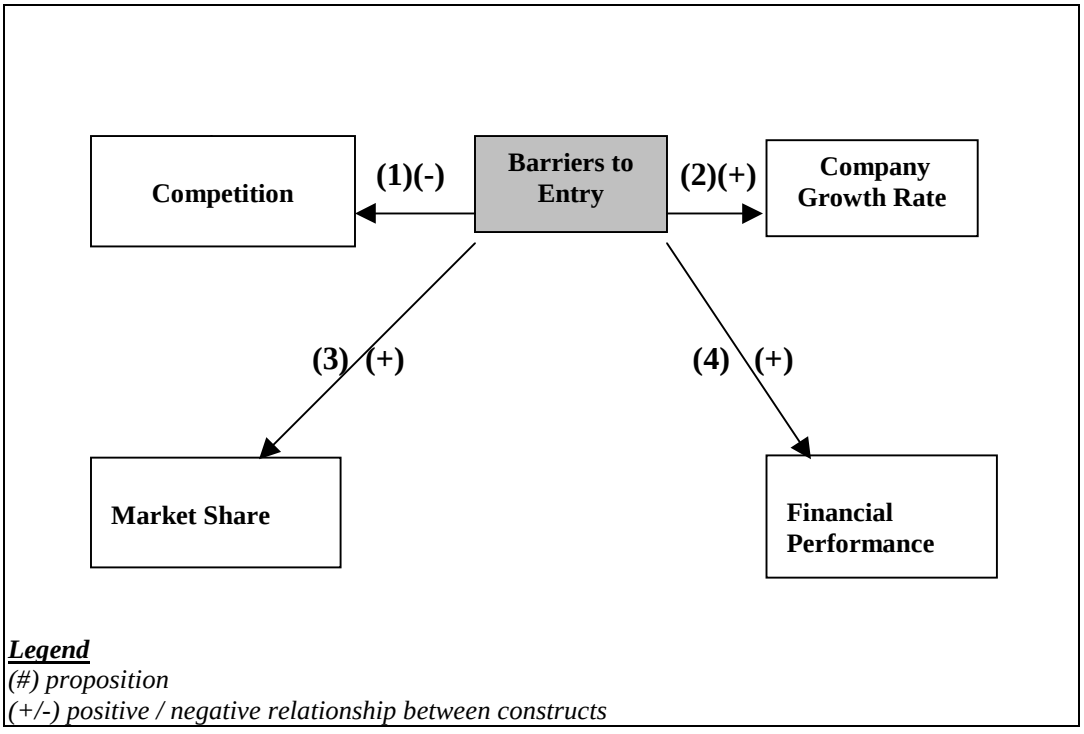

Figure 2. Proposed Relationships: Barriers to Entry with other Market Structure Constructs.

Accordingly, the existence of entry barriers also allows incumbent brands to improve their market position at the expense of competitors. Therefore, the following proposition is made:

Proposition 3: If entry barriers increase, then market share will increase for incumbent firms.

Lastly, as entry barriers increase, the relative financial profitability of those incumbent firms will rise accordingly.

Proposition 4: If entry barriers increase, then financial performance will increase for incumbent firms.

3. Competition:

Competition is basic to the free enterprise system. Competition is involved in all observable phenomena of a market – the prices at which products are exchanged, the kinds of the products produced, the quantities sold, the methods of distribution, and the emphasis placed on promotion (Chamberlain, 1933). Basically, competition, in today's business environment, refers to rivalry among firms operating in a market to fill similar customer needs (Jain, 1998). Competition can be classified at several different levels. For the purposes of this study we are interested in competition at the industry-level and at the brand-level.

Competition, at the market or industry level, can be articulated of in terms of its concentration. Concentration has been defined as the percentage share of the total industry sales (or some other variable) accounted for by a given number of firms which are concerned with that variable (Bain, 1951, 1956). By definition, the combined market share of all competing firms, which equals 100 percent, will be dispersed over fewer firms in a more concentrated industry than in a less concentrated industry. Therefore, market share is synonymous with industry concentration. The specific point to understand here is that concentration describes the level of competition at the market-level, as compared to the brand-level. Concentration measures are most widely used when comparing levels of competition across multiple industries rather than within a single industry (Hall, 1987).

a. Industry Concentration:

Several market structure models that had concentration as a central component were derived from classical economic theories relating to various forms of competition such as oligopolies and monopolies (Chamberlain, 1933). Research related to competitiveness and concentration was originally fueled by legal concerns over antitrust matters in certain industries. Several early authors looked at these and other factors not just from an economic perspective but also in

the context of deterring market abuses of monopolies (Adelman, 1948; Mason, 1949; Edwards, 1949). In essence, the degree of concentration (high, moderate, or low) of an industry tells us whether its market structure can be characterized by either monopoly, oligopoly, monopolistic competition, or pure competition (Bain, 1951; Weiss, 1971). The higher the concentration level, the less competitive the market will be (Bain, 1951; Domowitz, Hubbard, & Petersen, 1986; Martin, 1988; Gale, 1972). Subsequently, the work of Bain and others, was an impetus for a national antitrust policy to prevent mergers that would lead to significantly concentrated industries (Nguyan, 1990).

From an economic perspective, the significance of changes in concentration levels is the potential effects it might have on the industry's market conduct and performance (Bain, 1951). Concentration effects market conduct by influencing the pricing and marketing policies of firms in that industry (Weiss, 1971). The more concentrated the market, the greater the degree of discretion firms have with respect to these policies. The degree of discretion is limited by the force of competition. The higher the concentration, the greater the possibilities of firms coordinating their pricing policies. Hence, concentration affects both market conduct and market performance. Also, in the absence of product differentiation, and in the short run before entry can occur, the fewer the sellers or the less equal their market shares, the more likely is seller behavior to be monopoly-like (Bain, 1956; Weiss, 1971).

The first major empirical study to support the hypothesis that industry concentration is tied to financial performance came from Bain's (1951) examination of 42 American manufacturing industries from 1936 to 1940. Based on his analysis, Bain concluded that the financial performance of individual firms in industries with high industry concentration ratios was significantly greater than those firms in industries with lower average concentration levels. That is, the greater the amount of competition in an industry, the lower the profits for individual firms.

Industry concentration is the most frequently quantified element of market structure (Nguyen, 1990). This is in part because Bain's research produced a useful measure of concentration. Using data from 58 industries, Bain created "set ratios" by which the aggregate output of the top four and top eight firms were classified and compared to total industry output (Bain 1951; 1956). These levels are illustrated in Table 2 below.

Table 2. Bain's (1956) Industry Concentration Ratios

Concentration Level	Top 4 Firms %	Top 8 Firms %
1. Very High:	90%	99%
2. High:	70%>	85%>
3. High-Moderate:	50%>	70%>
4. Low-Moderate:	35%>	45%>
5. Low:	< 35%	< 45%

Source: Bain (1951, 1956)

The most relevant piece of hospitality research on this topic was conducted by Martel (1974). Building on the seminal work of Meek (1938) and Hayes (1952), Martel was the first and only researcher to study this subject matter within the context of lodging (Chung, 2000). In his doctoral dissertation, Martel analyzed the U.S. hotel industry from 1965 to 1972. Specifically, he looked at the impact of various market forces on financial performance for the top eight firms in the hotel industry. Using Bain's concentration ratios, Martel (1974) measured the competitive framework of the U.S. hotel industry, and subsequently concluded that it fits in the low-moderate category (see Table 2). Accordingly, he characterized the hotel industry as exhibiting tendencies of monopolistic competition. The study also stated that the top four firms doubled their share of the market, increasing from 16.7 percent to 36.9 percent between 1965 and 1972. He attributed much of this growth to franchising as a form of local market entry, and predicted that this trend would likely continue into the future. Nevertheless, he also indicated that the top eight firms did not have significant control of the market due to its disparate ownership structure and diffused pricing policies across the country. Similarly, he found no evidence of predatory pricing on the

part of share-leader firms. Rather, he concluded that pricing within the hotel industry was the result of competition, product differentiation, and varying construction costs for lodging types.

Table 3. Growth in Hotel Brand Competition in the U.S. (1991-2000)

Brand Statistics	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Number of Brands	140	144	146	147	150	160	170	177	185	188
M&A $ (billions)	.9	1.4	2.1	0.2	1.1	5.1	8.9	33.3	6.6	0.3

Source: PriceWaterhouse Coopers 2001, Smith Travel Research 2001, Bear Stearns 2001. American Hotel & Lodging Association 2001. (M&A's = mergers and acquisitions)

Presently, there are approximately 188 brands in the U.S. lodging market (American Hotel & Lodging Association, 2001). Consistent with Martel's (1974) predictions, the number of hotel brands has grown. For example, between 1991 and 2000, the number of brands has blossomed from 140 to 188 (see Table 3), a 34 percent increase (PriceWaterhouse Coopers, 2001; Smith Travel Research, 2001; Bear Stearns, 2001). Several recent studies also indicate that the level of competition may increase even further, thus making it more difficult for firms to grow and to cultivate their profits. For example, Singh (1999) reviewed several topics related to competitive structure within the U.S. lodging industry. The scholars and industry executives that made up Singh's Delphic panel predicted that the average hotel firm would continue to increase in size through a combination of new product development (i.e. extended stay, assisted living, time share), mergers/acquisitions, and international expansion. This general industry sentiment was supported by interviews conducted with hotel industry CEO's and Corporate Marketing Directors by Matovic and McCleary (2002 forthcoming). Similarly, in a major recent survey of hotel industry executives, institutional investors, and lenders, Warner and Cline (2000) reported that the pace of mergers and acquisitions will probably accelerate over the next three years. These predictions may have even more bravado in light of the terrorist attacks of

September 11th , 2001on the World Trade Center and the Pentagon and the subsequent economic downturn, as weak properties and weak brands fall by the wayside and are purchased by organizations with stronger balance sheets.

By comparison, 1999 U.S. hotel industry concentration levels appear to have declined relative to 1972. Table 4 illustrates the concentration levels for the top four and top eight brands in the U.S. lodging market. When measured by sales revenue, the concentration level for these top four brands is approximately 17.9 percent of total industry sales, down almost 20 percentage points from a quarter century ago. This concentration ratio declines even further when considering the hotel or inventory measurements. By Bain's classification, this would move the U.S. lodging industry down to the "Low" concentration category (as compared to the low-moderate level found in Martel's analysis). Having "Low" concentration levels implies that these large-share brands should not be able to exert a major influence on the broad market as is the case in some other industries with high concentration levels (Bain, 1951).

Table 4. Concentration Levels - Top Eight Brands in U.S. Hotel Sector (1999)

Brand	**Revenues * (in $ billions)**	**Brand**	**Hotels**	**Brand**	**Rooms**
Marriott	6.64	Best Western	2,116	Holiday Inn	191,094
Holiday Inn	4.43	Super 8	2,001	Best Western	189,897
Best Western	3.54	Days Inn	1,901	Days Inn	157,722
Sheraton	3.33	Comfort Inn	1,457	Comfort Inn	118,756
Top 4 Total	**$ 17.91**		**7,475**		**657,469**
% of Industry	**17.4%**		**14.5%**		**14.4%**
Hyatt	3.18	Hampton Inn	1,078	Super 8	112,659
Hilton	2.48	HI Express	1,019	Marriott	106,587
Courtyard	2.23	Holiday Inn	1,010	Hampton Inn	102,019
Radisson	2.05	Motel 6	807	Ramada	101,219
Top 8 Total	**$ 27.85**		**11,389**		**1,079,953**
% of Industry	**27.1%**		**22.1%**		**23.6%**

* Source: Bear Stearns, 2000, Smith Travel Research, 2000. * Represents the collective revenues of the hotels affiliated with that brand

The findings in Table 4 appear to indicate that the U.S. hotel industry has become less concentrated since 1972. That is, the market share leaders of 1972 were unable to maintain the same level of growth as the rest of the industry, and hence, their collective market share (concentration) has subsequently slipped. This in turn would seem to suggest that other new or smaller brands have, over time, eaten into the dominant share positions of early market leaders. Upon reflection, these observations are consistent with the evidence presented in Table 1, indicating growth in competition from new brands. Another factor that appears to be contributing to this dilution of the top eight brands of 1972 is segmentation, which appears to be one of the contributors to the growth of new brands.

In general, the U.S. lodging sector's concentration level is lower compared to other industries such as computer operating systems software, steel manufacturers, or tobacco, where the top four brands have traditionally controlled in excess of 70 percent of the market (Bain, 1951; Ravenscraft, 1983, Hall, 1987). Nevertheless, the lodging sector's level of concentration is consistent with many other industries such as footwear, paper goods, confectionary items, lumber and cement, among others where monopolistic competition prevails (Hall, 1987)

b. Segmentation:

Before reviewing brand-level competition, it is important to introduce the concept of segmentation (or product differentiation as it is referred to in the economic literature). Segmentation is the process of dividing the overall market into narrowly defined consumer groups and products (Murphy, 1990; Aaker, 1996). Segmentation has a long history in the United States. In 1921, Alfred Sloan and General Motors Corporation made a strategic decision to establish a complete spectrum of product offerings at every price position in the automobile market (Scherer & Ross, 1990). Subsequently, numerous other companies and industries have used segmentation as an opportunity to broaden their consumer appeal and to grow their revenues.

In a segmented competitive environment, brands positioned in different segments do not compete directly, but rather, indirectly (Aaker, 1996). Lehmann (1972) states that brands are more competitive if there is a lot of switching between them. Hence, each brand attempts to make consumers think that its offerings are different from the products of its competitors to create some degree of market power. The primary incentive for brands to differentiate is the reduced substitutability between products. With reduced substitutability between products, price-cutting does not result in a complete loss of one's marker share. Product differentiation thus gives a firm a certain power within its own segmented portion of the market. Conversely, when an entire market is represented as one large homogeneous unit, the intensity of competition is much greater than when the market is segmented (Jain, 1998). That is, when the products offered by different competitors are perceived by customers to be more or less similar, firms are forced into price and to a lesser degree, service competition. In such situations, competition can become very intense (Kurtz & Clow, 1997).

The practice of planned segmentation by firms, sometimes referred to as "product proliferation," consists of firms positioning new brands to fill up new or available product niches in the market place (Schmalensee, 1978). Schmalensee, stated this is achieved by firms identifying a product-characteristic space in the market with n-dimensions, each dimension corresponding to an attribute that consumers perceive the products to possess. According to several authors, product proliferation is not only a good way to grow potential new revenues, it is also one of the most commonly used strategies employed by incumbent firms to create barriers to entry. (Besanko, Dranove, & Shanley, 1996; Thomas, 1996; Mainkar, 2000). Creating a product or brand suited to that segment can pre-empt competitors from entering that space.

Segmentation appears to have grown within the U.S. lodging market over the last 20 years. Crawford-Welch (1990) and Rushmore (1990) suggest that the

lodging sector has reached saturation levels for certain types of products, and that the industry is in the mature stage of its lifecycle. Both authors posit that segmentation occurs when members of an industry believe that opportunities for expansion in their existing stratum of business are not sufficient to maintain or increase their rate of growth at a desired level. Rushmore (1990, pg. 17) described this phenomenon as follows:

> "Since earnings growth is critical for public companies, major hotel brands had to find a vehicle for expansion in the mid-80's that would allow them to develop or franchise additional hotels within their established geographic market areas without simply drawing a portion of the demand away from their existing properties. The answer to this dilemma was to develop new products such as all-suite hotels, microtels, and extend-stay properties and to create new brand names to capture a different class of traveler".

Hence, like other mature industries, the hotel sector has turned to segmentation for expansion by targeting specifically tailored products to different kinds of travelers. Major hotel companies such as Marriott, Bass, Cendant, Choice, Hilton and others have simultaneously segmented the industry, and ultimately increased the number of overall brands (Coopers & Lybrand, 1998). Basically, as new niche segments are identified, a number of new brands rush in and capture the potential demand in this new space (Rushmore, 1991, 1998; Crawford-Welch, 1990). To seize the momentum of a new niche segment, and to leverage the goodwill associated with their existing brands, many lodging companies have turned to brand extensions. The classic example is that of the original Holiday Inn brand. Over the years, its parent company has extended the original name to include Holiday Inn Express, Holiday Inn Select, and Holiday Inn Sunspree Resorts, Crowne Plaza by Holiday Inn, and most recently, Staybridge Suites by Holiday Inn, which compete for different segments and price points in the market.

Presently, the hotel industry has a number of different products and price points designed to appeal to several distinct consumer groups requiring some form of customization. From a classification perspective, the hotel industry can be

divided into the following categories: price, amenities, location type, size, and region (Bear Stearns, 2000; Dev 1988; Crawford-Welch, 1990; Smith Travel Research, 2000). Table 5 illustrates the most commonly utilized segment classification schema developed by Smith Travel Research (Bear Stearns, PriceWaterhouse Coopers, 2000). This classification format uses a combination of price and amenities to describe the various segments. The nine major hotel industry segments include: Deluxe, Luxury, Upscale, Mid-Price with Food and Beverage Facilities, Mid-Price with No Food and Beverage Facilities, Economy, Budget, Extended-Stay – Upscale, and Extended-Stay-Budget.

Table 5. Segmented Competition in the U.S. Hotel Industry (1999)

Segment	Deluxe	Luxury	Upscale	Mid F&B	Mid No F&B	Econ.	Budget	Extend Upscale	Extend Budget
Number of Brands	4	11	15	17	19	21	37	5	12
Typical Brands in Segment	Four Seasons Ritz Carlton Fairmont	Hilton Marriott Sheraton	Embassy Suites Crowne Plaza Radisson	Holiday Inn Best Western Courtyard	Hampton Inn Comfort Inn HIExpress	Days Inn Fairfield Red Roof	Motel 6 Econo Lodge Super 8	Residence Inn Homwood Suites Hawthorn	Extend Stay Americ Suburb Lodge Villager
Segment ADR	$ 204.62	$ 140.90	$ 97.67	$ 69.95	$ 66.66	$ 51.85	$ 43.42	$ 98.34	$46.62
Segment Occupancy	71.7%	71.8%	68.3%	60.3%	64.9%	56.6%	60.4%	76.2%	68.6%
Total Hotels in Segment	219	863	1,527	4,725	4,434	4,426	5,099	559	976
Supply of Rooms (000)	33.5	369.5	261.3	608.3	407.5	375.7	382.5	64.4	108.4

* Source: Bear Stearns 2000, Smith Travel Research 2000, PriceWaterhouse Coopers 2000.

To understand the competition in an industry or segment, it is important to analyze some of the more fundamental characteristics of the market such as pricing, distribution, and capacity, along with absolute size (Jain, 1998). Table 5 indicates that each segment has varying degrees of competition, along with variations in size, price, demand and distribution. For example, the number of major brands competing in the deluxe segment is only four, compared to 37 in the budget segment. In general, as price increases, the number of competitors decreases. Similarly, as the number of competitors increase, distribution (i.e. the number of hotel operating units) increases as well.

c. Brand-Level Competition:

Based on the industry overview provided above, it would appear that assessing competition for a single hotel brand requires us to first understand the level of competition within its segment, and then to look at the broader industry. Various scholars and industry consultants have developed procedures that quantify the level of competition that a hotel or brand might incur in a particular market (Rushmore, 1991,1998; Khan, 1992; Bull, 1994; Kimes & Fitzsimmons, 1990). The basic premise here is that a hotel brand faces two levels of competition, primary and secondary. The primary set would encompass direct competitors - usually from the same segment. In addition, other factors such as geographic proximity, and physical amenities are also taken into consideration when looking at specific markets by which competitors may or may not be added to the primary set. Inclusion in the secondary group (indirect competitors) is based on both price point overlap and customer mix overlap. For example, a competitive impact analysis for Ritz-Carlton would likely include Four Seasons, and Fairmont Hotels (all from the deluxe segment) in the primarily set. Likewise, Hilton, Sheraton, Hyatt and Marriott (from the luxury segment) may be included in the secondary set. Inclusion of this later group in the indirect set could perhaps be based on some lower-priced meetings or convention business that might overlap with Ritz-Carlton's rate structure. Brands from other segments (i.e. Holiday Inn, Hampton Inn, Motel 6 etc.) would generally not be included because their level of services and pricing are not comparable to that of Ritz-Carlton. The same general procedures could be applied to either individual hotels, segments, markets or across the entire industry (Rushmore, 1990).

Based on the competition related literature, and a preliminary review of lodging research, we can put forth the following relationship:

Proposition 5: If competition increases, then the growth rate for incumbent companies will decrease.

Simply stated, as the number of competitors in a market increases, this reduces the market opportunities, and hence makes growth for incumbent firms more difficult.

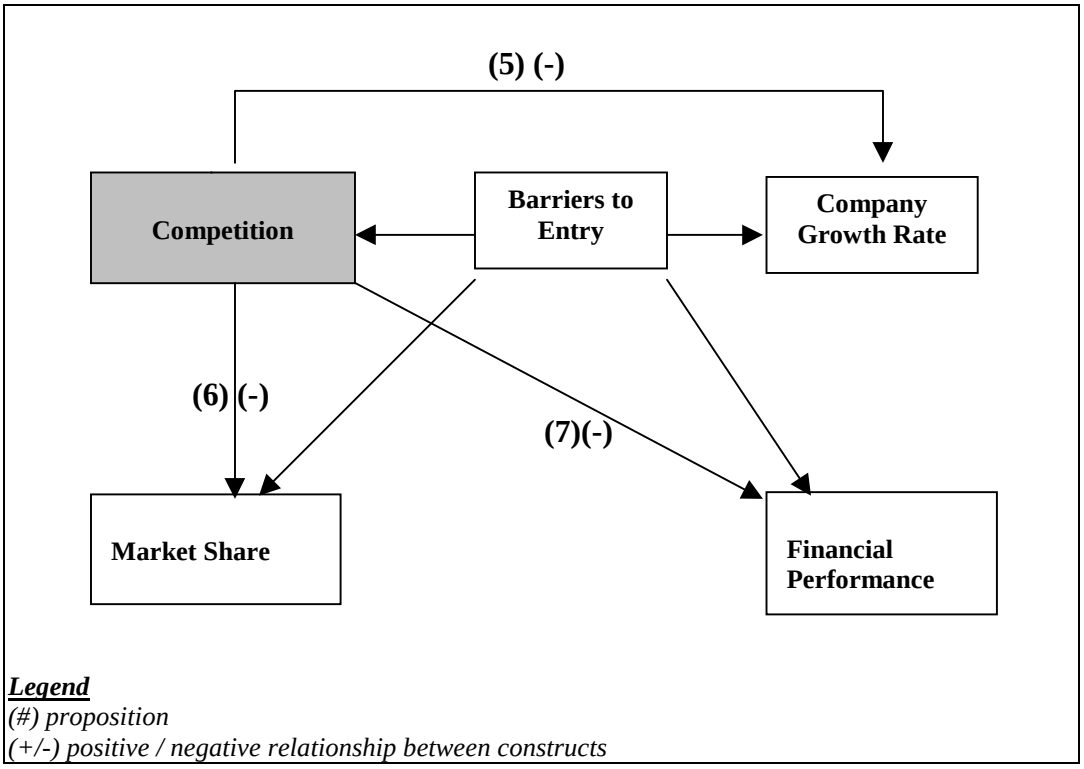

Figure 3 - Proposed Relationships: Competition and other Market Structure Constructs.

Also, if competition increases, and the competitors take advantage of those opportunities, this diminishes a firm's market position. Therefore, we can state the following:

Proposition 6: If competition increases, then market share will decrease for incumbent firms.

Similarly, an increase competition will decrease a firm's financial performance since they will not be able increase their pricing, or sell more products due to competitive forces. Hence we can state:

Proposition 7: If competition increases, then financial performance decreases for incumbent firms.

These propositions are added to the model shown in Figure 3.

4. Growth:

Growth is defined as the process of transformation (Usher, 1979). Growth in the economic sense is also a fundamental element of market structure (Porter, 1979b). The general proposition is that a company's growth can impact its market share as well as its financial performance (Gale, 1972; Shepherd, 1972a; Porter, 1979a & b; Porter, 1980; Ravenscraft, 1983; Hall, 1987). The faster a company grows relative to the market, the greater its market position. Similarly, the faster the company's rate of growth, the faster its attainment of critical mass. With this increase in size, it is reported that firms are then able to obtain the benefits of market power and/or economies of scale which are believed to be the underlying causes of above-average profits for higher-share firms (Hall & Weiss, 1967; Shepherd, 1972a; Mancke, 1974). To assess a company's relative growth rate, we must first look at the growth rate of the overall market, then compare it to its internal rate of growth.

a. Industry–Level Growth:

Over the years, scholars have not only measured the growth rate of industries, they have also attempted to classify and compare these rates of growth, both within industries, as well as across industries. Accordingly, industries can be classified into life cycle stages of the product or the market by their rate of growth

(Kurtz and Clow; 1998). For example, a mature industry has the following characteristics: slowing of industry sales, intense competition, growth of dominant players/shaking out of weaker ones, distinct market segments, and brand parity within the industry.

Also, ranges of growth rates can be grouped. For example, Shepherd (1972b) classifies the growth rate of industries into the following categories:

a. Slow-growth = below five percent
b. Moderate-growth = between five percent and 10 percent
c. Rapid-growth = greater than 10 percent per year

Generally, higher-growth markets are viewed as relatively more attractive by businesses, as compared to low-growth markets. High-growth markets are characterized by high margins and growing demand, while low-growth markets are characterized by lower margins and slowing demand (Hall, 1987). Consequently, it would be expected that most firms would show a propensity to exit low to moderate growth markets and enter high-growth markets. Also, low to moderate growth markets are likely to experience an increase in both segmentation and consolidation (Porter, 1979a).

Table 6. U.S. Hotel Industry Growth (1991-2000)

Year	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Revenue ($ billions)	60.5	61.7	63.5	66.7	70.4	77.4	85.6	94.5	102.6	110.5
%Increase	0.1%	2.0%	2.9%	5.0%	5.5%	9.9%	10.6%	10.4%	8.6%	7.7%
Demand Room(000)	1,993	2,035	2,071	2,133	2,172	2,220	2,275	2,346	2,409	2,472
%Increase	0.1%	2.1%	1.8%	3.0%	1.8%	2.2%	2.5%	3.1%	2.7%	2.6%
Supply Room(000)	3,221	3,245	3,255	3,290	3,332	3,409	3,527	3,667	3,910	3,956
%Increase	0.1%	0.7%	0.3%	1.1%	1.3%	2.3%	3.5%	4.0%	6.6%	1.2%
Occupancy (%)	61.9	62.7	63.6	64.9	65.2	65.1	64.5	64.0	63.3	63.7
Price ADR ($)	58.07	58.9	60.52	62.83	65.8	69.91	74.18	78.18	81.41	84.29
% Increase	0.1%	1.4%	2.8%	3.8%	4.7%	6.2%	6.1%	5.4%	4.1%	4.8%

Source: PriceWaterhouse Coopers 2001, Smith Travel Research 2001, Bear Stearns 2001.

Gale (1972) found that industries experiencing moderate growth had higher profits than industries with rapid growth. The author stated that in moderate growth industries, firms have a greater incentive to avoid price rivalry that tends to reduce their profits in the long run. That is, the ability of sellers to coordinate their efforts in an oligopoly situation is greater when industry growth is moderate. By comparison, in declining or slow growth industries, oligopolistic coordination may break down as firms feel the pressure of high fixed costs. Conversely, in rapid growth industries firms will tend to sacrifice current profits as they compete for market share (Baumol, 1959).

Based on Kurtz and Clow's (1998) definition, and the research of various hospitality scholars, the U.S. hotel sector can be categorized as a mature industry (Martel 1974, Crawford-Welch, 1990; Ingram, 1994; Hou, 1994; Coopers & Lybrand,1994; Bear Stearns; 1997). Also, based on Shepherd's (1972b) classification and the information contained in Table 6, the hotel industry can be placed in the moderate growth category. Over the last ten years, the U.S. lodging industry has attained an average growth rate of 6.3 percent per year. Despite this relative stable growth rate over the last ten years, the hotel industry has also exhibited wilder cyclical behavior over the last 50 years, (Coopers & Lybrand, 1994; Choi, Olsen, Kwansa & Tse, 1999). These authors noted a strong correlation between hotel industry performance, and broad macroeconomic factors such as GDP, interest rates, and domestic and international travel volumes.

During the last ten years, gross revenues have almost doubled, growing from $ 60.5 billion, to $ 110.5 billion per year. Room demand grew at an average rate of 2.2 percent per year, while room supply grew at an annual 2.1 percent pace. Hotel room pricing, as reflected by ADR, increased just under four percent per year between 1991 and 2000. This is a net increase of 125 basis points above the average annual inflation rate for the same period (Bear Stearns, 2001; PriceWaterhouse Coopers, 2001, Smith Travel Research, 2001).

b. Brand- Level Growth:

Having reviewed growth at the industry-level, we now turn to the growth within brands. Hotel brands can grow in a variety of ways. For example, they can sell more rooms, they can increase their prices, they can develop more properties, they can increase conversions from other brands or independents or they can purchase existing hotels or chains.

Whatever the method of expansion for a brand, researchers have found that this rate of growth can both increase their market share, as well as improve their overall financial performance (Baumol, 1959; Gale, 1972; Shepherd, 1972b; Porter, 1979; Healy Palepu & Ruback, 1992; Morck, Shleifer, & Vishny, 1990; Kim & Signal, 1993)

Logically, if a brand's rate of growth is faster then the market's overall rate of growth, the brand's position in the market will increase since market share is a relative measure (Bain, 1951; Baumol, 1959). Conversely, a brand can have growth in absolute terms, but can still lose market share if its internal rate of growth does not match the market's growth rate. As will be discussed in the next section, the attainment of market share has various benefits for a firm. For example, Hou (1994) pointed out that the size of the hotel chain is a parameter for the recognition of its brand name to a customer, as well as to potential franchisees. Also, Oxenfeldt and Kelly (1969) stated that the goal of most franchisors is to penetrate the markets as widely and rapidly as possible, in order to grow their distribution and revenues, and to create entry barriers for their competitors by occupying the most favorable locations. Hotel industry statistics indicate that the average brand is growing in size, as illustrated in Table 7. Hence, in order to maintain their market share, or to improve it, individual brands have had to pursue various strategies to at least match the growth rates indicated in Table7. This growth has been facilitated by increases in brand affiliation levels, mergers and acquisition, increases in pricing and others.

Table 7. Growth in Hotel Brand Size in the United States (1991-2000)

Brand Stats.	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Avg.# of Hotels**	128.8	128.2	128.9	131.5	132.6	129.2	127.7	127.2	126.1	130.3
Avg. # of Rooms**	13,804	13,746	13,823	14,100	14,217	13,849	13,881	14,201	14,372	14,838
Avg.Brand Revenue *	259.7	260.9	270.9	287.7	303.2	318.4	341.4	370.1	383.2	412.6
Affiliat*** Brand%	60.1	60.9	62.1	63.4	64.6	65.8	67.8	68.6	69.2	70.2

Source: PriceWaterhouse Coopers 2001, Smith Travel Research 2001, Bear Stearns 2001. American Hotel & Lodging Association 2001. (* in millions $, **Per Brand, ** *Level of Brand Affiliation, M&A's = mergers and acquisitions)

As indicated above, the average size of the brands has increased. During the last ten years, the number of hotels per brand has grown marginally, climbing from 128 units to 130 units. Though this figure does not sound all that impressive, it must be pointed out that new brand introductions compete for hotel developments and the conversion of independent hotels. That is, the 34 percent expansion of new brands, over the last ten years, has helped keep the brand average hotel count in check. Simultaneously, brand room counts have grown from 13,800 rooms to 14,850 rooms per brand. Also, since 1991, average brand revenues have grown from 259.7 million to over $ 412.7 per year, a 58.9 increase.

Table 7 also indicates a ten-point jump in brand affiliation over that last 10 years, and a surge in buying activity. Presently, some 70 percent of the total 47,000 hotels, in the United States are associated (owned, managed, affiliated or franchised) with a major brand (PriceWaterhouse Coopers, 2000). Several researchers have commented on the growing trend of independent hotels converting to brands (Crawford-Welch, 1990; Ingram, 1994; Rushmore, 1998; Murthy, 1994; Ingram, 1994). Likewise, Hanson (1991) stated that the majority of new hotel developments between 1979 and 1990 became affiliated with a brand. According to Hanson's research, the primary reason for this relationship is that the lending environment has forced most new hotel developments to affiliate with a national chain in order to obtain financing. Lenders have shown a preference for

brands since they generally outperform independent hotels, and hence are considered less risky (Rushmore, 1990; Singh, 2000).

Also, between 1992 and 2000, the mergers and acquisition transaction totals amounted to$58.2 billion (Bear Stearns, 2001). During that period a total of 43 brands traded hands (see Appendix A). In some cases, smaller or failing brands were absorbed into growing brands that wanted broader distribution around the country. For example, when Doubletree Hotels purchased Red Lion Hotels, some 67 Red Lion properties were converted to Doubletree Hotels (Sheridan,1997). Similarly, when Hilton purchased Promus Hotels, they folded the Hilton Residential Suites brand into Promus' more popular Homewood Suites brand (Watkins, 2000).

Several studies have implied that the rate of growth also has an impact on financial performance. Most of these empirical findings indicate that, in mature markets, as a company's rate of growth accelerates relative to the market, profitability tends to spike exponentially rather than growing in a linear manner with more gradual growth. For example, Healy Palepu and Ruback (1992) looked at 50 acquisitions and mergers between 1979 and 1984, from across a wide variety of industries. Mergers and acquisitions are studied since they are representative of sudden (rather than gradual) increases in a firm's market position. Using post-merger cash flow measures of economic performance, they found a significant 5.1 percent ex-post improvement in the combined firm's asset productivity relative to the industry. Their findings confirmed the results of a similar study by Morck, Shleifer, and Vishny (1990). Similarly, Kim and Signal (1993) reported that merging firms in the airline industry increased their fares between 10 to 13 percent within 12 months following the completion of their transactions, thus leading to improved profits. These price increases were positively correlated with changes in market share, but were not tied to improvements in quality or service. Dow (2000) looked at market share and company growth as a motive for horizontal acquisitions and mergers. Using a

sample of 42 mergers and acquisitions from 1996 and 1997, Dow indicated that market power was the source of gains in 40.5 percent of those events, while synergy in the form of various efficiencies and economies of scale accounted for 7.1 percent. (note: these arguments are consistent with the hypothesized financial benefits of market share increases discussed in the next section)

In the hotel industry, Kwansa (1994) analyzed 18 hotel company acquisitions and mergers between 1980 and 1990. Specifically, he looked at the impact of acquisitions on target company shareholder's wealth (a proxy for profitability). He concluded that shareholder wealth increased by 29 percent, indicating abnormally higher returns.

Table 8. U.S. Hotel Segment Supply Growth 1991-2000 (Percentages).

Segment	1992	1993	1994	1995	1996	1997	1998	1999	2000	Avg.% Change
Deluxe	2.3	1.2	0.0	0.3	1.1	0.3	0.8	1.2	0.7	0.9 %
Luxury	0.2	-0.3	0.2	4.4	1.2	1.2	0.2	6.9	0.8	1.6 %
Upscale	2.9	2.2	3.0	5.9	6.9	4.3	6.1	9.5	2.7	4.8 %
Mid-F&B	0.1	0.3	0.8	-1.0	0.0	-0.6	4.9	0.7	1.2	0.7 %
MidNoF&B	9.0	9.6	11.3	13.9	15.0	12.4	14.0	12.9	4.6	11.4 %
Economy	2.0	2.2	3.5	7.6	3.6	7.5	8.5	4.6	3.4	4.8 %
Budget	4.3	3.1	3.0	0.5	-2.0	10.1	11.8	8.3	3.1	4.7 %
Ext-Upscale	2.3	7.9	1.6	5.3	13.1	31.6	23.5	20.4	7.8	12.6 %
Extend-Low	60.0	28.9	23.1	25.0	17.8	54.2	40.7	31.4	14.6	32.9 %

Source: Bear Stearns 2001, Smith Travel Research 2001, PriceWaterhouse Coopers 2001.

In addition to mergers and acquisitions, the rate of growth for a hotel brand can also depend on the popularity of the product. For example, as Table 8 indicates, certain segments of the industry have been growing faster than others. If a certain brand or product type (e.g. suite properties) are more popular than other products in the market, this can result in higher occupancy rates, higher pricing, and potentially higher profits.

Table 8 illustrates the rate of growth for the nine major hotel segments between 1992 and 2000. Here, the different segments within the hotel industry, which basically represent different products, and different customers, have experienced varying degrees of growth over the last ten years. The extended stay segments, as well as the mid-scale with no food and beverage segment have shown the greatest amount of growth during this period, while the deluxe segment and the mid-scale segment with food and beverage have experienced very little growth during this same time period. Hence, depending on what segment a particular brand belongs to, the growth prospects for that brand may be impacted by the overall performance of that particular segment of the industry (discussed in more detail below).

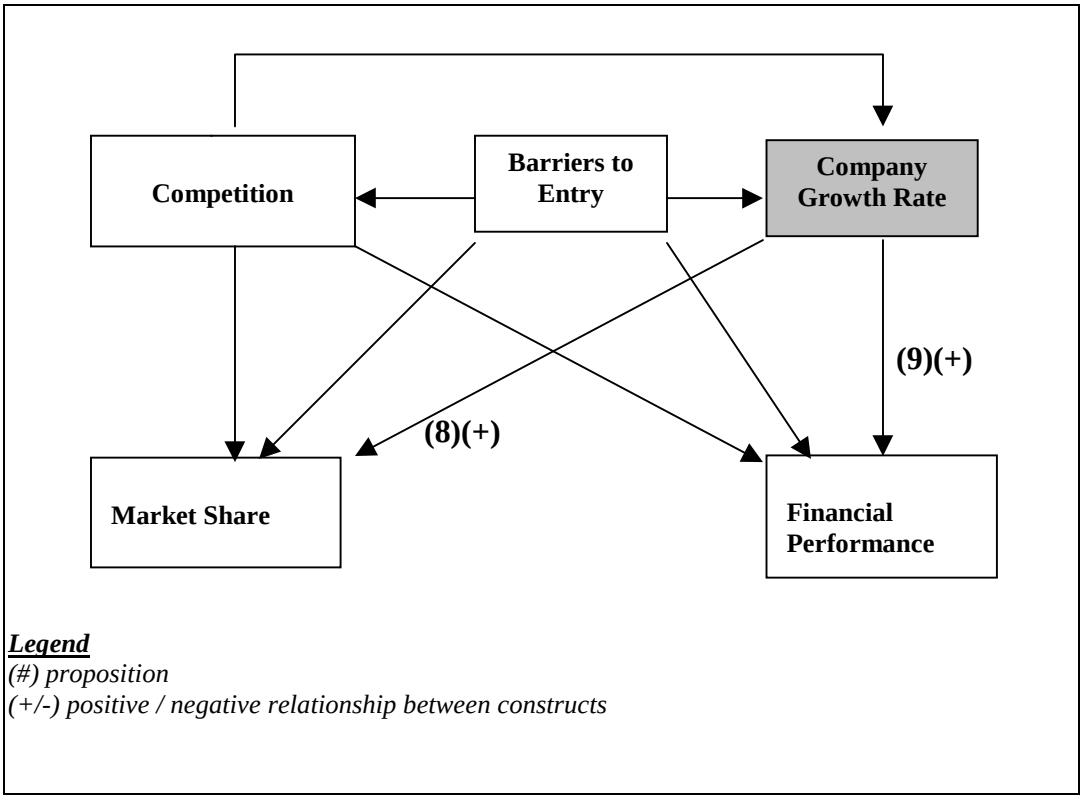

Figure 4 - Proposed Relationships: Company Growth Rate and other Market Structure Constructs.

Therefore, based on the research cited earlier, and the deductions drawn from the industry indicators above, we can state the following propositions:

Proposition 8: If company growth rate increases relative to the market, then market share increases.

Likewise, other studies indicate that, in a mature market, the faster the rate of growth, the larger the increase in profitability. By contrast, firm's that are growing at a slower or declining rate would probably not experience the hypothesized sharp spike in profitability. Hence, we can state the following:

Proposition 9: If company growth rate increases relative to the market, then financial performance increases.

5. Market Share:

Conceptually, market share embodies both a firm's market position, as well as its relative size. That is, market share can communicate an organization's penetration or command of the market (Jacobson & Aaker, 1985). Indirectly, it can also connote a brand's popularity, recognition, distribution capabilities or even perceived quality (Smallwood & Conlisk, 1979; Jacobson, 1988, Aaker, 1996). Basically, market share also conveys a firm's size in relation to other potential competitors, segments, or the market as a whole. The generally accepted definition of market share is the ratio of a firm's performance (based on its revenues, units, volume, employee share etc.) to the total performance of the served market (Bain, 1951; Gale, 1972; Scherer, 1974). Though a useful concept by itself, market share has generated a great deal of empirical research because of its reported impact on financial performance.

The basic premise of this area of research is that a firm's market share affects its attainable degree of financial performance (Kholi, Venkatraman, &

Grant, 1990). Over the years, three differing perspectives have emerged regarding the market share – financial performance relationship which Saghafi (1987) terms 'Radicals, Moderates and Conservatives.' The 'Radicals' argue that market share is the key to superior economic performance (Rumelt & Wensley, 1981; Buzzell, Gale & Sultan, 1975; Wagner, 1984; Gale, 1972; Shepherd, 1972; Buzzell & Gale, 1987). The 'Moderates' admit the importance of high market share to economic performance, but do not discount the effect of other factors (Schmalensee, 1986; Rumelt, 1991). For example, Mann (1966) and Hall and Weiss (1967) found entry barriers to be a more important factor than market share in determining financial performance in certain situations. The 'Conservatives' have a completely opposite view of this relationship. They argue that market share is only a minor or insignificant factor impacting financial performance (Fruhan, 1972; Jacobson & Aaker, 1985; Jacobson, 1988; Jacobson, 1990).

Each of these three schools of thought has varying degrees of empirical support. Indeed, according to Prescott, Kholi and Venkatraman (1986), they could all be correct if viewed from the proper perspective. These authors posit that the market share / market structure-performance phenomenon is context specific, depending on the environment or industry studied. They suggest that it is important to understand the key competitive characteristics of an industry before postulating whether such a relationship may or may not exist within a particular market or industry.

a. Support for Positive MS-FP Relationship:

In the Radicals camp, several authors have empirically established a strong MS-FP relationship. For example, Shepherd (1972) examined a number of market structure constructs, using a sample of 410 firms from 23 different industries between 1960 and 1969. He concluded that market share emerges as the central element impacting financial performance.

One of the most comprehensive reviews of the literature regarding market share, market structure and financial performance was performed by Szymanski, Bharadwaj, and Varadarajan (1993). These authors performed a meta-analysis on research covering the broad spectrum of the industrial organization economics, marketing, and strategic management fields. They analyzed 48 major separate studies in an attempt to resolve some of the confusion regarding the exact nature of market share, market structure and financial performance relationships. In doing so, the authors decomposed the most significant constructs and relationships related to this phenomenon. The authors concluded that, on average, market share does have a positive impact on financial performance across a wide array of industries, but that the relationship is not universal. They also found that market structure constructs such as barriers to entry, growth and competition, did indeed impact both market share and financial performance but with varying degrees of strength. In addition, numerous other studies have also demonstrated support for a positive relationship between market share and financial performance (See Table 9).

The rationale most commonly given by the Radicals camp to explain the association between a positive MS-FP is that higher market share gives firms market power that can be used to extract higher yields from their customers, and or to utilize various efficiencies and economies of scale to reduce operating expenses. For example, Martin (1988) empirically tested both the market power and efficiency explanations for the market share-profitability relationship. Support was found for both hypotheses, suggesting that they are complementary rather than alternative explanations for the observed empirical relationship.

The only piece of hospitality research on the topic of market structure was conducted by Martel (1974). Upon completion of his analysis, Martel reported a positive relationship between market share and profitability for the top eight market share brands. The author attributed the market share leaders' above-

average profits to both market power (superior locations) as well as to economies of scale (national advertising).

Table 9. Studies Indicating Positive Association Between MS-FP (1972-2000)

Author(s) (Year)	Industry Studied	Sample # firms	MS Measure	FP Measure	Method of Analysis	Positive Assoc.
Gale (1972)	Diverse	106	Unit % of Market	ROE	MRA	Yes
Shepherd (1972a)	Diverse	410	% $Sales	ROS	MRA	Yes
Schoeffler, Buzzell & Heany (1974)	Diverse	620	% $Sales	Net Income	MRA	Yes
Buzzell, Gale & Sultan (1975)	Diverse	620	% $Sales	ROS	Cross-Tabs	Yes
Caves, Gale & Porter (1977)	Diverse	535	% $Sales	Net Income	MRA	Yes
Buzzell (1981)	Diverse	1218	%$ Sales	ROI	MRA	Yes
Gale & Branch (1982)	Diverse	1486	Share Index	ROI, ROE	MRA	Yes
Ravenscraft (1983)	Diverse	3168	Unit % of Market	GOP/ Sales	MRA	Yes
Prescott, Kohli & Venketraman(1986)	Diverse	1638	$% Sales	ROI	Path Analysis	Yes
Boulding & Staelin (1990)	Diverse	723	$%Sales	ROS	MRA	Yes
Szymanski, Bharadwaj, & Varadarajan, 1993	Diverse	276	$% Sales	ROI, ROE	MRA /ANCOVA	Yes
Bucklin, Russell & Srinivasan, 1998	Laundry Detergent	300	$ % Sales	Units Sold	MRA	Yes
Dow (2000)	Diverse	42	$%Sales	ROI	MRA	Yes

b. Counter-Arguments to the Positive MS-FP Relationship:

In the Moderate and Conservative camp, various scholars have called into question the blind pursuit of market share as a primary objective of companies. Over the years, many authors have provided cautionary warnings to ensure that competing explanations of superior profitability are considered. Their writings suggest there may be alternative routes to profitability since causality has not been established in the observed correlation between market share and profitability for all industries (Gale, 1972; Woo, 1983). Also, Fruhan (1972) points out that, in the long run, sustaining a high market share position is in contradiction with classical

economic theory (Baumol, 1967) which states that successful companies, processes or products tend to be imitated until their return premium is exhausted. These scholars believe that the forces of dynamic competition inevitably doom any firm that attempts to merely maintain its present way of doing business. Many of these non-supporting studies of the positive MS-FP relationship are outlined in Table 10 below.

Table 10. Non-Supporting Studies of a Positive MS-FP Relationship.

Author(s) (Year)	Industry Studied	Sample # firms	MS Measure	FP Measure	Method of Analysis	Positive Assoc.
Hatten, Schendel & Cooper (1978)	Brewing	13	Volume Units	ROE	MRA	No
Hamermesh, Anderson and Harris, (1978)	Computer Metals Forestry	3 ind.	Unit Sales	Net Income	MRA	No
Schendel & Patton (1978)	Brewing	13	Volume Units	ROE	MRA	No
Bass, Cattin & Wittink (1978)	Consumer Products	63	% $Sales	Net Income	MRA	No
Porter (1979)	Consumer Products	38 Ind.	Leaders vs. Rest	ROE	MRA	No
Rumelt & Wensley (1981)	Diverse	976	Unit % Market	ROI	MRA	No
Woo (1981)	Diverse	112	% $ Sales	ROI	Cluster Analysis	No
Woo & Cooper (1981)	Diverse	649	%$ Sales	ROI	Cluster Analysis	No
Galbraith & Stiles (1983)	Diverse	2100	%$ Sales Top 4	ROS	MRA	No
Phillips, Chang & Buzzell (1983)	Nondurable Goods	623	%$ Sales	ROI	MRA	No
Jacobson & Aaker (1985)	Diverse	2000	$% Sales	ROI	MRA	No

Some authors have also argued that a high share posture may not be appropriate under certain market conditions (Abernathy & Wayne, 1974). Their findings suggest that the MS-FP relationship is either non-significant in certain contexts, or is suppressed by other factors in those environments. For example, Aaker (1986) stated that the MS-FP relationship was either weak or inoperative in the services sector. Likewise, there is empirical documentation that in the baking

industry, a negative relationship exists between market share and financial performance (Bass, Cattin &Wittink; 1978). In addition, these same authors found that the MS-FP relationship was non-significant in the meat packing, dairy, confectionery, and liquor industries. In other cases, Hatten, Schendel and Cooper (1978) and Schendel and Patton (1978) found a positive MS-FP association in the brewing sector at the industry level, but a negative one at the segment-level.

Consistent with the general skepticism regarding the MS-FP phenomenon, several other researchers have demonstrated evidence that refutes the Radicals' position. For example, Gale (1972) discovered that no positive MS-FP relationship existed in industries with low concentration levels. Similarly, several authors have shown that the benefits of market share are only conditional on the presence of stabilizing factors such as effective barriers to entry (Porter, 1979b). Woo, and several associates studied the phenomenon of firms with high market share but with low profitability rates in order to uncover the underpinnings of a negative MS-FP relationship (Hamermesh, Anderson & Harris, 1978; Woo, 1981; 1983; 1984; Woo & Cooper, 1981; 1982). They found the following traits to be common to most low profitability market share leaders. They were more likely to be confronted by 20 or more competitors, they tended to operate in markets with lower real growth (2.9% to 5%), they had older products, and, they competed in many secondary or regional markets where smaller competitors could enjoy very strong support.

c. Hotel Industry Characteristics and Market Structure:

An examination of the composition of the hotel industry, the lodging sector exhibits characteristics that are consistent with both a positive and negative relationship between market share and financial performance.

To begin, there is some evidence to suggest that a negative relationship may be possible. The hotel industry can be characterized as having low concentration levels and many competitors (at least in some segments of the

industry). The hotel industry is in the services sector. Other than large up-front capital requirements, there are no other major significant barriers to entry in the industry. Since a large portion of the industry is franchised, decision-making and strategic execution within brands is difficult. Likewise, with so many disparate owners of hotels, pricing decisions are diffused and subject to local market conditions.

Similarly, there are several other counter-arguments to a positive MS-FP relationship originally posited by Hamermesh, Anderson & Harris (1978) and Woo and Cooper (1982) that could have relevance to the U.S. lodging industry. For example, between 1996 and 1999, a period of relative strong economic growth in the U.S. economy, certain portions of the industry such as the Mid-Price With Food and Beverage segment, have exhibited characteristics of a negative MS-FP relationship such as a slow growth rate, twenty or more direct competitors in the segment, and a presence in smaller markets. During the same period, various other segments including Luxury, and Deluxe also have had slow rates of growth but they do not have many competitors, and are not in smaller markets. On the other hand, segments such as Economy and Budget have many competitors, and are in some smaller markets, but their rate of growth has been relatively solid over the last ten years. Hence, it would appear that there is only one segment of the U.S. lodging industry that fits the criteria outlined above for a potential negative MS-FP relationship.

Conversely, to help determine if there is the likelihood that a positive market share – financial performance relationship may be present in an industry, several studies have established various milestone criteria which have proven to be valuable precursors of such an association (Kholi et al, 1990; Szymanski et al, 1993). Hence, by considering these criteria first, we may be able to obtain some insights whether or not a positive relationship is likely. They are as follows:

1. Consumer Goods Industries: A number of researchers have found a stronger MS-FP relationships in consumer goods industries as

compared to producer goods industries (Shepherd, 1972; Caves, Gale & Porter, 1977; Ravenscraft, 1983).

2. Infrequently Purchased Products: Buzzell, Gale and Sultan (1975) found that this association is stronger for infrequently purchased products such as durable goods (e.g. automobiles, homes etc.), as compared to frequently purchased items such as groceries, cosmetics, gasoline or stationary items.
3. Defined Market Boundaries: Day and Wensley (1988) argued that the MS-FP relationship is more likely to be exhibited in markets with relatively stable boundaries and/or limited substitutes.
4. Mature Industries: Several scholars have concluded that the market share – financial performance relationship was stronger in mature industries with a moderate rate of growth as compared to ones with rapid or declining growth (Gale, 1972; Shepherd, 1972; Caves, Gale & Wittink, 1978; Prescott, Kholi & Venkatraman, 1986).
5. Heterogeneity within the Industry: Several researchers have found that a positive MS-FP relationship is more likely to be found in industries where heterogeneity of products and services is more prevalent. Specifically, if there is segmentation, or price variation in the industry, the MS-FP relationship is likely to be stronger (Bain, 1951; Buzzell, Gale & Sultan, 1975; Schendel & Patton, 1978; Hatten, Schendel & Cooper, 1978; Gale & Branch, 1982).

Upon considering the criteria outlined above, the U.S. hotel industry may be fertile ground for a positive market share – financial performance relationship. Certainly, the lodging industry relies heavily on consumer-direct purchases (Crawford-Welch, 1990; Yesawich, Pepperdine & Brown, 1998). For the average traveler, hotel accommodation purchases are made relatively infrequently, usually several times per year (Yesawich, Pepperdine & Brown, 1998). The lodging sector has reasonably well-defined boundaries, though there are various substitutes for hotels and motels, such as staying with friends and family,

campgrounds, time-share facilities, or using recreational vehicles. The U.S. hotel industry appears to have reached a mature stage (Crawford-Welch, 1990; Rushmore, 1990; Murthy, 1994). As mentioned earlier, the hotel industry has several market segments, with different dynamics and customers, along with a wide range of price points (Crawford-Welch, 1990; Coopers & Lybrand, 1997; Bear Stearns, 1997; Yesawich, Pepperdine & Brown, 1998).

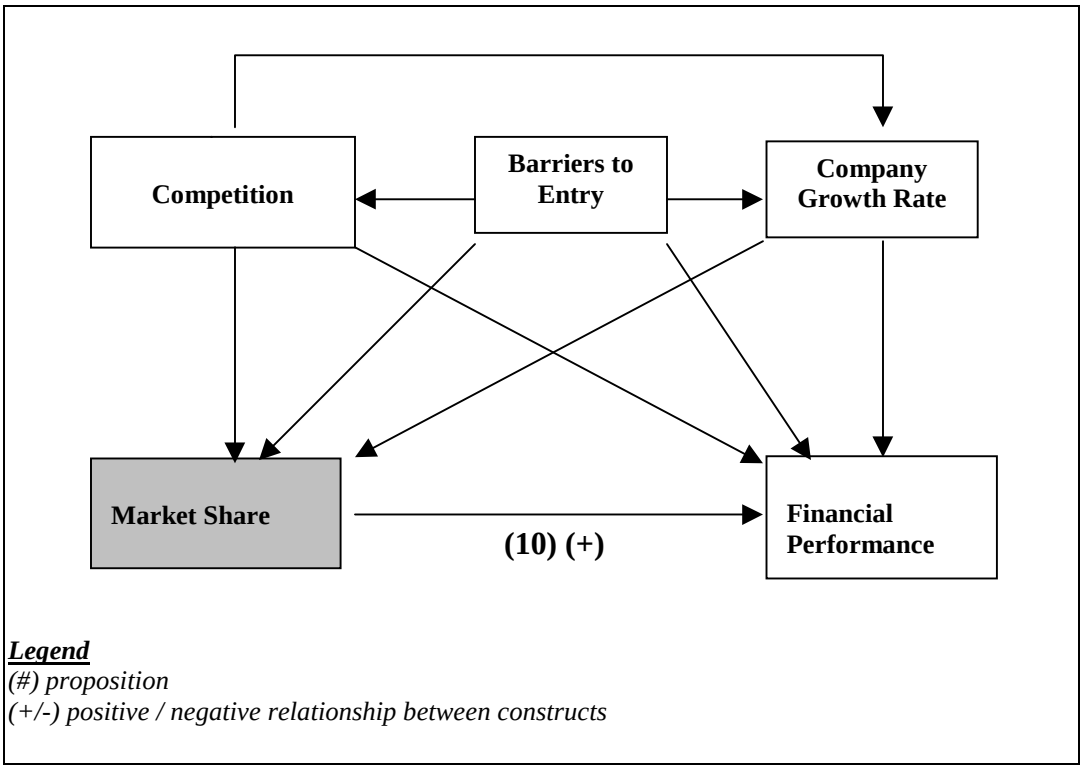

Figure 5- Proposed Relationships: Market Share with other Market Structure Constructs, and Financial Performance.

Despite some characteristics of a potential negative MS-FP relationship, the screening conducted above, and rationale behind it, along with strong supporting empirical evidence from a variety of industries, there appears to be an adequate basis to suggest that a positive relationship may exist between market share and financial performance. This, in conjunction with Martel's (1974)

conclusions regarding a positive MS-FP relationship in the hotel industry 27 years ago allows us to put forth the following proposition.

Proposition 10: As market share increases, the financial performance of companies increases.

Nevertheless, given the size of the Mid-Rate segment, relative to the overall industry, we can expect that this predicted positive MS-FP relationship for the entire industry may be weak. This proposition is illustrated in Figure 5.

6. Financial Performance:

Research related to the broader concept of "performance" tends to focus on four issues: defining performance, deciding what to measure, deciding how to measure it, and deciding how to compare that performance (Frazier & Howell, 1983). Accordingly, each of these issues will be explored.

a. Definitions:

Over the years, scholars have developed differing opinions regarding which concepts are optimal or appropriate for interpreting the performance of firms (Cameron & Whetten, 1983). Performance as a theoretical construct can be defined as the accomplishments or outcomes of an organization or entity (Frazier & Howell, 1983). The derived construct is economic performance which Lusch and Laczniak (1989) define as the total economic results of the activities undertaken by an organization. Ultimately, financial performance is the corporate counterpart of economic performance (Fredrickson & Mitchell, 1984).

Snow and Hambrick (1980) felt that a multifaceted phenomenon such as performance is difficult to understand and measure. Bedian (1986) pointed out that performance had numerous explanatory variables, divergent definitions and

unintegrated analysis. Anderson (1982) categorized organizational performance theories into two types – economic and behavioral. The economic perspective focuses on the importance of external market forces such as competitive positioning. The behavioral perspective considers organizational and sociological paradigms and their fit with the environment (Tvorik & McGivern, 1997). Venkatraman and Ramanujam (1986) argued that business performance is a subset of the overall concept of organizational effectiveness. These researchers view the domain of business performance at three levels: financial, operational, and organizational effectiveness. They believed that most studies of performance restrict their focus on the first two levels, rather than including the third.

Going one step further, some academics have pondered if the performance of companies should be preferred over constructs that are of greater importance to society at large, such as corporate responsibility, or contributions to their community's quality of life (Steers, 1975). Conversely, Randolph and Dess (1984) believed that interpreting performance of business organizations by using financial criteria is quite appropriate. Likewise, Snow and Hambrick (1980) stated that financial performance alone was acceptable in comprehending organizational effectiveness citing the many benefits that profitable and well-run companies provide for society and for their relevant stakeholders. Accordingly, financial performance appears to be the most appropriate concept for the purposes of this study.

b. Measurement

Traditionally, scholars from the fields of marketing, industrial organization economics, and strategy have utilized various measures of financial performance. Most of these measures are consistent with actual industry indicators used by accounting and management professionals. Based on a multi-industry survey, Woo and Willard (1983) showed that respondent companies used a variety of measures. In total, 14 separate measures of performance were identified in their study. These included net income, ROI, ROS, growth in revenues, cash flow per

investment, market share, market share gain, product quality relative to competitors, product R&D, variations in ROI, percentage point change in ROI, and percentage point change in cash flow per investment. Each of these financial indicators are not exactly equivalent, although they tend to be correlated. Neely, Gregory and Platts (1995) posit that the level of performance that a business attains is a function of the efficiency and effectiveness of the actions it undertakes. They also define a performance measurement system as the set of metrics used to quantify both efficiency and effectiveness. Financial measures such as ROI, ROE, and others have been used considerably in multi-industry comparisons, and less so in single industry evaluations (Gale, 1972; Bass, Cattin & Wittink, 1978; Hatten, Schendel & Cooper, 1978; Porter, 1979; Buzzell, 1981; Rumelt & Wensley, 1981).

Unfortunately, in the hotel sector development of industry-specific measures of financial performance and its various economic outcomes are still in its infancy, both at the hotel-level and at the corporate-level (Phillips, 1999; Brander, Brown & McDonnell, 1995). Hence, many of the financial measures used in other industries mentioned earlier have also been utilized in hospitality research. For example, in a study of 35 major hotel brands, Hou (1994) used ROI and growth in unit sales to measure financial performance. In his analysis of 204 U.S. lodging firms Dev (1988) used gross operating profit (GOP) as a dependent variable. Murthy (1994), in a study of 579 hotels used yield per room, net income, market share, and ROI as performance measures. Phillips (1999) used both ROI and market share as part of a broader performance model. Hence, it would appear that hospitality scholars have explored a variety of financial measures to gage firm performance, most of which are consistent with Woo and Will's multi-industry findings. In addition, numerous hospitality scholars have used occupancy and average daily rate ("ADR") as descriptors or independent variables to measure hotel performance since these statistics are widely reported throughout the industry (Damote, Rompf, Bahl & Domke, 1997).

c. Performance Comparisons:

When selecting constructs to accurately describe the performance of lodging entities, researchers should attempt to select concepts and indicators that lend themselves to direct comparisons between the entities in question (Murthy, 1994; Phillips, 1999). In the past, some of these problems related to performance comparison within the hotel industry stem from the disjointed ownership and operating structure that exists within the U.S. lodging market, with its many organizational formats and legal entities. In addition, studies of financial performance success at different levels of analysis have also made comparisons difficult (Frazier & Howell, 1983). Hence, there needs to be a clear identification of the unit of analysis and the level of analysis, in order to apply the appropriate measures of financial performance (Baker & Hart, 1989).

The unit of analysis refers to the type of unit a researcher uses when measuring variables (Newman, 1991). Generally, the unit of analysis corresponds to a level of analysis. The level of analysis is the level of social reality to which theoretical explanations refer. The level of social reality varies on a continuum from micro level (e.g. individual processes) to macro level (e.g. civilizations, fundamental societal movements, economic markets) (Newman, 1991). The level of analysis also considers such factors as the number of entities, the amount of space, the scope of activity, and the length of time (Newman, 1991). In the field of economics, the various levels of analyses include the following: Global Economy, National Economy, Industry, Segment, Conglomerate / Multi-Brand Firm (Corporate Level), Brand, Branch Office / Store / Outlet / (Hotel), Department.

Studying how the different levels relate and build on each other can provide a wealth of knowledge. Indeed, researchers have found correlations between one level of analysis with either higher or lower levels of analysis. For example, the level of profitability in an industry can also be a strong indicator of an individual firm's profitability level (Porter, 1979a; Collis & Montgomery,

1997). Also, higher levels of analysis can provide information not available at lower levels of analysis. For example, Johnson and Fornell (1991) found that the use of brand-level data, (as compared to transaction-specific level data) better reflected overall market forces and consumer buying decisions. They stated that conducting an analysis with brand-level data may provide greater insight into the dynamics of an industry, thus allowing researchers to gain a perspective not available using only transaction-level data. Most obviously, the major benefit of using brand-level data is the greater generalizability of the research results.

Nevertheless, researchers should be careful not to overstep their actual results. Relationships among units at one level do not necessarily hold true for different units of analysis at a higher or lower level. Hence, it is important to attain a match for all constructs and variables with the proper level (Babbie, 1989). Mismatched units can create two types of theoretical problems: an ecological fallacy or reductionism. An ecological fallacy occurs when a researcher is gathering data at a higher / aggregated unit of analysis but draws inferences about a lower/disaggregated unit (Newman, 1991). For example, if one was to collect industry-level data, but then state that individual firms behave in a certain fashion, this would be an ecological fallacy. On the other hand, reductionism can occur when a researcher gathers data at a lower level, but makes statements regarding causal relationships of higher-order units (Newman, 1991). An example of this would be to over-generalize the results based on a small or unrepresentative sample of companies, and subsequently make broad predictions about an entire market.

Within the U.S. lodging industry, financial performance comparisons are also impeded by the following issues:

a. Organizational Orientation: The differences in an organizations orientation makes performance comparisons difficult. For example, some U.S. hotel companies are primarily franchisors, some are management companies, some are investors, and some are owner-

operators. By virtue of their structural differences they also have disparate sources of revenue. These revenues can be derived from franchise fees, management fees, and/or actual income from accommodation rentals. For example, companies such as Cendant (Ramada, Howard Johnsons, Wingate Inns etc.) derive all of their revenues from franchise fees, while Red Roof Inns generate revenues solely from hotel operations. These different types of activities have differing cost structures, and ultimately, different profitability levels (PriceWaterhouse Coopers, 1997; Smith Travel Research, 1998). Hence, comparing their financial performance is difficult since they are essentially different types of companies, despite being in the same industry.

b. Legal / Ownership Structure: Most hotels in the United States are privately owned (PKF Consulting, 1993; Coopers & Lybrand, 1997). Conversely, most hotel brand trademark holders in the U.S. are public companies (PKF Consulting, 1997; Coopers & Lybrand, 1997). In addition, many of these public companies are predominantly franchise organizations. These ownership differences create disparities in capital structure, thus making investment and return comparisons awkward. One primary reason for this is that their sources and cost of capital are significantly different. Hence, comparisons of investment efficiency are muddied by these various ownership forms. For example, some public companies such as Extended Stay America invest 100 percent equity to fund new hotel developments, while other public entities such as Choice Hotels International take no equity participation in hotels. In the middle are some privately owned brands such as Hyatt that usually invest a small amount of equity in a project in order to obtain the management/franchise agreement for a particular development. These return comparisons are further clouded by international stock-swap transactions such as Accor's entry into the

U.S. market, or REIT-based leveraged buyouts such as Starwood's purchase of ITT Sheraton (Bear Stearns, 1999).

c. Multi-Industry Conglomerates: Several hotel brands are owned by larger conglomerates that span multiple industries (e.g. Cendant, Bass, Accor). In many cases, their reporting is done at the multi-national level for various tax and accounting reasons. As a result, most expenses are not itemized in sufficient detail in their annual financial statements. Hence, brand-specific performance information is not publicly available. Similarly, from a cost allocation perspective, these conglomerates share various overhead resources such as marketing, administration, accounting, human resources, finance etc., as well as taking advantage of favorable exchange rate opportunities that present themselves throughout the different countries they operate in. An example of this type of entity is Bass PLC, which is a British company that owns the Holiday Inn brands. In their annual report, Bass only provides aggregated data for their income statement covering all operating divisions include brewing, pubs, real estate etc.

d. Conflicting Financial Objectives: The actual financial objectives may also be at odds between different hotel-related stakeholders. For example, franchisors are often more interested in maximizing revenues of the franchise system, while franchisees are more concerned about increasing net profits (Rushmore, 1998). Similarly, hotel management company's also have a top-line orientation rather than focusing on improving the bottom line since most management contracts are based primarily on gross revenues. Hence, comparisons of these different types of organizations can produce performance disparities (Rushmore, 1990).

One example of how inappropriate comparisons of mismatched units can bring study results into question is Martel's (1974) analysis of the U.S. lodging industry. Specifically, Martel's profitability comparisons of the top eight market share brands to average industry profitability levels appear to have violated an ecological fallacy. Specifically, the profitability of the top eight market share brands used in his study were those of the corporate-level franchise organizations, and not the collective profits of the privately-owned hotels that are traditionally aggregated to come up with industry-wide totals (Smith Travel Research, 2000; PriceWaterhouse Coopers, 2000; Bear Stearns, 2000). Hence, Martel was comparing dissimilar units. He collected data at the parent company-level (who's revenues and profits were made up of primarily franchise fees), when the unit of analysis was really the brand (who's revenues and profits are made up of actual hotel operations of the collective properties affiliated with that brand). In addition, his sample size consisted of only eight brands, and yet his conclusions made generalizations about the hotel industry as a whole (an example of reductionism). Nevertheless, Martel's research provided valuable insight into the hotel industry of the time, and was another important step in mapping the competitive structure of the U.S. lodging market.

d. Focus of Measurement:

Hospitality researchers have measured the financial performance for all of the various legal entities discussed above, as well as individual hotels and industry-wide analyses (Martel, 1974; Van Dyke, 1985; Schaffer, 1986; Tse,1988; Ingram,1994; Kwansa, 1994; Choi, Olsen, Kwansa & Tse, 1999; Chang, 2000, Singh, 2000). In each study, the economic entity (unit of analysis) was selected based on the research question at hand.

For the purposes of this investigation, the financial performance of hotel "brands" will be investigated. That is, the brand is offered as the unit of analysis for this study. Hotel brands were selected over the other organizational and legal entities since they are the focal point for most industry stakeholders. These

include hotel owners, investors, franchisors, lenders, consumers, and regulators. Despite the different ownership, management, franchise combinations and structures that exist, the brand emerges as the common denominator when looking at comparisons that span the broadest cross-section of the U.S. hotel industry for the following reasons:

a. Brands appear to be the most resilient in surviving different ownership changes both at the franchisor level (e.g. the purchase of Promus by Hilton) (Frabotta, 2000), or at the individual property level (e.g. most branded hotels are contractually bound to a franchise agreement for the customary 20-year term regardless of hotel ownership) (Rushmore, 1991).

b. For the most part, consumers rely on the brand name when making their purchase decisions, since in many cases they do not know the individual hotel owners, or the brand parent organization (Rushmore, 1991).

c. Most hotel investment decisions on the part of owners and investors are based on brand availability, its viability in a particular market, and the brands development specifications.

d. Project financing for most new hotel developments or refinancing opportunities are contingent on affiliation with a recognized brand (Hanson, 1990).

e. Government regulators scrutinize the representations made in the Uniform Franchise Offering Circulars of franchised brands (Khan, 1992)

Based on these points, it would appear logical to use the aggregate financial performance of the set of hotels that collectively make up a brand. An analysis of hotel brands will provide the broadest cross-section of performance for the hotel industry. Conversely, focusing on corporate brand-parent companies, or management companies, would limit the generalizability of the results since these entities represent only a portion of total industry revenues and profits, and do not accurately reflect the financial model of most hotels in this country.

Ultimately choosing the appropriate hotel performance indicators depends on establishing clear scope parameters for the lodging-related entities in question. These parameters should clearly identify the type of organization, the time frame, the segment, the geographic region etc. Likewise, it is important to compare like-kind entities. If comparisons of performance are to be done, similar entities should be appropriately matched. Hence, hotels should be compared to hotels, brands against brands, management companies versus management companies, franchisors with franchisors, segment to segment, market to market and so on. If these procedures are not followed, the financial performance measures selected may not have the intended relevance, and may be unsuitable to address the intended research question. This study attempts to integrate these ideas both at the conceptual level, as well as the empirical level.

7. Summary of Literature Review and Comprehensive Model:

Upon examination of the related literature in this chapter, five constructs have been identified (barriers to entry, competition, growth, market share, and financial performance) which are to be used in addressing the research questions outlined in Chapter 1. In addition, a theoretical framework has emerged which connects these five constructs. Though there appears to be sufficient theoretical and empirical research on this topic within other disciplines, the hospitality field appears to be somewhat lacking regarding this subject matter. Therefore, this lack of research, and the broad economic implications associated with the identified constructs, lends credence for further investigation into this topic. This study can be considered exploratory due to the lack of well-developed conceptual and measurement frameworks within the lodging research.

The conceptual framework mentioned above is illustrated as a model (hereafter referred to as the “Lodging Market Structure”(LMS) model). The LMS

model, shown in Figure 6 is based on the propositions put forth throughout this chapter. The model shows that the barriers to entry construct impacts competition, negatively, and growth, market share and financial performance positively. Competition is shown to have a negative affect on company growth rate, market share and financial performance. Company growth rate has a positive impact on market share and financial performance. Lastly, the LMS model illustrates that market share has a positive relationship with financial performance.

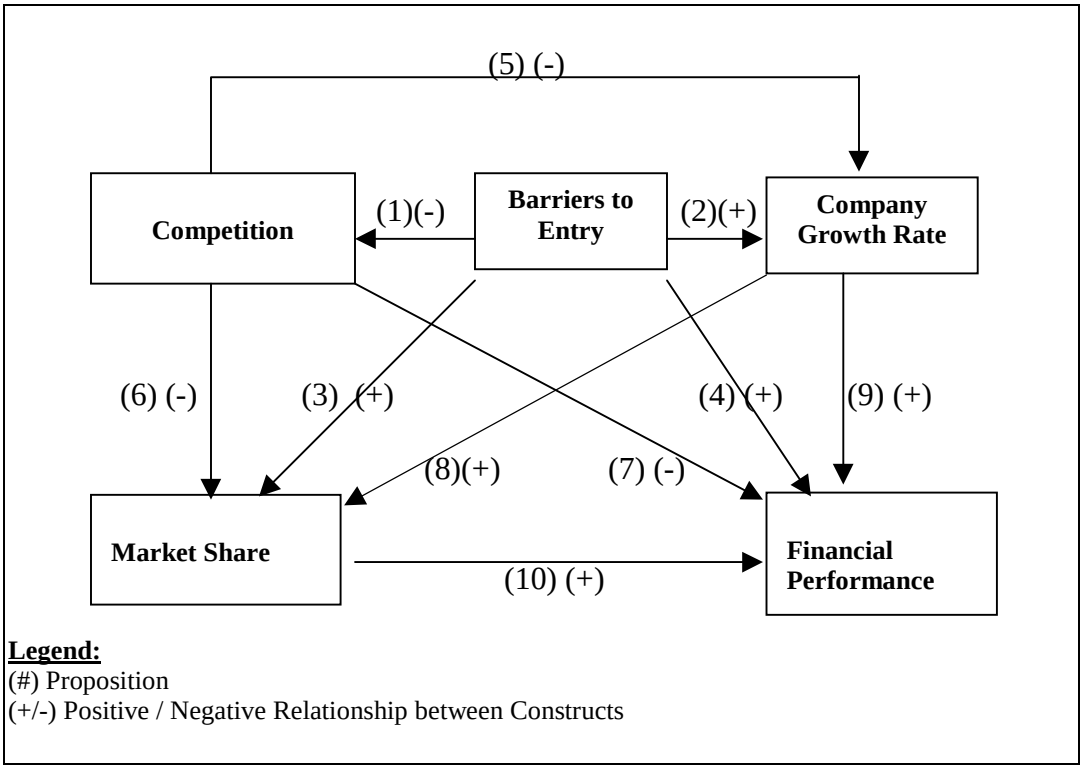

Figure 6- The Lodging Market Structure (LMS) Model

Having discussed the theoretical aspects of this investigation, we now turn to some of the methodological issues in Chapter 3.

CHAPTER III
Research Method

Following the theoretical framework developed in Chapter 2, this chapter discussed the variables selected to operationalize the five constructs in the LMS model. In addition, this section covered, among other things, the study assumptions, the research questions, the hypotheses, operationalized variables and the proposed statistical analysis.

1. Objectives of the Study:

As discussed in Chapter 1, this analysis proposed to address the following research questions:

Research Question One: " Does the competitive market structure of the U.S. lodging industry impact the financial performance of hotel brands?"

Research Question Two: "Is there a relationship between a hotel brand's market share and its financial performance in the U.S. lodging industry?"

Research Question Three: " Does the competitive market structure of the U.S. lodging industry impact a hotel brand's market share"

McGrath (1982) stated that the objective of most studies is to contribute to the knowledge accrual process, by striking the right balance between replication and triangulation. In this case, the LMS model addressed the research questions above. In addition, this analysis will compared the results to related research in

other industries, as well as Martel's (1974) conclusions from a quarter century ago. These efforts hopefully addressed both the issues of replication and triangulation covered by McGrath.

2. Theoretical Boundaries:

Before proceeding further, a discussion of the theoretical boundaries are presented, in order to establish the model's parameters, and to place the constructs in the proper context. They are as follows:

a. Branded Hotels versus Independents: This study is confined to branded hotels in the U.S. and does not include independent properties. Branded hotels represent approximately 70 percent of the lodging market, while independents represent the remaining 30 percent (PriceWaterhouse Coopers, 2000). Independent hotels were not included in this study because financial performance data for these entities is generally not available.

b. Brands versus Corporate-Level Entities: This study also focused on the aggregated performance of hotels affiliated with a specific brand. However, this analysis did not include the corporate entities / franchise companies that are the parent organizations or trademark owners of some of these brands. Based on the issues discussed in Chapter 2 relating to Financial Performance, the collective hotels affiliated with a brand are not comparable to these multi-brand corporate entities since they are different types of organizations, both functionally, and theoretically. For example, this study included the collective performance of hotels affiliated with the Sheraton brand, but did not include the financial performance of Starwood Hotels & Resorts, the parent of Sheraton. Certainly, an analysis of brand-parent companies such as Hilton Hotels Inc., Marriott International, Bass PLC, Choice International, Cendant and others would be a worthy research endeavor and may warrant future analysis, however, it was beyond the scope of this investigation.

c. Economic Environment: Since the proposed sample was drawn from the U.S. lodging industry, consisting of national brands with broad geographic dispersion, the assumption was made that they are all subjected equally to the same general economic conditions and other exogenous factors, or events that may influence the industry as a whole. Thus, variations in the general economy and their impact on hotel brands in this study were essentially controlled (Ravenscraft, 1983; Hall, 1987; Hou, 1994).

d. U.S. Hotel Industry: This analysis applies only to the U.S. lodging market. The academic and industry literature selected for this study focused solely on the environment and conditions within the U.S. lodging sector. Accordingly, the relationships and market structure proposed in this document are based on the characteristics of the U.S. lodging market only. Examples of this include the level of maturity of the U.S. lodging market (Crawford-Welch, 1990; Rushmore, 1994), and the level of dominance of U.S. hotel brands within the U.S. (PriceWaterhouse Coopers, 1999). Many other countries have emerging lodging markets, and their competition is centered around independent operators instead of chains (Marriott & Brown, 1997). Therefore, making any generalizations about the results of this study beyond the U.S. lodging sector may be inappropriate.

e. Time Frame: This study looked at a four-year period between 1996 and 1999. According to many economists and numerous media reports, this was a period of strong economic growth, where the hotel industry benefited significantly (PriceWaterhouse Coopers, 2000). As indicated in Table, 1, the hotel industry experienced record profits during that period. Hence, the results of this analysis should be viewed in that light, and may be inappropriate for slower economic periods such as the recession that occurred at the beginning of the 1990's or economic slowdown that followed the terrorist attacks of September 11th, 2001.

3. Unit of Analysis:

As discussed in Chapter 2, the unit of analysis for this study was the hotel brand.

4. Sampling Frame:

The population for this study was hotel brands. Hence, the sampling frame for this analysis was made up of the 188 branded hotel chains doing business in the United States. This list was drawn from the American Hotel and Lodging Association Membership Directory (2001), and was cross-referenced with the Bear Stearns Annual U.S. Lodging Almanac (2001).

Deciding on the sampling frame required a definition of the population in question, or in this case the industry in question. Hayes (1952) cited over ten definitions that described the lodging sector. Martel (1974, p.34) used the definition adopted by Hayes and adhered to by the U.S. Bureau of the Census: "Establishments engaged in providing lodging or lodging and meals to the general public." Establishments which derive a substantial portion of their revenue from permanent residents are excluded (i.e. rooming houses, boarding hotels, private clubs, and lodging houses). In addition, the gaming, time-share, executive apartment, and senior care sectors are considered close cousins of the hotel industry (Rushmore, 1991). However, for various legal and financial reasons, their economic models differ from the hotel industry and hence are not generally considered core segments of the commercial lodging sector (Rushmore, 1991; DeRoos & Corgel, 1996; Laventhol & Horwath, 1986). For the purposes of this study, we focused on branded hotels with 20 or more rooms located within the United States of America, consisting of five or more properties, providing daily and weekly accommodation to the general public (Bear Stearns, 2000; Smith Travel Research, 2000; PriceWaterhouse Coopers, 2000).

5. Time Frame:

The overall time frame of the study covered a period between 1996 and 1999. These years were selected since they represented the most current data available on the industry at the time. In addition, this period had shown a significant amount of consolidation activity, and growth in various segments of the lodging industry, along with strong financial performance (Watkins, 2000; Ruggless, 2000; Cook, 1997; Frabotta, 2000; Lamanno, 2000; Sheridan, 1997; Andorka, 1997).

This study analyzed the relationships in the LMS model by conducting two sets of multiple regression analyses (MRA). The first MRA set was for 1996 and 1997, while the second MRA will be for 1998 and 1999. These two-year periods will be averaged, thus accounting for the possibility that certain market and environmental interactions take longer than others to manifest (time lag – see below).

One measurement issue that tends to impact economic, strategic and marketing research is that of time lag (Porter, 1979b; Ravenscraft, 1983). Time lag refers to the time elapsed between events, marketing campaigns, economic conditions or environmental forces and the actualization of financial results that follow those events or conditions. In general, the impact of market forces on industry, corporate and strategic business unit performance tends to be characterized by a relatively longer time horizon (Weiss, 1974). Several authors have found that using multi-year averages versus one-year estimates may be better indicators of the true impact of market structure forces (Ravenscraft, 1983; Hall, 1987). Multi-year averages may also provide a better picture of the central tendency of business performance when financial results fluctuate as a result of cyclical or seasonal environmental shifts (Hall, 1987). For example, Weiss, (1974) and Ravenscraft (1983) observed higher correlations in the MS-FP

relationship in recessionary years versus more robust years. Hence, the effects of these external factors can be smoothed out through the use of multi-year average measures.

Within hospitality research, only a few scholars have addressed this issue so far. Crawford-Welch (1990) measured various strategy constructs for 1988, and matched them with 1989 financial performance. Similarly, Murthy (1994) averaged 1991 and 1992 strategy and compared it to the averaged performance of 1992 and 1993. Most other cross-sectional hospitality studies used just one-year periods, which may have underestimated the true impact of the environmental or other market forces.

6. Operationalization of Constructs:

Table 11. Summary of Study Constructs and Proposed Variables:

Construct	Variable Name	Operational Definition
Financial Performance	EBITDA	A brand's earnings before income taxes, depreciation, and amortization per hotel
Market Share	Revenue Share	The ratio of a brand's revenues to the total revenues of all brands.
Barriers to Entry	Development Cost Barriers	Development cost per hotel for each brand
Company Growth Rate	Relative Growth	The individual brand's revenue growth as a ratio of the total growth rate of all brands.
Competition	Number of Competitors	A brand's direct + indirect competitors (direct competitor equivalents)

Table 11 below provides a summary of the constructs and the variables used to measure them. The study constructs were measured using only one variable per construct. Though this is not the ideal methodology (Babbie, 1989),

obtaining variable data for 67 brands was extremely difficult (see discussion below) Each of these variables is discussed accordingly.

a. Financial Performance:

In this study, earnings before income taxes, depreciation and amortization ("EBITDA") per hotel was used as the measure of financial performance. EBITDA is a derivative of net income. Net income has been found to be a particularly useful indicator of financial performance in industry-specific studies (as compared to multi-industry studies)(Shepherd, 1972a; Schoeffler, Buzzell & Heany, 1974; Buzzell, Gale & Sultan, 1975; Caves, Gale & Porter, 1977; Ravenscraft, 1983).

Return on investment, or return on equity were not selected as the measures of financial performance since information on equity investment levels are problematic and generally not available for enough hotel brands to conduct a statistically significant analysis (Hou, 1994). In such instances, net income is the preferred measure over ROI, or ROE because the later measures are effected by variations in depreciation methods, depreciation schedule terms, differing ownership and legal structures and the precision of reporting profits due to tax considerations (Galbraith & Stiles, 1983). ROI and ROE measures of performance, which are derived via accrual based accounting methods have also come under certain criticism over the last few years (Smith, 1995). In addition, these issues become even more confusing when conducting multi-year studies due to changes in the tax code and commensurate accounting practices from year to year. EBITDA was used in a study of hospitality financial performance by Van Dyke (1985). Likewise, Dev (1988) used gross operating profit, a measure similar to EBITDA in his doctoral dissertation. Hence, for clarity and parsimony, EBITDA was selected as the most pragmatic measure of financial performance for this study.

b. Market Share:

Previous researchers have identified several key issues related to the measurement of market share. For example, Wind and Mahajan (1981) stated that researchers should address the following frames of reference when considering market share measurements.

a. Market definition: Is the market broadly defined or is it narrowly defined? All else being equal, a broad definition of the served market will yield a lower market share measure than a narrow definition of the served market.

b. Time frame: Is market share being measured for a specific day, week, month, year or decade? Due to various cyclical and seasonal fluctuations, firms can show a great deal of fluctuation over these varying time frames.

As mentioned earlier, the time frame of this study was between 1996 and 1999. The market definition has already been addressed in the sampling frame above.

Another primary concern is which definition of market share should be used? The two leading definitions are absolute market share and relative market share. These two different measures of market share have shown variances in market share elasticities found across studies (Varadarajan & Dillon, 1982). Absolute market share is the ratio of a particular business' activities relative to total activity in the served market (Bain, 1951). This definition is preferred when specific industries are studied. On the other hand, relative market share is the ratio of a business' market share to the combined market share of the top four or eight firms (Bain, 1951; Demsetz, 1973). This definition is preferred when cross-sectional data is pooled and compared across multiple industries (Varadarajan & Dillon, 1982; Buzzell & Gale, 1987).

Accordingly, for the purposes of this study, an absolute market share measure was used. Specifically, a brand's market share was measured as the ratio of the aggregate revenues of the collective hotels affiliated with that brand, relative to the collective revenues generated by all U.S. lodging brands for each year between 1996 and 1999. This definition of market share is consistent with

the majority of studies reviewed in this field (Shepherd, 1972a; Schoeffler, Buzzell & Heany, 1974; Buzzell, Gale & Sultan, 1975; Kholi, Venkatraman & Grant, 1990; Szymanski, Bharadwaj, & Varadarajan, 1993)

c. Competition:

Quantifying the number of competitors that a brand has is a logical measure of the competitive environment. Hence, the competition construct was operationalized using a competitor index (Rushmore, 1991) which approximates the number of competitors that could be classified as "direct- equivalents" for each brand in the study. Basically, the competitor index is calculated by adding the number of direct competitors in a brand's segment plus the number of indirect competitors it might encounter from other segments due to price overlaps of both brands. The degree of price overlap is measured, and aggregated with other potential indirect competitors to produce the number of "direct competitor – equivalents." A complete step-by-step calculation methodology is provided as Appendix B to this study.

d. Company Growth Rate:

Measurement of the growth factor was accomplished using changes in brand revenues. Measuring changes in "revenues" for the hotel brands accounts for both unit increases (new hotels), as well as increases in same-store sales from the previous period (as compared to measuring just unit or room growth). Specifically, "relative growth", was used to measure this construct. Relative Growth is defined as the ratio between an individual brand's revenue growth (consisting of the aggregate revenues of the collective hotels affiliated with each brand) and the total revenue growth for all brands for a specific time period. In this case, the time period was in one-year increments. Hence, this measure will account for both internal brand growth as well as market growth. This relative measure of growth is consistent with several studies, including Shepherd (1972a), Gale (1972), and Healy, Palepu and Ruback (1992), Dow, (2000).

e. Barriers to Entry:

To operationalize the entry barriers construct, the average hotel development cost for each respective brand was used. This measure was selected since major capital expenditures are considered one of the primary barriers to entry in a wide variety of industries (Bain, 1956; Mann, 1966; Hall & Weiss, 1967; Avgeropoulos, 1998). In addition, hotel development costs have been cited by several researchers as a major deterrent to market entry due to risks associated with the large up-front investment (Martel, 1974; Rushmore, 1991, 1998; Hanson, 1991; Chung, 2000).

7. Hypotheses:

Based on the literature review in Chapter 2, and the variables proposed earlier, the following hypotheses were articulated. These hypotheses are illustrated in Figure 7.

Proposition 1: If entry barriers increase, then competition will decrease.
This proposition can now be stated as a hypothesis:

Hypothesis 1: As Development Cost Barriers increase, the Number of Competitors decreases.

Proposition 2: If entry barriers increase, then the growth rate will increase for incumbent firms. This proposition can now be stated as a hypothesis:

Hypothesis 2: As Development Cost Barriers increase, an incumbent brand's Relative Growth increases.

Proposition 3: If entry barriers increase, then market share will increase for incumbent firms. This proposition can now be stated as a hypothesis:

Hypothesis 3: As Development Cost Barriers increase, an incumbent brand's Revenue Share increases.

Proposition 4: If entry barriers increase, then financial performance will increase for incumbent firms. This proposition can now be stated as a hypothesis:

Hypothesis 4: As Development Cost Barriers increases, an incumbent brand's EBITDA increases.

Proposition 5: If competition increases, then the growth rate for incumbent companies will decrease. This proposition can now be stated as a hypothesis:

Hypothesis 5: As the Number of Competitors increases, Relative Growth for incumbent brand's decreases.

Proposition 6: If competition increases, then market share will decrease for incumbent firms. This proposition can now be stated as a hypothesis:

Hypothesis 6: As the Number of Competitors increases, an incumbent brand's Revenue Share decreases.

Proposition 7: If competition increases, then financial performance decreases for incumbent firms. This proposition can now be stated as a hypothesis:

Hypothesis 7: As the Number of Competitors increases, an incumbent brand's EBITDA decreases.

Proposition 8: If a company's growth rate increases, then it's market share increases. This proposition can now be stated as a hypothesis:

Hypothesis 8: As the Relative Growth of brands increases, then Revenue Share increases.

Proposition 9: If a company's growth rate increases, then it's financial performance increases. This proposition can now be stated as a hypothesis:

Hypothesis 9: As the Relative Growth of brands increases, EBITDA increases.

Proposition 10: As market share increases, then the financial performance of companies increases. This proposition can now be stated as a hypothesis:

Hypothesis 10: As Revenue Share goes up, brand EBITDA increases.

Table 12 matches the hypotheses generated above to the research questions originally outlined in Chapter 1. The proposed relationships stemming from these hypotheses are illustrated in Figure 7 below.

Table 12. Summary of Research Questions and Matching Hypotheses

RQ	Research Question	Hypothesis Number
1.	Does the competitive market structure of the U.S. lodging industry impact the financial performance of hotel brands?	1, 2, 4, 5, 7, 9, 10
2.	Is there a relationship between a hotel brand's market share and its financial performance in the U.S. lodging industry?	10
3.	Does the competitive market structure of the U.S. lodging industry impact a hotel brand's market share?	3, 6, 8

8. Operationalized LMS Model:

Consistent with the literature review, and the hypotheses outlined above, Figure 7 illustrates the specified version of the LMS model for this study.

Accordingly, the model shows that Development Barriers impact the Number of Competitors. Also, Development Barriers and the Number of Competitors both have some influence on the Relative Growth of brands. In addition, the Number of Competitors, Development Barriers and the Relative Growth of brands all are hypothesized to impact Revenue Share. Likewise, these three variables along with Revenue Share are shown as having an influence on a brand's EBITDA. The predicted signs for each relationship are also shown in Figure 7.

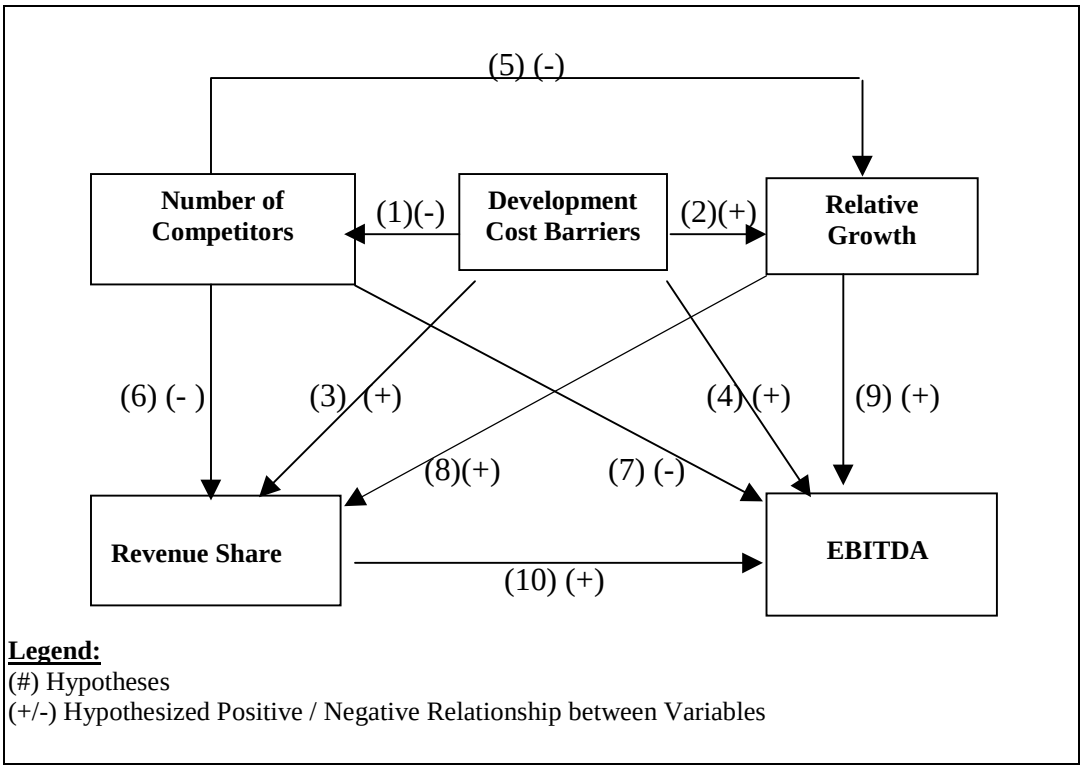

Figure 7- Operationalized LMS Model

With the model specified, we can now proceed to consider the various data sources for the variables, as well as discussing the statistical analyses necessary to test the LMS model. 9. Data Sources:

9. Data Sources:

As noted earlier, the availability of hotel statistical data is limited (Shaffer, 1985, Dev, 1988; Crawford-Welch, 1990; Kwansa, 1994; Hou, 1994; Murthy, 1994; Ingram, 1994). The availability of financial information on national hotel brands is even more scarce. Hence, a variety of sources were utilized in order to obtain the necessary data for the variables identified earlier in this chapter.

Multiple data sources were used for several reasons. The first is that there was no comprehensive source that will yield all of the variable information for all 67 brands. The second reason multiple sources are used was to attempt to validate, and cross-check the information across sources. Thirdly, the study covered a time span of five years (base year plus the four year period of study). This time frame required multiple sources since some of the publications or sources had changed ownership, changed their format or stopped reporting altogether regarding the variables in question. Each variable is discussed accordingly.

a. Relative Growth:

The data for the relative growth variable for each brand was collected from a combination of the following sources: The U.S. Lodging Almanac (Bear Stearns, 1995, 1996, 1997, 1998, 1999, 2000), the Securities and Exchange Commission 10-K corporate filings (EDGAR, 1995, 1996, 1997, 1998, 1999, 2000), the Directory of Hotel and Motel Companies (American Hotel & Lodging Association, 1995, 1996, 1997, 1998, 1999, 2000, 2001) and the Lodging Industry Overview (BT Alex. Brown, 1995, 1996, 1997, 1998; Deutsche Banc Alex. Brown, 1999, 2000).

b. Development Cost Barriers:

The data for the development cost barriers variable for each brand was collected from a combination of the following sources: Uniform Franchising

Offering Circulars (UFOC's) filed with the Federal Trade Commission by each franchised brand, the Franchise Fact File (Lodging Hospitality, 1996, 1997, 1998, 1999, 2000), the Franchised Hotel Brands Survey (Franchise Help, Inc., 1996, 1997, 1998, 1999, 2000) and the Hotel Development Cost Survey (HVS International, 1996, 1997, 1998, 1999, 2000).

c. Number of Competitors:

The data for the development barriers variable for each brand was collected from a combination of the following sources**:** The U.S. Lodging Almanac (Bear Stearns, 1996, 1997, 1998, 1999, 2000), and the Directory of Hotel and Motel Companies (American Hotel & Lodging Association, 1996, 1997, 1998, 1999, 2000).

d. Revenue Share:

The data for the Revenue Share variable for each brand was collected from a combination of the following sources: The U.S. Lodging Almanac (Bear Stearns, 1996, 1997, 1998, 1999, 2000), the Securities and Exchange Commission 10-K corporate filings (EDGAR, 1996, 1997, 1998, 1999, 2000), the Directory of Hotel and Motel Companies (American Hotel & Lodging Association, 1996, 1997, 1998, 1999, 2000, 2001). and the Lodging Industry Overview (BT Alex. Brown, 1996, 1997, 1998; Deutsche Banc Alex. Brown, 1999, 2000).

e. EBITDA:

The data for the EBITDA variable for each brand was collected from a combination of the following sources: The U.S. Lodging Almanac (Bear Stearns, 1996, 1997, 1998, 1999, 2000), the corporate 10-K filings with the Securities and Exchange Commission (EDGAR, 1996, 1997, 1998, 1999, 2000), the Green Book (Hotel Business, 1996, 1997, 1998, 1999, 2000), Lodging Industry Overview (BT Alex. Brown, 1995, 1996, 1997, 1998; Deutsche Banc Alex. Brown, 1999, 2000). and the Host Report (Smith Travel Research, 1996, 1997, 1998, 1999, 2000).

10. Statistical Analysis:

Several statistical procedures were used to analyze the data. All of these statistical analyses and procedures were performed using the Minitab statistical program. The statistical analysis consisted of the following steps:

a. Standard Tests:

To begin, descriptive statistics were generated for the study variables to assess the makeup of the sample. Various data plots were also be produced to test for outliers and heteroscedasticity. A Durbin-Watson statistic was reviewed in order to determine if autocorrelation is present. A correlation analysis was also done to better understand if the study variables suffer from multicollinearity.

b. Multiple Regression Analysis:

Multiple regression analysis is a statistical technique that can be used to analyze the relationship between a single metric dependent variable and several independent variables (Hair, Anderson, Tatham & Black, 1998). Each independent variable is weighted by the regression analysis procedure to ensure maximal prediction from the set of independent variables. The weights denote the relative contribution of the independent variable to the overall prediction and facilitate interpretation as to the influence of each variable in making the prediction. Also, multiple regression provides a means of assessing the nature of the relationships between the independent variables and dependent variable. Likewise, multiple regression gives us an insight into the relationships among independent variables in their prediction of the dependent measure.

The standard multiple regression equation is as follows (Mosteller & Tukey, 1977):

$$Y = b_o + b_1V_1 + b_2V_2, + b_3V_3 + \ldots + b_kV_k + e$$

Where

Y = criterion variable
b_o = constant
b_1 = regression coefficient - change in criterion variable associated with change in variable one
b_2 = regression coefficient - change in criterion variable associated with change in variable two
b_3 = regression coefficient - change in criterion variable associated with change in variable three
V_1 = variable one
V_2 = variable two
e = error /residual term

Accordingly, the following regression equations were used to test the study hypotheses outlined earlier:

(1) EBITDA = b_o + b_1 (Revenue Share) + b_2 (Relative Growth) + b_3 (Development Cost Barriers) + b_4 (Number of Competitors)

(2) Revenue Share = b_o + b_1 (Relative Growth) + b_2 (Development Cost Barriers) + b_4 (Number of Competitors)

(3) Relative Growth = b_o + b_1 (Development Cost Barriers)+ b_2 (Number of Competitors)

(4) Number of Competitors = b_o + b_1 (Development Cost Barriers)

These regressions are summarized in Table 13 below, along with the appropriate hypothesis which they address.

Two sets of multiple regression analyses were conducted. The first looked at the period 1996, and 1997 (Period One), while the second considered 1998 and 1999 (Period Two). In both Period One and Period Two, the four multiple regression analyses outlined in Table 13 were performed. Validation consisted of comparing the signs of the relationships among the variables in the model, and comparing the strength and significance of the regression coefficients between the study variables between Period One and Period Two. If these were consistent,

then both the validity and the reliability of the model would be enhanced. Therefore, the regression analyses for Period Two attempted to validate the findings of Period One since the estimated sample size was not large enough for a split sample. This technique has been used in various economic studies that cover a number of years where the availability of data is limited for each time period (Schroeter, 1988: Boulding & Staelin, 1990).

Table 13. Multiple Regression Analyses (MRA) used to test the LMS Model

MRA	Hypothesis	Dependent Variable	Independ. Variable 1	Independ. Variable 2	Independ. Variable 3	Independ. Variable 4
1.	4, 7, 9, 10	EBITDA	Revenue Share	Relative Growth	Development Cost Barriers	Number of Competitors
2.	3, 6, 8	Revenue Share	Relative Growth	Development Cost Barriers	Number of Competitors	
3.	2, 5	Relative Growth	Number of Competitors	Development Cost Barriers		
4.	1	Number of Competitors	Development Cost Barriers			

11. Summary Research Methods:

This chapter dealt with the methodological issues of the study. Specifically, the research framework was outlined, and the research hypotheses were established in order to address the study's three research questions. Further, the LMS model was specified, the data collection sources were identified and statistical analyses were discussed. The results of this study will be presented in the next chapter.

CHAPTER IV

Data Analysis, Results & Discussion

1. Sample:

a. Convenience Sample:

Originally, a total of 188 hotel brands were identified in the Membership Directory of the American Hotel & Lodging Association. However, only 153 brands fit the strict definition of a national brand put forth by Smith Travel Research (five or more properties with 20 or more rooms operating in the United States). The 35 remaining "quasi-brands" in the directory consisted of smaller operators with two or three locations, regional hotel marketing alliances, and resorts with just a few properties. Of the 153 potential brands that fit the Smith Travel Research criteria, the author was able to obtain and validate data for the five study variables for 67 brands for the period 1996-1999. That is, the data sources only contained information for all five variables for 67 of the 153 brands identified. Though some sources contained more than 67 brands for a variable, those brands did not always match the brands for other variables. Hence, 67 was the common denominator. Due to concerns over sample size (discussed later), a random sampling of the 67 brands identified was not possible. Based on this lack of randomness, the data collected for the 67 brands should be considered a purposeful sample. The brands utilized in the study are shown in Table 14.

Table 14: Brands Represented in Study Relative to Industry Segment Totals

Segment	Brands in Study	Segment Room Inventory (1999) For Study	Sample Rooms as % of National Segment Total	Number of Competitors in Segment and Sample Percent of Segment
Deluxe	1. Four Seasons 2. Ritz Carlton 3. Fairmont Hotels	19,080	57 %	4 (75%)
Luxury	1. Marriott 2. Sheraton 3. Hyatt 4. Hilton 5. Westin 6. Omni 7.Renaissance 8. Wyndham	343,575	93 %	11 (73%)
Upscale	1. Radisson 2. Hilton Inns 3. Embassy 4. Doubletree 5. Clarion 6. Red Lion 7. Wyndham Garden 8. Adams Mark 9. Crown Plaza	244,374	92 %	15 (60%)
Mid-Price With F&B	1. Holiday Inn 2. Best Western 3. Ramada 4. Howard Johnsons 5. Quality Inn 6. Courtyard 7. Holiday Inn Select 8. Four Points 9. Wingate Inns	522,887	86 %	17 (53%)
Mid-Price No F&B	1. Comfort Inn 2. Hampton Inn 3.HolidayInn Express 4. LaQuinta 5. Country Inns 6. Shilo Inns 7. Amerihost Inns 8. Amerisuites 9. Wellsley Inns 10. Signature Inns 11. Hilton Garden Inn	384,163	84 %	19 (58%)

Economy	1. Days Inn 2. Fairfield 3. Travelodge 4.Budgetel/ Baymont 5. Red Roof Inns 6. Roadway Inn	302,799	80 %	21 (29%)
Budget	1. Super 8 2. Motel 6 3. Americinn 4. Jamison Inns 5. Best Inns 6. Econo Lodge 7. Knights Inn 8. Sleep Inn 9. Budget Host 10. Microtel 11. Red Carpet Inn 12. Scottish Inns	337,734	88 %	37 (32%)
Extended Stay Upscale	1. Residence Inn 2. Summerfield Suites 3. Homewood Suites 4. Hawthorn Suites	63,475	94 %	5 (80%)
Extended Stay Budget	1. Extended Stay America 2. Villager 3. Studio Plus 4. Homestead Village 5. Suburban Lodge	77,568	71 %	12 (42%)

b. Representativeness of the Sample:

Since we are dealing with a purposeful sample, representativeness of that sample is extremely important for the generalizability of the study (Newman, 1972). The 67 brands used in this analysis had a total of 20,728 properties with 2,438,623 rooms that represented approximately 63 percent of the total guestroom inventory in the United States in 1999. In addition, these brands came from all nine segments of the U.S. lodging industry as shown in Table 14. The room inventory of the sample represented the majority (between 57 percent to 94 percent) of the total room supply in each segment (Bear Stearns;2000; Smith Travel Research, 2000). Similarly, the number of competitors present in the

sample in each segment, ranged from 29 percent to 80 percent. Therefore, the sample achieved broad representation from all segments of the industry, ranging from brands such as Four Seasons to Motel 6.

To further test the representativeness of the sample, two popular operating indicators were compared. The average daily rate (ADR), and the occupancy percentage of the sample were compared to the national ADR and occupancy (Dev, 1988). The sample (weighted according to room count) had a collective ADR of $ 80.05, and an average occupancy level of 64.7 percent in 1999, in comparison to the national ADR of $ 81.41 and 63.9 percent (PriceWaterhouse Coopers, 2000). Based on two separate t-tests, the sample's operating indicators were found to be statistically the same as their national counterparts (See Appendix F).

Based on the broad representation of brands and the comparison of the operating indicators, we can infer that the study sample was representative of the U.S. lodging industry.

c. Data Collection:

Data for each variable in the study was collected from a variety of secondary sources. These documents consisted of a wide range of government agencies, consulting firm reports, and trade magazines. The particulars for each variable are outlined in Table 15 below:

Based on the definitions of each variable developed in Chapter III, an extensive search identified the publications outlined in Table 15. Each data point for every variable was isolated in each of those respective publications and validated by the stated secondary sources. Since certain publications had limited information, multiple sources were used for each variable in order to obtain the broadest reach of brands, and time periods. Whenever possible, the data collection procedures from each of the publications were studied and scrutinized.

Table 15: Data Collection Sources Summary

Variable	Primary Sources	Secondary Sources
EBITDA	1. EDGAR–10K filings (SEC) 2.U.S. Lodging Almanac (Bear Stearns) 3. Uniform Offering Circulars (franchisors)	1. Host Report (Smith Travel Research) 2. Lodging Industry Overview (BT Alex Brown) 2. The Green Book (Hotel Business)
Number of Competitors	1. Directory of Hotel & Motel Companies (AH&LA)	1. U.S. Lodging Almanac (Bear Stearns)
Revenue Share	1. U.S. Lodging Almanac (Bear Stearns) 2. EDGAR–10K filings (SEC) 3. Uniform Offering Circulars (franchisors)	1. Host Report (Smith Travel Research) 2. Lodging Industry Overview (BT Alex Brown) 3. The Green Book (Hotel Business)
Relative Growth	1. EDGAR–10K filings (SEC) 2.U.S. Lodging Almanac (Bear Stearns) 3. Uniform Offering Circulars (franchisors)	1. Host Report (Smith Travel Research) 2. Lodging Industry Overview (BT Alex Brown) 3. The Green Book (Hotel Business)
Development Cost Barriers	1. Hotel Development Cost Survey (HVS International) 2. Uniform Offering Circulars (franchisors)	1. Franchise Fact File (Lodging Hospitality) 2. Franchised Hotel Brands Survey (Franchise Help Inc.)

The raw data was tabulated in Microsoft Excel, further refined and later transferred into the Minitab software program for statistical analysis. In various cases, the data was slightly modified or extrapolated in order to make it compatible with the other sources, or other years. For example, the reporting of EBITDA in various brands SEC 10-K reports required the removal of line item entries dealing with extraordinary accounting events which were backed out in order to make the results comparable with other brands that did not have such entries in those years. Similarly, development costs for some brands were

reported on a per room basis, while other brands reported them as total costs for a prototype property with a set amount of rooms. In the latter case, these total development costs were broken down to a per room cost in order to obtain a common denominator.

For the Number of Competitors variable, the raw data was plugged into the formulas outlined in Appendix B. Likewise, various other mathematical processes outlined in Chapter III were applied to the data to make them fit their respective variable definitions. For example, for some variables the data needed to be standardized or transposed for various methodological purposes (discussed in more detail below). Once inputted into Minitab, the data was cross-checked for odd observations or incomplete cells. Descriptive and column diagnostic procedures were performed by the Minitab program to ensure that no aberrations existed within the data.

Brands that did not have complete information or if the information was unavailable for all five variables in the study, or for all four years (1996-1999), were excluded in order to have a balanced sample size. Specifically, a total of 86 of the eligible 153 brands were excluded from the analysis due to a lack of information for some years, or some of the variables. Again, data for all five variables were collected for the calendar years 1996, 1997, 1998, and 1999. In addition, revenue data was collected for the sample for 1995 that was used as a base year to measure the Relative Growth variable.

d. Reliability and Validity:

Before presenting the results, a brief discussion on the validity and reliability of the data is presented. Realizing that a single study cannot achieve validity (Cronbach, 1971), and since this is seminal research for the lodging industry, every effort was made to enhance the validity, reliability and generalizability of the data collected.

Reliability refers to the degree to which observations are consistent and stable (Rosenthal & Rosnow, 1984). That is, the dependability of the indicators to measure specific constructs. Since the data for this study were obtained from secondary sources in aggregate form, the reliability of the data must be reviewed. Not having access to the original data does not allow the application of various techniques to test the reliability of the collection methods directly. However, in defense of the data, the variables used in the study are financial in nature. Hence, all of the variables in the study were generated and tabulated according to strict standards established by Generally Accepted Accounting Principles (GAAP), which are time-proven methods of measuring business performance (Frazer and Howell, 1983). In addition, the financial indicators that provide the core of the variables in this study have all been scrutinized by various public accounting firms, corporate management of the brands, investors, as well as SEC regulators for the public firms in the study. And, lastly, the data was verified using multiple sources to ensure its consistency. Hence, we can infer that the reliability of the data is relatively good despite that fact that it was gathered via secondary sources.

Validity is the degree of fit between theoretical constructs and their operational indicators (Nachmias & Nachmias, 1981). The better the fit, the greater the validity. In this case, all of the constructs identified have strong support in the literature. Likewise, the operational indicators used in this study to represent the constructs have all been used routinely by academic researchers, accounting firms, management executives, and industry consultants within academic circles and the lodging industry. This widespread acceptance by researchers and the hospitality community provides the variables with strong face validity. Content validity is strengthened by the fact that the variables used in this study represent constructs that are themselves quantitative in nature with sound financial roots, and hence they are representative of the business field being investigated (Churchill, 1979). These financial indicators are “functional” in their form with no error prediction (as compared to statistical relationships which have an error component) (Hair, Anderson, Tatham, & Black, 1998). Lastly, external

validity is supported by the broad representation of brands included in the study and the large room count (representing almost two thirds of the U.S. lodging inventory).

e. Sample Size:

Generally, as sample size increases, the variation in the sample mean decreases, thus improving reliability. The size of the sample used has a direct impact on the appropriateness and the statistical power of multiple regression. Power in multiple regression refers to the probability of detecting, as statistically significant, a specific level of R^2 (coefficient of determination) or a regression coefficient at a specified significance level for a specific sample size. Hence, sample size has a direct and sizable impact on power. According to Hair, Anderson, Tatham and Black (1998), in order to obtain a power level of .80 at the .05 significance level, with four independent variables (the maximum number of variables hypothesized in the LMS model – See Table 13), a sample size of 67 will detect R^2 values above 12% as statistically significant. The R^2 value that will be statistically significant decreases sharply as the number of independent variables decreases (example: four percent with just two variables). Therefore, R^2 values that are low should be scrutinized carefully to ensure their statistical significance.

In addition to its role in determining statistical power, sample size also affects the generalizability of the results by the ratio of the observations to independent variables. A general rule is that the ratio should never fall below five to one (five observations for each variable). If it falls below the 5:1 ratio, this will "overfit" the variate, thus reducing the generalizability of the results. In actuality, a 15:1 ratio, or greater, is considered more appropriate. When this higher level is reached, the results should be generalizable if the sample is representative (Mason & Perreault, 1991). Dividing our 67 observations by the four independent variables (four being the maximum independent variables in the proposed multiple regressions discussed earlier- see Table 13), we obtain a ratio of 16.75 to

one which meets the 15: 1 ratio, thus making the results considerably more generalizable.

2. Descriptive Statistics:

Descriptive statistics were calculated for the sample data. Table 16 revisits the operational definitions for the variables (originally outlined in Table 11) which should make the descriptive statistics more meaningful.

Table 16 – Operational Definitions for Variables

Variable Name	Operational Definition
EBITDA	A brand's earnings before income taxes, depreciation, and amortization per hotel
Revenue Share	The ratio of a brand's revenues to the total revenues of all brands
Development Cost Barriers	Development costs per hotel for each brand
Relative Growth	The individual brand's revenue growth as a ratio of the total growth of all brands per year.
Number of Competitors	A brand's direct + indirect competitors (direct competitor equivalents)

The descriptive statistics for Period One (1996/1997) are listed in Table 17.

Table 17: Descriptive Statistics for Period One (1996/1997)

Variable	Sample Size	Mean	Median	Stand. Dev.	Stand. Error	Min.	Max
Development Cost Barriers	67	$74, 513	$56,263	$52,768	$6,447	$26,237	$289,876
Relative Growth	67	7.46%	5.2%	1.11%	.13%	-3.2 %	27.2 %
Number of Competitors	67	26.92	27.15	12.09	1.48	4	50.02
Revenue Share	67	1.49%	.64%	0.2%	.0263%	.004%	10.07 %
EBITDA	67	$ 1,723,672	$ 728,827	$ 2,270,240	$277,354	$111,232	$1,012,9443

Reviewing some of the highlights of Table 16 for Period One, we can see that the average development cost for the sample was $74,153 per guest room. Brands grew at a relative rate of 7.46 percent per year. Brands faced, on average approximately 27 competitors, and they controlled almost 1.5 percent market share. For the period, each branded hotel was earning approximately $ 1,723,672 per year.

Similarly, Table 18 illustrates the descriptive statistics for Period Two.

Table 18: Descriptive Statistics for Period Two (1998/1999)

Variable	**Sample Size**	**Mean**	**Median**	**Stand. Dev.**	**Stand. Error**	**Min.**	**Max**
Development Cost Barriers	67	$ 80,196	$59,225	$62,360	$7,618	$27,548	$303,044
Relative Growth	67	7.02%	4.6%	.692%	.113%	-1.8%	19.2%
Number of Competitors	67	29	29.34	1337	1.67	4	55.2
Revenue Share	67	1.49%	.73%	1.97%	.24%	.08%	10.2%
EBITDA per Hotel	67	$ 2,031,205	$ 64,469	$ 2,185,329	$ 349,078	$ 74,070	$12,879,286

For Period Two (1998/1999), the average development cost was $ 80,196 per room, and brands grew at an average rate of approximately seven percent during this period. The average number of competitors faced by each brand was 29. Profitability for this time frame was just over two million dollars per hotel, and each brand maintained approximately 1.5 percent of the market.

Comparing Period One to Period Two, the results are relatively close, thus helping in the validation process. The differences are basically accounted for by expected increases due to general economic growth, or trends outlined in Table 1. For example, we can see that development cost per room increased by almost six thousand dollars between the two periods. The average growth rate declined slightly to four tenths of one percent . Competition got tougher as the average

number of competitors that each brand had to face increased by two. Profitability per hotel increased by about $ 300,000. However, there appeared to be little overall movement in average market share which stayed the same between these two periods.

Having analyzed the descriptive statistics, we can now proceed to review the data for potential violations of multivariate assumptions before performing the regression analyses proposed in Chapter III.

3. Multivariate Assumptions:

Multivariate analyses such as multiple regression requires an examination of the data because of the influence of outliers, violations of assumptions, and missing data, all of which can compound across several variables thus having substantial affects on the results (Hair, Anderson, Tatham, & Black, 1998). The assumptions underlying multiple regression analysis apply both to the individual variables (dependent and independent) and to the relationship as a whole. Specifically, the four major assumptions are 1. Normality, 2.Linearity, 3. Homoscedasticity, and 4. Independence of the Error Term. Each will be discussed in more detail.

a. Normality Measures:

Normality is the most fundamental assumption in multivariate analysis. Normality refers to the shape of the data distribution for an individual metric variable and its correspondence to the normal distribution, the benchmark for statistical methods. A normal probability plot compares the cumulative distributions of actual data values with cumulative distribution of a normal distribution plot. Upon generating normal probability plots for the five variables used in the study, it was uncovered that EBITDA, Revenue Share, Relative Growth and Development Cost Barriers had varying degrees of non-normality.

Accordingly, the three skewed distributions (EBITDA, Revenue Share, and Development Cost Barriers) were transformed by taking the logarithm of the variable values (Hair, Anderson, Tatham, & Black, 1998). Normality was achieved for Relative Growth (which suffered from kurtosis) by taking the square root of the variable (Hair, Anderson, Tatham, & Black, 1998).

b. Linearity:

The linearity of the relationship between dependent and independent variables represents the degree to which change in the dependent variable is associated with the independent variables. A strong organization of the points along a straight line characterizes a linear (correlated) relationship on a scatterplot. Following the transformations performed on the variables discussed earlier, all the scatterplots approximated a linear relationships.

c. Homoscedasticity:

The presence of unequal variances (heteroscedasticity) can also create problems for multivariate analyses (Hair, Anderson, Tatham, & Black, 1998). Constant variance of the error term is preferred. An examination of the scatterplots did not produce any concerns over heteroscedasticity.

d. Autocorrelation:

Autocorrelation can occur when the errors are correlated in a serial manner. In cross-sectional analyses, this condition may be present when nonlinear relations exist. An examination of the Durbin-Watson *d* statistic for the regression models for Period One (see Table 21) and Period Two (see Table 22), indicated *d*-values were all greater than one, and less than three, indicating that the errors associated with the observations are independent (a *d*-value of two is considered ideal) (Lehmann, Gupta, & Steckel, 1998). Therefore, despite that smaller sample size, autocorrelation was deemed not to be a concern.

e. Outliers:

Outliers are observations with a unique combination of characteristics identifiable as distinctly different from other observations in a study's data set. Since outliers can influence the relationship of variables that are a part of a multiple regression analysis (Hair, Anderson, Tatham, & Black, 1998), an examination of these unique data points was conducted. Initially, all observations were screened to ensure that no coding errors were present. Secondly, the scatterplots in Appendix E were reviewed. In addition, the regression analyses (discussed later) were performed, and unusual observations of three standard deviations were isolated.

In Period One, several observations were identified as being unusual. Specifically, brands from the Deluxe segment such as Four Seasons, Ritz-Carlton, and Fairmont, repeatedly showed up as outliers for almost all of the variables in the study. This was probably due to their segment's unique situation of low competition, low market share, high profitability, and anemic growth rate. Similarly, Marriott showed up in the Revenue Share and EBITDA variables with unique observations due to the size and efficiency of their organization. This closer review of data indicated that these points were either representative of the subject brand's unique character, competitive advantage or major industry trends and hence these observations were not excluded since they represented hundreds of hotel properties from across all segments of the industry. According to Hair, Anderson, Tatham and Black (1998), if outliers are not truly aberrant from the population, researchers run the risk of reducing the generalizability of their results by eliminating them.

Similarly, in Period Two, several observations were identified as being somewhat unusual. Again, a closer examination of these observations turned up the same brands as in Period One, along with one or two new ones. These additional odd observations included the Relative Growth rates for brands such as Extended Stay America, Homewood Suites and Holiday Inn Express. An

examination of Table 8 indicated that the growth rate of these brands was consistent with broader trends of major expansion of certain limited-service and extended-stay segments of the industry to which those brands belonged to. This additional investigation of these unique data points again confirmed that, like Period One, these observations represented those brand's unique character, competitive advantage or major industry trends. Therefore, a decision was made to leave these observations within the analysis.

4. Correlation Analysis:

A correlation analysis was conducted to help determine if the relationships among the study variables behaved as hypothesized in the LMS model. Two separate correlation analyses were conducted, one for Period One (1996/1997) and one for Period Two (1998/1999). Figure 8 illustrates these results.

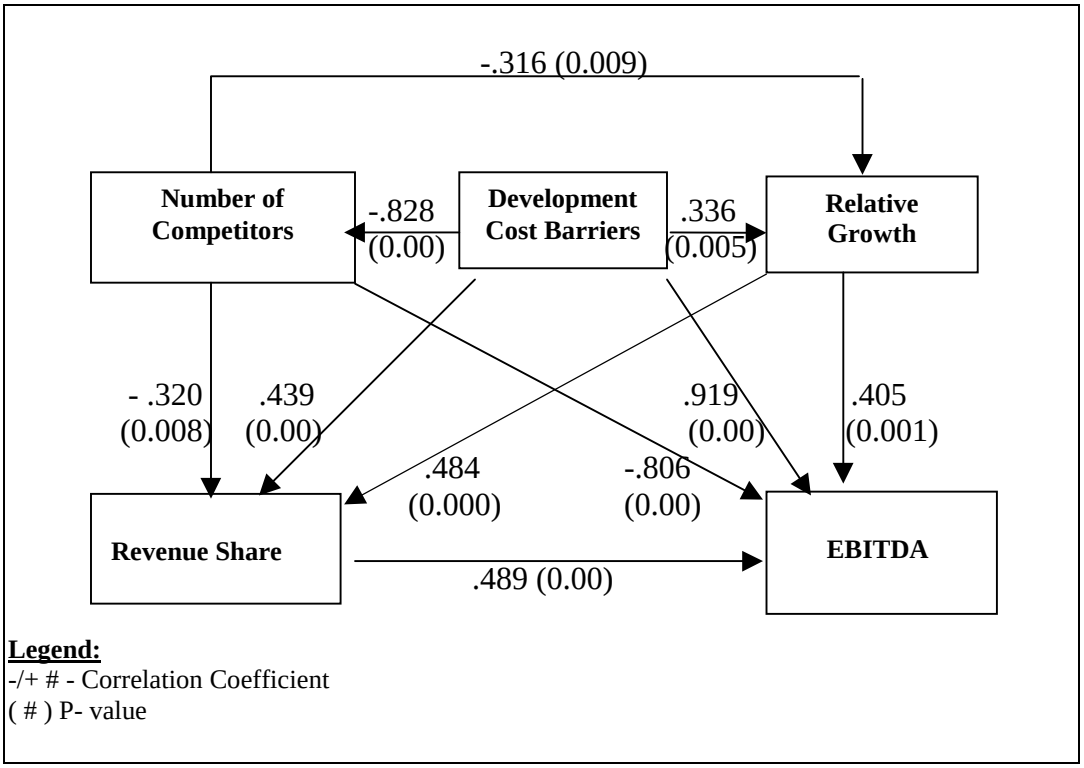

Figure 8: Correlation Analysis Results (Period One = 1996/1997)

For Period One (1996/1997), the correlation analysis indicated that all ten of the hypothesized relationships were significant at the .05 level. A correlation matrix is also helpful in determining the strength of the relationships between the independent variables to be used as part of a regression analysis. Ideally, the most desirable situation is one where the independent variables are highly correlated with the dependent variable (approximately .70 or higher), but have low correlation levels (approximately.30 or lower) with each other (Mosteller & Tukey, 1977).

Figure 8 illustrates that all of the relationships within the LMS model, for Period One, have relatively low correlation levels among the independent variables with the exception of one. A strong negative correlation exists between Number of Competitors and Development Cost Barriers. (Coincidentally, both of these variables have a strong relationship with the primary dependent variable, EBITDA). Based on this correlation analysis, it would appear that the independent variables should be suitable for multiple regression analysis, but special attention should be paid to the high negative correlation between Number of Competitors and Development Cost Barriers due to concerns over multicollinearity of the independent variables.

A second correlation analysis was conducted for Period Two (1998/1999). Figure 9 illustrates the results of this correlation analysis.

For Period Two (1998/1999), again all ten relationships were found to be significant at the .05 level. These results are consistent with Period One. Also, the variables had correlations with relatively low or moderate levels, with the exception of the relationship between Number of Competitors and Development Cost Barriers. Hence, the use of most of these independent variables for the proposed multiple regression analysis (discussed below) should be acceptable (Note: precautions should be used when using Number of Competitors and

Development Cost Barriers in the same multiple regression equation due to concerns over multicollinearity).

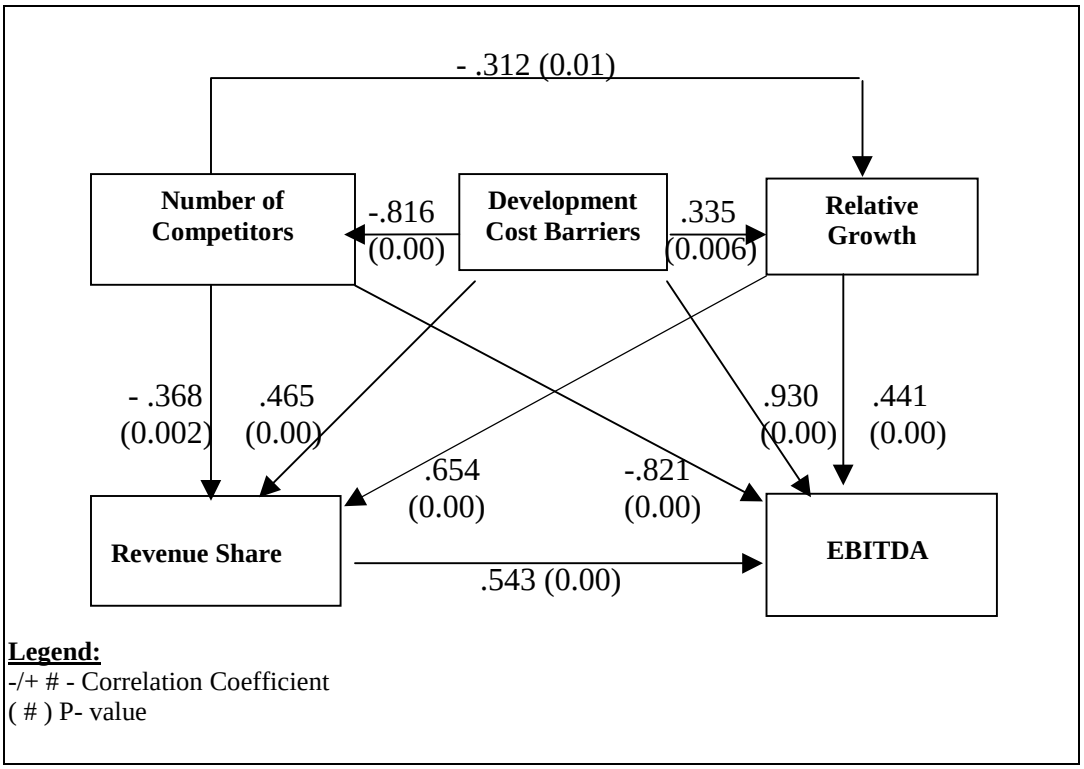

Figure 9: Correlation Analysis (Period Two = 1998/1999)

5. Support for Hypotheses:

The correlation analysis discussed above, provides insight into answering the hypotheses discussed in Chapter III. These hypotheses are shown in Table 19.

Based on Table 19, it would appear that, for Period One (1996/1997), support was provided for all ten hypotheses put forth in Chapter III. In addition, the study's hypotheses were also reviewed for Period Two, which is illustrated in Table 20.

Table 19: Correlation Summary and Hypotheses (Period One – 1996/1997)

	Hypothesis	Correl. Coeff.	P value	Sign	Support for Hypothesis
1	As Development Cost Barriers increase, the Number of Competitors decreases.	-.828	0.00	Neg.	Yes
2.	As Development Cost Barriers increase, an incumbent brand's Relative Growth increases	.336	0.005	Pos.	Yes
3.	As Development Cost Barriers increase, an incumbent brand's Revenue Share increases.	.439	0.00	Pos.	Yes
4.	As Development Cost Barriers increase, an incumbent brand's EBITDA increases.	.919	0.00	Pos.	Yes
5.	As the Number of Competitors increases, Relative Growth for incumbent brand's decrease	-.316	0.009	Neg.	Yes
6.	As the Number of Competitors increases, an incumbent brand's Revenue Share decreases	-.320	0.008	Neg.	Yes
7.	As the Number of Competitors increases, an incumbent brand's EBITDA decreases	-.806	0.00	Neg.	Yes
8.	As the Relative Growth of brands increases, then Revenue Share increases.	.484	0.001	Pos.	Yes
9.	As the Relative Growth of brands increases, then EBITDA increases.	.405	0.001	Pos.	Yes
10.	As Revenue Share goes up, brand EBITDA increases	.489	0.00	Pos.	Yes

For Period Two (1998/1999), shown in Table22, all ten hypotheses received support. Based on the consistent statistical findings between Period One and Period Two, the empirical investigation was able to proceed to the next stage. Specifically, the multiple regression analyses proposed in Chapter III were reviewed next. (Note: the individual relationships between the variables will be discussed in more detail in later in this chapter).

Table 20: Correlation Summary and Hypotheses (Period Two = 1998/1999)

	Hypothesis	Correl. Coeff.	P value	Sign	Support for Hypothesis
1	As Development Cost Barriers increase, the Number of Competitors decreases.	-.816	0.00	Neg.	Yes
2.	As Development Cost Barriers increase, an incumbent brand's Relative Growth increases	.335	0.006	Pos.	Yes
3.	As Development Cost Barriers increase, an incumbent brand's Revenue Share increases.	.465	0.00	Pos.	Yes
4.	As Development Cost Barriers increase, an incumbent brand's EBITDA increases.	.930	0.00	Pos.	Yes
5.	As the Number of Competitors increases, Relative Growth for incumbent brand's decrease	-.312	0.01	Neg.	Yes
6.	As the Number of Competitors increases, an incumbent brand's Revenue Share decreases	-.368	0.002	Neg.	Yes
7.	As the Number of Competitors increases, an incumbent brand's EBITDA decreases	-.821	0.00	Neg.	Yes
8.	As the Relative Growth of brands increases, then Revenue Share increases.	.654	0.00	Pos	Yes
9.	As the Relative Growth of brands increases, EBITDA increases	.441	0.000	Pos.	Yes
10.	As Revenue Share goes up, brand EBITDA increases	.543	0.00	Pos.	Yes

6. Multiple Regression Analyses – Period One (1996/1997):

As proposed in Chapter III, four multiple regression analyses were performed on the study variables. These are outlined in Table 21 below.

Table 21: Final MRA's -LMS Model (Period One - 1996/1997)

MRA	Dependent Variable	Regress. Equation	R-sq.	R-Sq. (Adj)	T	P	F	D-W *d*
1	EBITDA	= 2.19 + 1.73 logDCB + 0.0817 logRS	85.4%	84.9%	16.42 2.45	0.00	187.2	1.52
2	Revenue Share	= -6.46 + .804logDCB + 3.43 sqrRG	32.0%	29.9%	2.85 3.47	0.00	15.09	1.21
3	Relative Growth	=-.384 + 0.096 logDCB	11.3%	9.9%	2.87	.005	8.27	1.63
4	Number of Competitors	= 218 – 39.8 logDCB	66.7%	66.2%	11.4	0.00	130.3	1.04

Legend: log = logarithm, DCB = Development Cost Barriers, sqrRG = Square Root Relative Growth, D-W *d* = Durbin-Watson Statistic

Table 21 indicates that all four sets of regressions were significant. Each one is discussed in more detail below, and detailed printouts are provided in Appendix D.

a. MRA -1 (Period One).

As originally proposed in Chapter III, a multiple regression analysis (MRA) was conducted with EBTIDA as the dependent variable according to the formula presented below.

$$\text{EBITDA} = b_0 + b_1 \text{ (Revenue Share)} + b_2 \text{ (Relative Growth)} + b_3 \text{ (Development Cost Barriers)} + b_4 \text{ (Number of Competitors)}$$

The final results of this multiple regression analysis are illustrated in Table 21 (Note: a detailed printout of this regression is shown in Appendix D). The statistical tests and interpretations of this model are based on Hair, Anderson, Tatham, and Black (1998). This MRA equation indicated that brand EBITDA was impacted significantly by Development Cost Barriers (regression coefficient of 1.73 and a partial t-value 16.4), and to a lesser degree by Revenue Share (regression coefficient of .0817 and partial t-value 2.45). These two independent variables were significant because their test statistics (partial t-values) were greater than 2. The observed significance levels (p-values) for Development Cost Barriers was 0.00 and .0044 for Revenue Share (See Appendix D for details), thus

rejecting the null hypothesis (the model used a .05 level of significance). The coefficient of determination (R^2 - value) of .854 indicated that this model explained 85.4 percent of the variation (sum of squared errors) of EBITDA (or 84.9 percent when adjusted for degrees of freedom based on the number of independent variables in the equation and sample size). Based on the high R^2, the relationship between the independent variables (Development Cost Barriers and Revenue Share) and the dependent variable (EBITDA) is strong, and the model fit is good. The F-test statistic of 187.2 (based on the analysis of variance tests of R^2) indicates that the independent variables as a group are significantly related to EBTIDA since the F-value is greater than 4. The overall model p-value was 0.00, hence, we can reject the null hypothesis, and concluded that this model is a useful predictor of the dependent variable (EBTIDA).

Originally, the multiple regression was performed with all four independent variables in the equation as first proposed. The results of this MRA are illustrated in Appendix D, and listed as MRA-1a. This original analysis revealed that both Number of Competitors and Relative Growth had a high p-value of .111) and 0.20 respectively, indicating they do not contribute significant information to predicting EBTIDA. Based on these high p-values and our concerns over multicollinearity between Number of Competitors and Development Cost Barriers (.828) discussed in the correlation analysis, both Relative Growth and Number of Competitors were removed from this equation. (Note: Development Costs Barriers was not removed from the equation because it had a p-value of 0.00 in MRA-1a, thus rejecting the null hypothesis). After removing those two independent variables, the MRA was performed once more (MRA – 1b) with just Development Cost Barriers and Revenue Share. The main results of MRA – 1b are illustrated in Table 21, with the details are shown in Appendix D.

b. MRA – 2 (Period One):

An initial multiple regression analysis was conducted with Revenue Share as the dependent variable as shown by the formula below.

$$\text{Revenue Share} = b_0 + b_1\,(\text{Relative Growth}) + b_2\,(\text{Development Cost Barriers}) + b_4\,(\text{Number of Competitors})$$

The regression analysis (illustrated in Appendix D as MRA-2a) revealed that the Number of Competitors variable had a high p-value of 0.268. Again, based on this high p-value and our concerns over multicollinearity, the Number of Competitors variable was removed from the equation because of its high correlation with Development Cost Barriers (.828). Subsequently, the regression was run once more with just Development Cost Barriers and Relative Growth as the independent variables.

The results (MRA- 2b shown in Table 21 and Appendix D) indicated Revenue Share was impacted by both Development Cost Barriers and Relative Growth. The latter variable appeared to have a stronger influence by virtue of a higher t-value (3.47) and a lower p-value than Development Cost Barriers. MRA – 2b, had an adjusted R^2 value of 29.9%, along with an F-value of 15.09 and the overall P-value of 0.00 indicating that the model is significant, and is a good fit.

c. MRA-3 (Period One)

An initial multiple regression analysis was conducted using Relative Growth as the dependent variable as shown in the formula below.

$$\text{Relative Growth} = b_0 + b_1\,(\text{Development Cost Barriers}) + b_2\,(\text{Number of Competitors})$$

The outcome (illustrated in Table 21 equation 3, and Appendix D as MRA-3a) revealed that the Number of Competitors variable had the highest p-value of 0.584. Again, based on this high p-value and concerns over multicollinearity, the Number of Competitors variable was removed from the equation because of its high correlation with Development Cost Barriers (.828). Subsequently, the

regression was run once more with just Development Cost Barriers as the independent variable. MRA-3b (illustrated in Table 21) shows an Adjusted R-squared value of 9.9 percent, an F-value of 8.27, along with an overall p-value of .005. Thus, this equation is considered significant although not a very strong predictor of Relative Growth.

d. MRA- 4 (Period One):

The final regression model for Period One was conducted for Number of Competitors as the dependent variable. (Shown in the equation below):

Number of Competitors $= b_0 + b_1$ (Development Cost Barriers)

The statistical results (shown in Table 21 as equation 4, and MRA-4a illustrated in Appendix D) revealed an adjusted R^2 value was 66.2%, with an F-value of 130.38 and an overall P-value of 0.00, thus indicating statistical significance and a good fit.

7. Multiple Regression Analyses – Period Two (1998/1999):

Similar to the analyses conducted in Period One, a second set of multiple regressions were conducted for Period Two. The results of those regressions are outlined in Table 22 below.

Table 22: Multiple Regressions - LMS Model (Period Two 1998/1999)

MRA	Dependent Variable	Regress. Equation	R-sq.	R-Sq. (Adj)	T	P	F	D-W *d*
1	EBITDA	= 3.30 + 1.98 logDCB + 0.143 logRS	88.1%	87.7%	17.74 2.90	0.00	236.4	1.85
2	Revenue Share	= -5.96 + 0.626 logDCB + 4.46 sqrRG	49.6%	48.0%	2.96 5.96	0.00	31.49	1.58
3	Relative Growth	= -0.389 + 0.112 logDCB	11.4%	10.1%	3.02	.006	8.21	1.63
4	Number of Competitors	= 216 - 36.7 logDCB	66.6%	66.1%	11.28	0.00	128.5	1.04

Legend: log = logarithm, DCB = Development Cost Barriers, sqrRG = Relative Growth

Table 22 indicates that all four regressions were significant. Each one is discussed in more detail below.

a. MRA- 1 (Period Two)

Multiple regression analysis (MRA – 1a) was conducted according to the formula shown below:

$$\text{EBITDA} = b_0 + b_1\,(\text{Revenue Share}) + b_2\,(\text{Relative Growth}) + b_3\,(\text{Development Cost Barriers}) + b_4\,(\text{Number of Competitors})$$

The detailed results are outlined in Appendix D. Once more, the p-values for Number of Competitors and Relative Growth were high (.137 and .103 respectively). Hence, based on concerns over multicollinearity, the Number of Competitors variable was removed from the equation because of its high correlation with Development Cost Barriers (.816). Similarly, Relative Growth was also removed as well because of the high p-value.

Subsequently, the modified regression was repeated, and the final results are illustrated in Table 22. Based on the T-values in the equation, EBITDA appears to be impacted significantly by Development Cost Barriers (t-value = 17.74), and to a lesser degree by Revenue Share (t-value = 2.90). The high adjusted R^2 value of 87.7%, along with an F-value of 236.42 and the overall P-value of 0.00 indicate that the model is significant, and is a good fit.

b. MRA-2 (Period Two)

An initial multiple regression was conducted according to the following formula:

$$\text{Revenue Share} = b_0 + b_1\,(\text{Relative Growth}) + b_2\,(\text{Development Cost Barriers}) + b_4\,(\text{Number of Competitors})$$

The results printout (MRA-2a illustrated in Appendix D) revealed that the Number of Competitors variable had a high p-value (.533). Again, based on the

high p-value, and our concerns over multicollinearity, the Number of Competitors variable was removed from the equation because of its high correlation with Development Cost Barriers (.816).

Subsequently, the regression was performed once more (MRA-2b), and the outcome is illustrated in Table 22. Based on t-value of 5.96, Relative Growth appeared to have the greater influence on Revenue Share than Development Costs Barriers which had a t-value of 2.96. With an adjusted R^2 value of 48.0%, and with a F-value of 31.49, along with an overall p-value of 0.00, the model is also significant.

c. MRA-3 (Period Two)

An initial multiple regression was conducted according to the following formula:

$$\text{Relative Growth} = b_0 + b_1 \text{ (Development Cost Barriers)} + b_2 \text{ (Number of Competitors)}$$

The results printout (MRA-3a illustrated in Appendix D) revealed that the Number of Competitors variable had a high p-value (.573). Based on that high p-value, the Number of Competitors variable was removed from the equation. This left only the Development Cost Barriers variable in the equation. Subsequently, the regression was performed once more (MRA-3b in Appendix D, and MRA 3 in Table 22), and the outcome is illustrated in Table 22. With an adjusted R^2 value of 10.1%, and with a F-value of 8.21, along with an overall p-value of 0.006, the model is also significant, but a relatively weak predictor of Relative Growth.

d. MRA-4 (Period Two):

The final regression model for Period Two was conducted for Number of Competitors as the dependent variable according to the following formula.

$$\text{Number of Competitors} = b_0 + b_1 \text{ (Development Cost Barriers)}$$

The model results are shown in Table 22. The adjusted R^2 value was 66.1%, with a F-value of 128.5 and an overall P-value of 0.00, thus indicating statistical significance and a good fit.

8. Validation of Results: Period One vs Period Two:

The statistical analysis conducted in this study indicated a great deal of similarities between Period One and Period Two. Hence, the results of Period Two appeared to validate the findings of Period One.

To begin, the descriptive statistics of the sample were quite similar between the two time periods. Though they were not exactly the same, the sample showed a natural progression of trends originally outlined in Table 1. Also, in both time periods, all of the hypothesized relationships were found to be statistically significant and in the specified directions. This comparison is shown in Table 23, which consists of the results indicated earlier in Table's 19 and 20.

Table 23: Correlation Comparisons Between Period One and Period Two.

	Relationship	**Period One** Corrl.Coef.(p-value)	**Period Two** Corrl.Coef.(p-value)	**Period One Sign**	**Period Two Sign**
1	Development Cost Barriers & Number of Competitors	-.828 (0.00)	-.816 (0.00)	Neg.	Neg.
2.	Relative Growth & Development Cost Barriers	.336 (.005)	.335 (0.006)	Pos.	Pos.
3.	Development Cost Barriers & Revenue Share	.439 (0.00)	.465 (0.00)	Pos.	Pos.
4.	Development Cost Barriers & EBITDA	.919 (0.00)	.930 (0.00)	Pos.	Pos.
5.	Relative Growth & Number of Competitors	-.316 (.005)	-.312 (0.01)	Neg.	Neg.
6.	Number of Competitors & Revenue Share	-.320 (0.008)	-.368 (0.002)	Neg.	Neg.
7.	Number of Competition & EBITDA	-.806 (0.00)	-.821 (0.00)	Neg.	Neg.
8.	Relative Growth & Revenue Share	.484 (.001)	.654 (.000)	Pos.	Pos
9.	Relative Growth & EBITDA	.405 (.001)	.441 (0.00)	Pos	Pos.
10.	Revenue Share & EBITDA	.489 (0.00)	.543 (0.00)	Pos.	Pos.

In all of relationships outlined in Table 23, the correlation coefficients and the p-values were very close between Period One and Period Two. Also, the hypothesized signs were in the predicted direction. In general, the strength of the relationships among the study variables appeared to be stronger in Period Two, particularly the between correlations between Relative Growth and Revenue Share, and Revenue Share and EBITDA.

Further comparisons of the multiple regressions models between Period One and Period Two produced equations that were also quite comparable. These comparisons are outlined in Table 24, which is based on the results originally illustrated in Tables 21 and 22.

Table 24: Comparison MRA Results – Period One vs. Period Two.

Period /(MRA)	Dependent Variable	Regress. Equation	R-sq.	R-Sq. (Adj).	T	P	F
1 (1)	EBITDA	= 2.19 + 1.73 logDCB + 0.0817 logRS	85.4%	84.9%	16.42 2.45	0.00	187.2
2 (1)	EBITDA	= 3.30 + 1.98 logDCB + 0.143 logRS	88.1%	87.7%	17.74 2.90	0.00	236.42
1 (2)	Revenue Share	= -6.46 + .804logDCB + 3.43 sqrRG	32.0%	29.9%	2.85 3.47	0.00	15.09
2 (2)	Revenue Share	= -5.96 + 0.626 logDCB + 4.46 sqrRG	49.6%	48.0%	2.96 5.96	0.00	31.49
1 (3)	Relative Growth	=-.354 + 0.096 logDCB	11.3%	9.9%	2.87	.005	8.27
2 (3)	Relative Growth	= -0.389 + 0.112 logDCB	11.4%	10.1%	3.02	.006	9.13
1 (4)	Number of Competitors	= 218 – 39.8 logDCB	66.7%	66.2%	11.4	0.00	130.38
2 (4)	Number of Competitors	= 216 - 36.7 logDCB	66.6%	66.1%	11.28	0.00	128.5

Legend: log = logarithm, DCB = Development Cost Barriers, sqrRG = Square Root Relative Growth,

As shown in Table 24, the equations produced by the MRAs, decomposed the same variables for both time periods. Also, the adjusted R^2 coefficients were

very similar for all equations, as well as their respective t-values, p-values, and F-values. Again, the relationships appeared to be stronger for Period Two than for Period One. Therefore, these results indicate that Period Two has validated the results from Period One, as well as indicating that the relationships outlined in Chapter II and Chapter III of this study held up over time. Likewise, this outcome lends support to the more comprehensive framework outlined by the LMS model.

9. Theoretical Discussion of Results:

Having completed the statistical analysis, additional discussions are presented outlining some of the theoretical issues of the findings. Each one is discussed accordingly.

Barriers to Entry and Competition:

A strong negative correlation between Number of Competitors and Development Cost Barriers (above .80) indicates that these variables are almost interchangeable (inversely) within the U.S. lodging industry. Hence, the results of this analysis support the findings of Bain (1951, 1956), and Mann (1966) that as Barriers to Entry increase, Competition decreases. Therefore, we should expect that in industries, markets or segments where the Entry Barriers are low, there should be more Competition, and vice versus.

Barriers to Entry and Growth:

A positive correlation (greater than .33) between Development Cost Barriers and Relative Growth supports the findings of Gale (1972), Shepherd (1972b) and Yip (1982) indicating that as Barriers to Entry go up, Growth for incumbent brands improves. Since growth was measured using revenues in this study, growth could come in several forms. For example, Barriers to Entry would protect incumbent brands from Competition (as supported earlier), allowing them to potentially grow in a variety of ways, including growing their ADR (the ability

to charge higher prices), growing their occupancy (the ability to sell more rooms), growing via new developments (the ability to deploy resources, cultivate relationships or utilize logistics quicker than the competition) or brand conversions, growing by way of hotel acquisitions (the ability to finance the purchase of competitors) or a combination of all these. Since all these approaches impact a brand's revenues, it cannot be determined exactly by this study which tactical vehicle of revenue growth will emerge.

Similarly, the actual Entry Barriers can also differ from case to case. Bain (1956) stated that Barriers to Entry can consist of capital requirements, scale economies, governmental approvals, product differentiation, and absolute costs, hence any one of these, or a combination of all of them could benefit incumbent brands, depending on the environment they compete in. As discussed earlier, the two more prevalent barriers in the hotel industry appear to be capital requirements (development costs) (Hanson, 1990) and product differentiation (complexity of service systems) (Schaffer, 1986). Hence, a brand's administration of their service systems may garner customer loyalty, thus allowing those brands to sell more rooms, charge higher rates or expand more quickly to new locations, thus improving their overall growth opportunities.

Barriers to Entry and Market Share:

Another outcome of this analysis was a moderate correlation between Development Cost Barriers and Revenue Share (approximately .45). This finding supports the conclusions of Bain (1956), Mann (1966), Hall (1987) and Karakaya and Stahl (1991) that Entry Barriers assist incumbent brands in gaining Market Share by preventing potential competitors from seizing market opportunities. This also lends credence for a positive Market Share-Financial Performance (MS-FP) relationship (discussed later). Specifically, Porter (1979b) stated that high Barriers to Entry are a stabilizing influence and a requisite condition for a positive MS-FP relationship.

Scherer (1980) also concluded that a positive relationship between Barriers to Entry and Market share, was an indication that segmentation within an industry was in effect, creating some form of market power for brands in each segment. Since the presence of segmentation in the lodging industry is well documented (Rushmore, 1990; Crawford-Welch, 1990), these findings of a moderate relationship between Barriers to Entry and Market Share, lend support to the notion that segmentation may be effective in generating market power for certain brands within the U.S. lodging industry. However, at this time, it cannot be determined which segments and/or which brands benefit the most from this market structure.

Barriers to Entry and Financial Performance:

One of the strongest relationships detected in this study was the correlation between Development Cost Barriers and EBTIDA (greater than .90). These findings support the conclusions of Bain (1956), Porter (1979b), Hanson (1991), and (Chung, 2000), which generally state that as Entry Barriers go up, Financial Performance for incumbent firms also increases. This conclusion is further reinforced by the strong inverse relationship between Barriers to Entry and Competition found in the U.S. lodging industry. When combined with the relationships between Barriers to Entry and Growth (outlined above), along with Entry Barriers positive relationship with Market Share, the strong correlation with Financial Performance is perhaps not surprising. According to the LMS model, all of these constructs work in tandem, culminating in higher profitability for brands fortunate or prudent enough to be in this situation.

e. Competition and Growth:

A negative correlation greater than .31 between Number of Competitors and Relative Growth supports the work of Gale (1972), Porter (1979a), Healy, Palepu and Ruback (1992), and Kim and Singal (1993). Basically, these researchers found that as Competition increases, the Growth rate of firms

deceases. The basic axiom is that; an increase in Competition can seize on potential market opportunities that would have otherwise been left to incumbent brands. An example of this in the hotel industry has been the dynamics of certain high growth segments. According to Table 8, the extended-stay segments (Residence Inn, Extended Stay America, etc.), and the mid-scale segment without food and beverage (Hampton Inn, Holiday Inn Express etc.) have shown the greatest growth over the last decade. In all of these situations, as Competition has entered each one of those segments, the collective Growth rates of incumbent brands has decreased (Sheridan, 1997).

f. Competition and Market Share:

The results of the statistical analysis indicated an association between the Number of Competitors and Revenue Share which ranged from -.320 (1996/1997) to .368 (1998/1999), showing a moderate relationship between the two variables. These findings are consistent with earlier research that posited that Market Share and Competition are inversely related (Bain, 1951; Gale, 1972; Domowitz, Hubbard & Peterson, 1986; Martin, 1988). This means that generally, as Competition increases, we would expect Market Share to go down for brands, either in specific industries or market segments. The clearest evidence of this in the hotel industry is the swing in industry concentration levels over the last 27 years. The collective market share of the top four brands in the United States in 1972 was 36.9 (Martel, 1974), compared to 17.4 percent in 1999. At the time Martel (1974) documented approximately 32 hotel brands operating in the United States. In 1999 there were approximately 185 brands competing in the U.S. market (American Hotel & Lodging Association, 2000). Therefore, over the last three decades, the increase in Competition in the U.S. lodging industry has eroded the collective Market Share of industry leaders, providing further support of this relationship.

g. Competition and Financial Performance:

This analysis uncovered a strong statistical inverse relationship (above .80) between the Number of Competitors and EBITDA. This implies that as Competition increases, brand profitability decreases. Economic scholars have long supported the notion that Financial Performance decreases with a rise in Competition (Chamberlain, 1933; Bain, 1951; Baumol, 1967, Gale, 1972). Porter (1979b) stated that the intensity of competition puts pressure on pricing and production costs (via added extra features and amenities to retain customers), thus reducing operating margins for firms. This would appear to be consistent with the U.S. lodging industry where firms in the limited-service segment of the industry (which has many competitors) tend to compete more on price, thus limiting operating margins (Bear Stearns, 1997). Simultaneously, over the years, these lower-rated segments have seen a rise in the level of amenities demanded by customers, and offered by competitors, which have placed a greater strain on profit levels (Marriott & Brown, 1997).

h. Growth and Market Share:

This study demonstrated a moderate relationship between Relative Growth and EBITDA (with positive correlation coefficients ranging from .468 in Period One to .654 in Period Two). These findings are consistent with the results of several earlier studies including Gale (1972), Morck, Shleifer, and Vishny (1990), Healy, Palepu and Ruback (1992) and Dow (2000). The broad opinion of these scholars was that as Growth increases, Market Share also improves. An example of this phenomenon in the U.S. lodging industry has been the stellar growth of the Courtyard by Marriott brand (Marriott & Brown, 1997). Over the course of a decade, this brand grew from just a few hotels to the number seven position, in terms of revenue market share, in the U.S. lodging market (See Table 4), grossing over $ 2.2 billion in 1999. Courtyard was able to grow their revenues through a combination of price increases, new developments, limited conversions, and improved occupancies relative to the market (Dube, Enz, Renaghan & Siguaw, 2000)

i. Growth and Financial Performance:

This investigation uncovered a moderate positive relationship between Relative Growth and EBITDA (based on correlation coefficients in excess of .4). These findings support the results of Hall and Weiss (1967), Gale (1972), Porter (1979b), Morck, Shleifer, and Vishny (1990), Healy, Palepu and Ruback (1992), and Dow (2000). All of these studies reinforced the concept that as the Growth rate of firms increases, Financial Performance increases as well. Kwansa (1994) documented this phenomenon in the hospitality sector by demonstrating how various mergers and acquisitions in the lodging and restaurant industries improved returns for company stakeholders.

j. Market Share and Financial Performance:

Based on the evidence presented, Revenue Share and EBITDA are related within the U.S. hotel industry. The correlation coefficient for this relationship was approximately .50. Therefore, we can state that Market Share and Financial Performance are an integral element of the structure of the domestic lodging market. This is consistent with the findings of many scholars such as Gale (1972), Shepherd (1972), Buzzell, Gale & Sultan (1975) and others (see Table 9 for a more comprehensive list). Szymanski et al (1993), as well as Dow (2000) concluded that this relationship could be due to either dominant firms obtaining higher prices due to their popularity and brand recognition, and/or through economies of scale (i.e. national supplier contracts, lower per unit advertising costs, central marketing and sales offices etc.) and/or higher efficiencies via greater asset utilization. Similarly, this study confirms the conclusion formed by Martel (1974) who originally put forth this proposition that market share and financial performance are related in the U.S. lodging sector.

k. General Discussion - LMS Model:

In summary, this empirical analysis appears to provide support for the relationships proposed in the LMS model. The findings of this study are also

consistent with a broad array of related literature within the hospitality, strategy, economics and marketing fields. Based on the statistical reinforcement of the hypotheses put forth in Chapter III, the LMS model has received a measure of attainment, and may be a viable platform for future research. Though the LMS model shows promise, additional validation will be required by other studies, and in other environments, in order to make it a more reliable tool.

One possible way to further refine the LMS model would be to utilize the assistance of structural equations modeling (SEM). SEM / Path Analysis techniques could be used to test the LMS model in order to better understand its multiple dependence relationships, and any potential unobservable concepts in those relationships (Bagozzi, 1980). Since the constructs in the LMS model work in tandem, SEM would have been a useful tool. However, SEM could not be used in this study due to the small sample size. If additional data on hotel brands become available for future research (based on better and more comprehensive tracking of lodging industry data), a larger sample size (100 observations is considered the minimum) could add to the power and confidence to the statistical tests applied in that analysis, thus making SEM a viable testing alternative.

The relationships proposed in the LMS model were based on generally accepted market structures and economic axioms found in the manufacturing sector (Porter, 1980). The subsequent statistical validation of the LMS model suggests that those same relationships apply equally to the lodging industry. Accordingly, since the hotel industry is generally representative of the services sector, this provides additional support to the paradigm that market structure is universal, and that these economic forces are prevalent across both manufacturing as well as service industries. Nevertheless, this study was conducted during a period of economic prosperity. There is some evidence to suggest that, under certain circumstances, or poor economic conditions, these relationships may not always hold true (Woo, 1983). Likewise, the strength of those relationships may vary according to sector (Porter, 1979b; Hall, 1987). Hence there is a need for

further investigation in this regard to better understand and potentially quantify any potential differences.

10. Addressing the Research Questions:

Originally, three research questions were posited in the first chapter. Following the statistical analysis, we can now reflect on the outcome and the potential impact these results might have in addressing the above mentioned research questions. Each one is discussed accordingly.

1. Does the competitive market structure of the U.S. lodging industry impact the financial performance of hotel brands?

Based on the results of this investigation, it would appear that there is a relationship between competitive market structure and financial performance in the U.S. lodging industry. This conclusion is based on several empirical tests. First of all, the correlation analysis provided support for hypotheses 4, 7, 9 and 10 which proposed a relationship between various elements of market structure and the financial performance variable. Likewise, MRA 1 in Tables 21 and 22 demonstrated that EBITDA was strongly influenced by both Development Cost Barriers and Revenue Share (note: Number of Competitors also had a strong correlation with EBITDA but was removed from the analysis due to concerns over multicollinearity with Development Cost Barriers – likewise, Relative Growth also showed a statistically significant relationship with EBTIDA but was also removed from the final equation). The R^2 values for MRA 1 were in excess of 85% for both Period One and Period Two, suggesting that the relationship between competitive market structure and financial performance is robust. Hypotheses, 1,2 and 5 were also supported in the study, providing a better understanding of the dynamics of the lodging industry, and helping to further

explain how Competition, Barriers to Entry, Growth and Market Share work in tandem in impacting Financial Performance.

2. Is there a relationship between a hotel brand's market share and its financial performance in the U.S. lodging industry?

Here again, this research question also gained support. The empirical evidence seems to suggest that a relationship does exist between Market Share and Financial Performance for hotel brands in the United States. Hypothesis 10 received support from statistical tests outlined in Table's 23 and 24, all of which indicated that EBTIDA and Revenue Share are related.

3. Does the competitive market structure of the U.S. lodging industry impact a hotel brand's market share?

Based on empirical reinforcement from Hypothesis 3, 6, and 8 along with the results of MRA 2 in Tables 21 and 22, we can infer that all of the other elements of competitive market structure (Relative Growth, Competition, and Barriers to Entry), shown in the LMS model, also have a relationship with Market Share. However, according to MRA 2 in Table 24, when combined, Entry Barriers and Growth appear to have the greatest predictive power for Market Share without the assistance of Competition.

In summary, it would appear that all three research questions have been addressed successfully by this study. Stated simply, competitive market structure impacts Financial Performance. In addition, Barriers to Entry, Competition, and Growth all impact Market Share and profitability. And lastly, Market Share and Financial Performance are also positively correlated. These market relationships are consistent with many other industries documented in other studies (Hall, 1987; Szymanski, Bharadwaj, & Varadarajan, 1993).

11. Chapter Summary:

Chapter IV presented the data gathering procedures, the statistical analyses for the study, along with a discussion of their results. In addition, the results were compared with the hypotheses outlined in earlier chapters, indicating varying degrees of support. The LMS model was partially validated by comparing the results of Period Two (1998/1999) to Period One (1996/1997). Lastly, the Research Questions were addressed.

CHAPTER V
Conclusions

This chapter presents the findings of this investigation, which are followed by the conclusions and the managerial implications of the research. Subsequently, the study's limitations are outlined, and lastly, recommendations are put forth for future research.

1. Findings:

Over the four previous chapters of this dissertation, the background literature was reviewed to provide the necessary theoretical underpinnings for this study, research propositions were developed, a proposed methodology was described, and ultimately the results were presented. This cross-sectional study included a comprehensive analysis of the U.S. lodging sector using a sample of 67 hotel brands representing 63 percent of the national room inventory (1999). At this juncture, the principal findings of this exploration are discussed. They are as follows:

a. The financial performance of hotel brands in the Unite States is strongly impacted by competitive market structure.
b. Among the various market structure constructs studied, barriers to entry played the most dominant role in determining the level of financial performance of hotel brands.
c. Based on a strong negative relationship, barriers to entry are very effective in reducing competition in the U.S. lodging industry.
d. Of the constructs studied, barriers to entry had the greatest influence on enhancing the market share of incumbent hotel brands.

e. The growth rate of incumbent brands has a positive relationship with barriers to entry.
f. As competition intensifies, the growth rate of hotel brands slows down.
g. Increases in competition are negatively correlated with the market share of hotel brands.
h. Competition has a strong negative relationship with the financial performance of hotel brands.
i. Market share improves as the growth rate of hotel brands increases.
j. As the growth rate of brands increases, profitability also improves.
k. Improvements in a hotel brand's market share are positively related to increases in profitability.

These findings are generalizable only to branded hotel brands operating in the United States between 1996 and 1999. To further place these findings in the proper context, below are some of key characteristics of the U.S. lodging industry uncovered in the course of this investigation:

In 1999 there were approximately 188 brands competing across the country, representing 47,000 properties and 70 percent of the four million guestrooms in the nation. The average brand had approximately 130 hotels with 14,000 rooms, collectively generating approximately $ 400 million in revenue. Hotel development costs for branded properties averaged around $ 80,000 per room. Likewise, each hotel earned, on average, around $ 2 million in EBITDA that year. Industry profitability reached $ 22.6 billion, representing a profitability percentage of 22 percent (both were new records for the industry). The national ADR at the time was $ 81.41 with an annual occupancy level of 63.3 percent.

Also in 1999, the average brand faced 29 competitors (measured in direct competitor equivalents), and controlled approximately 1.5 percent market share. The dominant brand (Marriott) controlled 6.64 percent of the market. Likewise,

the top four brands for that period (Marriott, Holiday Inn, Best Western and Sheraton) had an aggregate market share of 17.4 percent, a sharp decline from the 36.9 percent level held in 1974. This level of industry concentration placed the lodging sector into the "low concentration" category (Bain, 1951), which characterized it as having monopolistic competition (Martel, 1974).

Between 1990 and 2000, the U.S. lodging industry grew at an average rate of 6.3 percent, starting slowly in the early 90's and building toward the latter part of the decade. During that period, the extended stay segments of the industry, and the limited-service segments experienced double-digit growth, while the full-service segment of the industry had relatively flat growth. These high growth segments also accounted for much of the increase in new brand introductions, further intensifying competition in the industry. In addition, a total of $58 billion worth of mergers and acquisitions transpired during the decade, representing the greatest period of industry consolidation ever.

2. Conclusions:

Based on the research conducted throughout this dissertation, for the period 1996 to 1999, several conclusions can be drawn from this analysis, subject to the limitations discussed later in this chapter.

1. The U.S. lodging market is becoming more competitive at the brand level, primarily because of the introduction of new brands and brand extensions (See Tables 1, 17, 18).

2. New brands are entering the market, in part, due to continued segmentation of the industry which continues to dissect the lodging sector into more finite products and services directed at unique customer groups (Matovic & McCleary, 2002).

3. The U.S. lodging market is in the mature stage of its lifecycle, with moderate growth opportunities (See Table 6).

4. Brands are becoming larger via new developments, mergers and acquisitions, and the conversion of independent properties to chain affiliates (See Table 7).

5. Industry consolidation is prevalent both at the brand level, as well as at the property level, due to competitive pressures, limited growth opportunities and the benefits of increased market share on financial performance (See Tables 1, 7, 24).

6. Market structure relationships between barriers to entry, competition, growth, market share and financial performance within the lodging sector (which is generally considered representative of the services sector), behave consistently with those same relationships in the manufacturing sector.

The findings and conclusions discussed above have a number of implications for the U.S. lodging industry managers. They are discussed below.

3. Managerial Implications:

The subject matter of this study may be of benefit to hotel executives who are attempting to size up the competitive dynamics of today's lodging market. If supported by additional empirical research, the results of this study may help further influence lodging strategy both at the brand, as well as the property level for the future. These results have several implications. For example:

a. Barriers to Entry:

Hotel industry executives may wish to investigate the implications of the strong relationship found between barriers to entry and profitability in the context of long term planning within their own organizations. Coupled with the

effectiveness of entry barriers in reducing competition, prudent managers may seek out entry deterrent strategies to either maintain or improve their profitability margins. (Note: According to Bain (1956) barriers to entry can be classified as being capital requirements, governmental approvals, product differentiation, absolute costs, scale economies). On the one hand, if hotel firms are looking to introduce new brands into the market, they should consider entry into segments of the lodging industry that have high existing entry barriers. An appropriate feasibility study should be conducted weighing the economic benefits provided by these less volatile segments, with the rigors of overcoming those same barriers in the short term. If a new brand can create a defendable niche within these segments, overcoming these barriers may be attainable. If not, it is likely to fail since the evidence presented indicate that existing barriers to entry are effective at reducing competition.

On the other hand, management may wish to create barriers to entry for their existing brands both at the local market level and at the national brand level. As Karakaya and Stahl (1991) documented various "behavioral barriers" can be an effective deterrent. These behavioral barriers include such practices as lobbying to place restrictions on new development, lawsuits, territorial franchise restrictions, price undercutting, patents on new technology as well as product proliferation via brand extensions into new segments of the industry. These same behavioral barriers may be effective in the hotel industry. For example, organizational efforts to implement behavioral entry barriers could consist of creating hotel features, added services or technological innovations that customers find attractive that cannot be easily duplicated by competitors. If handled prudently, diligent coordination of these various complex service systems may give certain brands a competitive advantage in the marketplace, while forcing competitors out of that market space.

b. Acquisitions:

Based on the positive relationship between market share and financial performance, hotel brand executives may wish to consider reenergizing their appetite for acquisitions. The attainment of critical mass would allow brands to take advantage of various economies of scale in distribution, purchasing, and marketing. With the largest brand (Marriott) controlling only 6.64 percent of market revenues, there appears to be room for further consolidation. Based on the work of Bain (1956) and Mann (1966), further increases in market share should produce even greater bottom line efficiencies. With interest rates at extremely low historical levels, and the weakening of the U.S. lodging industry due to the current recession, and the terrorist attacks of September 11th on New York and the Pentagon, this environment may be ideal for further industry consolidation, particularly for organizations that have the appropriate managerial and financial resources.

Because growth via improvements in same-store-sales, development of new locations, or conversion of independent hotels may be relatively slow in a mature market, acquisitions may be looked upon more favorably. If so, small to medium size brands may become the targets for larger organizations to grow their distribution. Accordingly, lodging executives will likely need to weigh the benefits of market share growth with the balance sheet implications of any potential acquisitions.

4. Limitations of the Study:

In designing this investigation, every effort was made to minimize any potential limitations or biases. However, there are several aspects of the study that readers should be cognizant of.

First of all, the use of secondary sources of information has some potential drawbacks. The data for this study was collected from a variety of publications. This data was generated by numerous entities and organizations for a wide array of purposes and uses, and not specifically for this study. Though the goals of those entities in gathering that information may have been similar in nature to this study, nevertheless there are always potential concerns when researchers do not collect the raw data directly. These include sampling errors, coding problems, clerical errors in aggregating and averaging the data, etc. Hence, having direct access to the data is preferable. Nevertheless, for broad economic, or market-level studies such as this one, the viability of conducting the study may have been jeopardized if this secondary data was not available.

The size of the sample in this study consisted of only 67 brands. Generally, this size of sample would be considered relatively small by some statistical standards (Hair, Anderson, Tatham, & Black, 1998). Even though these 67 brands were the aggregate total of thousands of hotels and millions of guestrooms in the United States, the unit of analysis was the brand. Hence, this study had to work within those limitations, which placed certain statistical analyses like structural equations modeling (SEM) out of reach.

The difficulty of obtaining data on hotel brands prevented this researcher from using multiple variables to measure the constructs put forth in the LMS model. Generally, the preferred methodology would have been to use several measures for each construct (Babbie, 1989; Newman, 1991). As information becomes more plentiful in the future for hospitality data, researchers studying this subject matter should attempt to use multiple variables to further test the validity and reliability of the constructs used in this study, as well as any potential new ones that are uncovered.

The generalizability of this study's results is limited to the purposeful sample of hotel brands operating in the United States. As Marriott and Brown

(1997) indicated, brand's are only dominant in the domestic U.S. market, but far less so in international markets. Therefore, these findings may be difficult to apply to the global lodging industry. In addition, this analysis only considered brands and did not include independent hotels which make up approximately 30 percent of the U.S. rooms inventory. Likewise, this study did not examine the role of conglomerate multi-brand parent companies in the U.S. lodging industry. Lastly, the time frame covered in the study was between 1996 and 1999, which was a period of strong economic growth, both for the U.S. hotel industry, as well as the world economy. These findings may or may not hold up under poor economic conditions like the recession of the early 1990's. Hence, applying these findings outside of these parameters outlined above may be inappropriate.

5. Suggestions for Future Research:

Since this was the first major study of competitive market structure in the hotel industry, there are numerous possibilities for further inquiry into this topic. Specifically, the robust results achieved in this investigation could generate exciting new opportunities for further research.

An obvious next step in this line of inquiry is to validate the LMS model in other environments or time periods. For example, replicating this study in poor economic periods, or in the future with different competitive dynamics in place may produce varying results. Under such circumstances, some of the relationships found in this study may not be as strong, or may not hold up at all, which may have an adverse affect on existing competitive strategy. If the relationships posited in the LMS model do hold up, this could make it a more versatile tool for researchers in the future. Though the LMS model appears to show promise, additional refinements could improve both its efficiency and effectiveness. Further testing in this area may be warranted.

The constructs used in this study, which provided the framework of the LMS model, were drawn from a broad range of academic disciplines. Perhaps additional constructs exist that are more specific to the hospitality sector that could either add to the predictive capabilities of the LMS model, or perhaps challenge the LMS model in estimating the structural relationships within the U.S. lodging market. It is possible that these service-related constructs, which account for some of the unique aspects of the lodging sector, could play a greater role in the competitive framework of the lodging market. Potentially, some of these, as yet, unknown constructs may have better explanatory power in predicting market interrelationships, as well as the financial performance of hotels or hotel brands. Likewise, these potential new constructs may be helpful in better understanding and articulating the dynamics of the hotel industry.

Market-level performance research in the hotel industry has been generally confined to analysis of financial results and conducted by some of the larger consulting firms. A broader perspective may include adding additional constructs to better understand macroeconomic movements in the market, and their impact on the U.S. lodging industry. These market-level constructs could include the impacts of changes in Gross Domestic Product (GDP), interest rates, travel patterns, or even the weather on lodging industry performance. In some cases, these market-level constructs may not be measurable or observable at the transaction level. Hence, a potential opportunity exists to conduct studies on either segments or the industry as a whole as the unit of analysis.

A longitudinal study on the interactions of the elements of competitive market structure, and their potential impact on brand performance may provide additional insights into the dynamics of the lodging industry. Previous research in other industries (Bain, 1951; Gale, 1972, Hall, 1987) have detected the presence of compounding effects of various market or economic forces on entry barriers, competition, market share and brand performance over a period of years that may not be visible in cross-sectional research. By understanding the long-term

implications of these and other constructs, researchers and managers can plan accordingly to minimize their negative impacts.

Another area of interest may be further studies of the antecedents of constructs such as barriers to entry, competition, market share or growth and their interrelationships. These constructs have spawned an impressive list of academic research in other disciplines, and show promise in assisting researchers and industry practitioners to better understand market dynamics in other environments and industries.

Finally, researchers may wish to consider conducting an analysis of the impact of market share and financial performance at the conglomerate / multi-brand organizational level to see if such a relationship exists. A study of companies like Starwood, Hilton, Marriott, Carlson, Accor, Bass, and others may lend additional insight into the competitive structure of the global lodging market. The objective of such an investigation would be to determine if the multi-brand strategy has been effective in generating improved financial results for those organizations or their stakeholders. Since the number of parent companies that own and operate hotel brands is getting smaller, a large statistically significant sample may be difficult to obtain. However, a case study or various qualitative research methods may be more appropriate for such an investigation.

6. Summary:

This research study offers another piece in the puzzle of hospitality marketing. By means of a research program that proceeded through all the prescribed steps of speculation, questions, propositions, hypotheses, observations, analysis, discussion, conclusion, and extension, this analysis has sought to make a theoretical and normative contribution to what is essentially a developing discipline.

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Appendices

Appendix A. Major Hotel Portfolio and Brand Acquisitions (1992-2000)

Yr	Acquirer	Acquired	Amount $ (millions)
1993	Four Seasons	Regent	145.2
	HFS (now Cendant)	Super 8 Motels	125.0
	ITT Sheraton	Desert Inn Properties	160.0
	Choice Hotels International	Journey's End (Canada)	10.0
	HFS	Park Inns	5.0
	New World Development	Stouffer Hotels	1,000.0
	Morgan Stanley	Red Roof Inns	637.0
1994	Doubletree Corp.	Guest Quarters Suites	20.0
	Powder Corporation	Alpine Meadows Tahoe	38.2
	Indemnity Holdings	Star Cripple Creek Casino	17.9
	Intrawest Corp.	Stratton Ski/Victoria USA	69
	Sea Containers Ltd.	Santa Fe Financial Corp.	11.0
	Buckhead America	Cricket Inns	42.8
	HFS	Villager Lodge	5.0
1995	United / Harvey Holdings	United Inns	66.6
	Lane Hospitality	Victor Management	2.5
	Marriott International	Ritz-Carlton (49%)	200.0
	Starwood Capital Group	Westin	537.0
	HFS	Knights Inn	15.0
	Club Med SA (Paris)	Club Med Inc. (New York)	153.4
1996	Falcor Suite Hotels	Crown Sterling Suites	466.5
	HFS	Travelodge Hotels	39.3
	National Lodging Corp.	96 Travelodge hotels	98.0
	Motels of America	19 Travelodge hotels	32.0
	TRT Holdings	Omni Hotels Group	500.0
	Doubletree Corp.	RFS, Inc.	58.1
	Doubletree Corp.	RFS REIT	18.5
	North American Resorts	Voyageur First Inc.	23.4
	Marriott International	Forum Group Inc.	605.0
	Hilton Hotels	Ladbroke Group PLC (5%)	190.0

	National Lodging Corp.	Chartwell Leisure	57.0
	Hilton Hotels	Hiltons owned by Prudential	267.0
	Doubletree Corp.	Red Lion Hotels	1,174.1
	Interstate	Equity Inns	46.5
	HFS	RCI	825.0
	Bristol	61 Hotels from Bass PLC	659.0
1997	Extended Stay America	Studio Plus	290.0
	Patriot America	Carefree Resorts	256.6
	Signature Resorts	AVCOM Int.	21.6
	Starwood Lodging Trust	HEI Hotels LLC	327.0
	Marriott International	Renaissance	1,000.0
	Signature Resorts	Plantation Resort Group	59.1
	Host Marriott Corp.	Forum Group	540.0
	Patriot America	California Jockey Club	238.0
	Wyndham Hotel Corp.	Clubhouse Hotels Inc.	130.0
	Starwood Lodging Trust	Flatley Co./ Tara Hotels	470.0
	Patriot America	Grand Heritage Hotels	22.0
	Signature Resorts	LSI Group	50.6
	Vistana Resorts	Points of Colorado	24.0
	Host Marriott Corp.	Chesapeake Hotel Ltd.	31.5
	Sunstone Hotel Investors	Kahler Realty Corp.	322.0
	Signature Resorts	Marc Hotels & Resorts	6.0
	CapStar Hotel Co.	Winston Hospitality	34.0
	Signature Resorts	Vacation International Ltd.	24.3
	Prime Hospitality	Homegate Suites	125.0
	Signature Resorts	Global Development Ltd.	18.0
	Promus Hotel Corp.	Doubletree Corp.	4,700.0
	Fairfield Communities	Vacation Break USA	240.0
1998	Starwood Lodging Trust	Westin Hotels & Resorts	1,570.0
	Patriot America	Wyndham Hotel Corp.	1,100.0
	Promus Hotel Corp.	Harrison Conference Assoc.	60.0
	Patriot America	WHG Resorts & Casinos	300.0
	Signature Resorts	MMG Development Corp.	26.5
	Starwood Lodging Trust	ITT Sheraton	14,600.0
	Realty Refund Trust	InnSuites Hotels	57.6
	Whitehall Street Real Estate	Chartwell Leisure	348.5
	Bass PLC.	Inter-Continental	2,900.0
	Patriot America	Arcadian International	296.0
	CapStar	Metro Hotels	238.0
	U.S Franchise Systems	Best Inns & Suites	84.0
	Bristol Hotel Co.	Omaha Hotels	100.0
	Capital Communities Corp.	Entry Resorts	12.6
	Boykin Lodging	Red Lions Inn	271.0

	Patriot America	Interstate Hotels	2,100.0
	Patriot America	Summerfield Suites	180.0
	Blackstone Hotels	Savoy Hotels	866.0
	Patriot America	Carnival Hotels	485.0
	Intrawest Corp.	Sandestin Resorts	130.0
	Meditrust Co.	La Quinta Inns.	2,650.0
	CapStar	American General Hospit.	3,000.0
	FelCor Suites Hotels	Bristol Hotels	1,700.0
	Meristar	South Seas Properties	117.2
	Servico Inc.	Impac Hotel Group	92.0
1999	Marriott International	ExecuStay Corp.	128.0
	CP Hotels	Fairmont (67%)	238.1
	Luxe Worldwide	Warner Hotels	122.1
	Jameson Inns	Signature Inns	105.1
	Suburban Lodges of America	GuestHouse International	3.3
	Vail Resorts	Grand Teton Lodge Co.	50.0
	Accor SA	Red Roof Inns	1,100.0
	Starwood Hotels & Resorts	Vistana Resorts	360.0
	Humphrey Hospitality	Supertel Hospitality	43.3
	SHP Acquisition LLC	Sunstone Hotel Investors	880.0
	Hilton	Promus -Embassy, Hampton	3,600.0
2000	Starwood Hotels & Resorts	Ciga SPA (Italy)	295.0
	Millenium & Copthorne	Richfield Hospitality	640.0
	Bass PLC	Bristol Hotels & Resorts	157.0

Appendix B

Competitor Index

The Competitor Index is based on the work conducted by various consulting firms in identifying competitive impact within the lodging industry. These types of studies are done to measure business impact in the case of territorial disputes within franchise organizations, or as part of feasibility studies for new developments. The formula demonstrated in this appendix has its roots in a model used by HVS International in identifying which hotels are potential competitors to either existing or proposed new hotels. Though this model is predominantly used in identifying competitors in single city markets, the basic principle can also be applied to national brands competing in the United States. Here, the U.S. can be viewed as a larger version of the traditional city market.

The primary assumption made here is that competitors are classified according to price and placed into various homogeneous segments (Smith Travel Research, 2001; Bear Stearns, 2001). Hence, a hotel brand will have direct competitors within its segment, as well as indirect competitors from other segments. These indirect competitors can be from either higher or lower priced segments (as measured by average daily rate – ADR). This is illustrated in equation 1.For example, Hilton, which competes in the luxury segment would have direct competitors such as Sheraton, Marriott, Hyatt and several others totaling 11 in its primary segment. In addition, Hilton could encounter some competition from the Deluxe segment (e.g. Four Seasons, Fairmont Hotels or others) in some markets and for certain customer segments. Also, Hilton likely have some competition from the Upscale segment (consisting of Embassy Suites, Crowne Plaza and others) for more price sensitive customers.

1. Total Competitors (TC) = Direct Competitors (Within a Brands Primary Segment) + (Indirect Competitors from Higher and Lower Priced Segments)

The indirect competitors can be quantified into “direct competitor equivalents” in order to come up with the total number of whole competitors. These indirect competitors come from both lower and higher priced segments (see equation 2). This is based on the concept that ADR’s are averages which reflect a wide range of prices offered by brands such as group discounts, discount programs, marketing promotions, all of which are designed to appeal to multiple consumers segments. Also, brands have a wide range of prices, due to broad geographic dispersion of their properties, the prices of the cities they compete in, and varying cost structures that may be reflected in their pricing. To complicate matters, many customers are not necessarily brand loyal (Yesawich, Pepperdine & Brown, 1998), they may select alternative accommodations based on location requirements, displacement from their preferred brand, special promotions by

competitors etc. Hence, the concept of indirect competitors from lower and higher segments is reflected in more detail in equation 2.

2. TC = (Number of Competitors in Primary Segment)]

+ [(Higher Priced Segment ADR Overlap) X (Number of Competitors in Higher Segment)]

+ [(Lower Priced Segment ADR Overlap) X (Number of Competitors in Lower Segment)]

The traditional range of overlap using in these types of models is around 25 percent of a brand's ADR. So for example, if a brand has an ADR of $ 100, then its higher price limit might be $ 125 which would likely compete with brands in higher priced segment, and its lower limit might be $ 75 which would compete with brands in the lower priced segment. The ADR overlap for the higher priced segments is shown in equation 3 below.

3. Higher Priced Segment ADR Overlap = {(Brand's ADR + 25% ADR) – [Higher Segment ADR

- (Higher Segment ADR X 25%ADR)] / Higher Price Segment ADR}

X Number of Competitors in Higher Priced Segment

Similarly, the lower priced segment ADR overlap is shown in equation 4.

4. Lower Priced Segment ADR Overlap = {(Brand's ADR - 25% ADR) - [Lower Priced Segment ADR

- (Lower Priced Segment ADR X 25%ADR)] / Lower Price Segment ADR}

X Number of Competitors in Lower Priced Segment

Having illustrated how the price overlaps are structured, we can now restate equation 1 as equation 5.

5. TC = (Number of Competitors in Primary Segment)]

+ [(Equation 3) X (Number of Competitors in Higher Segment)]

+ [(Equation 4) X (Number of Competitors in Lower Segment)]

Hence, by combing the number of direct competitors and indirect competitors (direct competitor equivalents) we arrive at a brand's total number of competitors in the market.

Appendix C

1. T-test ADR:

$$t_{obs} = \frac{\bar{x} - u}{s/\sqrt{n}} = \frac{81.41 - 80.05}{5.91/\sqrt{67}} = \frac{1.36}{.722} = 1.88$$

From the T-distribution tables (Lehmann Gupta Steckel, 1998)
T critical for n=67 and alpha value of .05 = 1.65

if $t_{obs} > t_{crit}$ Reject Ho

1.88 > 1.65

Therefore, reject the null hypothesis, there is no statistical difference between the sample ADR and the national ADR for 1999.

2. T- test Occupancy:

$$t^{obs} = \frac{\bar{x} - u}{s/\sqrt{n}} = \frac{64.7 - 63.9}{.921/\sqrt{67}} = \frac{.80}{.112} = 7.14$$

From the T-distribution tables (Lehmann Gupta Steckel, 1998)
T critical for n=67 and alpha value of .05 = 1.65

if $t_{obs} > t_{crit}$ Reject Ho

7.14 > 1.65

Therefore, reject the null hypothesis, there is no statistical difference between the sample occupancy and the national occupancy for 1999.

Appendix D

PERIOD ONE (1996/1997)

Correlations (Pearson)

```
          LogDCB LogEBITD    LogRS Competit
LogEBITD   0.919
           0.000

LogRS      0.439    0.489
           0.000    0.000

Competit -0.828   -0.806   -0.320
           0.000    0.000    0.008

SqRt%Gro   0.336    0.405    0.484   -0.316
           0.005    0.001    0.000    0.009

Cell Contents: Correlation
               P-Value
```

Multiple Regression Analysis (MRA)

MRA – 1a (Period One)

```
The regression equation is
LogEBITDA = - 0.965 + 1.49 LogDCB - 0.00540 Competition + 0.0656 LogRS
           + 0.491 SqRt%Growth

Predictor        Coef       StDev          T        P       VIF
Constant      -0.9648      0.9328      -1.03    0.305
LogDCB         1.4889      0.1713       8.69    0.000       3.4
Competit    -0.005399    0.003340      -1.49    0.141       3.1
LogRS         0.06562     0.04403       1.62    0.111       1.5
SqRt%Gro       0.4905      0.3785       1.30    0.200       1.4

S = 0.1869      R-Sq = 86.5%     R-Sq(adj) = 85.6%

Analysis of Variance

Source            DF          SS          MS         F        P
Regression         3     13.8387      3.4597     99.00    0.000
Residual Error    62      2.1667      0.0349
Total             66     16.0054

Source       DF      Seq SS
LogDCB        1     13.5231
Competit      1      0.0861
LogRS         1      0.1709
SqRt%Gro      1      0.0587

Unusual Observations
```

```
Obs   LogDCB   LogEBITD      Fit    StDev Fit     Residual    St Resid
 63     4.42     5.3369   5.3726       0.1059      -0.0357      -0.23 x

X denotes an observation whose X value gives it large influence.

Durbin–Watson statistic = 1.43
```

MRA – 1b (Period One)

```
The regression equation is
LogEBITDA = - 2.19 + 1.73 LogDCB + 0.0817 LogRS

Predictor        Coef       StDev          T        P       VIF
Constant      -2.1927      0.5533      -3.96    0.000
LogDCB         1.7329      0.1056      16.42    0.000       1.2
LogRS         0.08170     0.04088       2.45    0.044       1.2

S = 0.1911      R-Sq = 85.4%     R-Sq(adj) = 84.9%

Analysis of Variance

Source            DF          SS          MS         F        P
Regression         2     13.6689      6.8344     187.20    0.000
Residual Error    64      2.3366      0.0365
Total             66     16.0054

Source       DF      Seq SS
LogDCB        1     13.5231
LogRS         1      0.1458

Unusual Observations
Obs   LogDCB   LogEBITD      Fit    StDev Fit     Residual    St Resid
  1     5.48     6.7739   7.1513       0.0716      -0.3773      -2.13 x
  2     5.13     6.9023   7.1569       0.0709      -0.2546      -1.44 x
  3     4.89     7.0056   7.1298       0.0753      -0.1242      -0.71 x

X denotes an observation whose X value gives it large influence.

Durbin-Watson statistic = 1.52
```

MRA – 2a (Period One)

```
The regression equation is
LogRS = - 8.74 + 1.22 LogDCB + 0.0106 Competition + 3.51 SqRt%Growth

Predictor        Coef       StDev          T        P       VIF
Constant       -8.737       2.432      -3.59    0.001
LogDCB         1.2176      0.4655       2.62    0.011       3.1
Competit     0.010573    0.009463       1.12    0.268       3.0
SqRt%Gro       3.5053      0.9889       3.54    0.001       1.1

S = 0.5349      R-Sq = 33.4%     R-Sq(adj) = 30.2%

Analysis of Variance
```

```
Source            DF          SS          MS         F        P
Regression         3      9.0237      3.0079     10.51    0.000
Residual Error    63     18.0262      0.2861
Total             66     27.0498

Source       DF      Seq SS
LogDCB        1      5.2086
Competit      1      0.2196
SqRt%Gro      1      3.5955

Unusual Observations
Obs   LogDCB      LogRS      Fit    StDev Fit     Residual    St Resid
  1     5.48    -1.9374  -1.8653       0.2360      -0.0721      -0.15 x
 63     4.42    -3.1107  -2.9964       0.3027      -0.1143      -0.26 x

X denotes an observation whose X value gives it large influence.

Durbin-Watson statistic = 1.01
```

MRA – 2b (Period One)

```
The regression equation is
LogRS = - 6.46 + 0.804 LogDCB + 3.43 SqRt%Growth

Predictor        Coef       StDev          T        P       VIF
Constant       -6.457       1.326      -4.87    0.000
LogDCB         0.8037      0.2824       2.85    0.006       1.1
SqRt%Gro       3.4295      0.9884       3.74    0.001       1.1

S = 0.5359      R-Sq = 32.0%     R-Sq(adj) = 29.9%

Analysis of Variance

Source            DF          SS          MS         F        P
Regression         2      8.6665      4.3332     15.09    0.000
Residual Error    64     18.3834      0.2872
Total             66     27.0498

Source       DF      Seq SS
LogDCB        1      5.2086
SqRt%Gro      1      3.4579


Unusual Observations
Obs   LogDCB      LogRS      Fit    StDev Fit     Residual    St Resid
  1     5.48    -1.9374  -1.8653       0.2360      -0.0721      -0.15 x
 63     4.42    -3.1107  -2.9964       0.3027      -0.1143      -0.26 x

X denotes an observation whose X value gives it large influence.

Durbin-Watson statistic = 0.96
```

MRA – 3a (Period One)

```
The regression equation is
```

```
SqRt%Growth = - 0.210 – 0.00066 Competition + 0.0698 LogDCB

Predictor        Coef       StDev          T        P       VIF
Constant       -0.210      0.3063      -0.69    0.494
Competit    -0.000657    0.001193      -0.55    0.584       3.0
LogDCB        0.06981     0.05819       1.20    0.235       3.0

S = 0.06762      R-Sq = 11.7%     R-Sq(adj) = 8.9%

Analysis of Variance

Source            DF          SS          MS         F        P
Regression         2    0.038771    0.019385      4.24    0.019
Residual Error    64    0.292615    0.004572
Total             66    0.331386

Source       DF      Seq SS
LogDCB        1    0.032190
SqRt%Gro      1    0.006581


Unusual Observations
Obs  Competit   SqRt%Gro      Fit    StDev Fit     Residual   St Resid
  1      4.9     0.04070  0.16913      0.02515     -0.12843     -2.05 x
  2      4.0     0.11150  0.16971      0.02491     -0.05821     -0.93 x
  3      5.9     0.10710  0.16848      0.02547     -0.06138     -0.98 x
 63     12.8     0.06390  0.08958      0.03813     -0.02568     -0.46 x

X denotes an observation whose X value gives it large influence.

Durbin-Watson statistic = 1.65
```

MRA – 3b (Period One)

```
The regression equation is
SqRt%Growth = - 0.354 + 0.0960 LogDCB

Predictor        Coef       StDev          T        P       VIF
Constant      -0.3538      0.1605      -2.20    0.031
LogDCB        0.09598     0.03338       2.87    0.005       3.0

S = 0.06725      R-Sq = 11.3%     R-Sq(adj) = 9.9%

Analysis of Variance

Source            DF          SS          MS         F        P
Regression         1    0.037386    0.037386      8.27    0.005
Residual Error    65    0.294001    0.004523
Total             66    0.331386

Source       DF      Seq SS
LogDCB        1    0.032282
SqRt%Gro      1    0.006649


Unusual Observations
```

Obs	LogDCB	SqRt%Gro	Fit	StDev Fit	Residual	St Resid
1	5.48	0.04070	0.17253	0.02425	-0.13183	-2.10 x
2	5.13	0.11150	0.17253	0.02425	-0.06103	-0.97 x
3	4.89	0.10710	0.17253	0.02425	-0.06543	-1.04 x

X denotes an observation whose X value gives it large influence.

Durbin-Watson statistic = 1.63

MRA – 4 (Period One)

The regression equation is
Competition = 218 - 39.8 LogDCB

Predictor	Coef	StDev	T	P
Constant	218.13	16.77	13.01	0.000
LogDCB	-39.832	3.488	-11.42	0.000

S = 7.028 R-Sq = 66.7% R-Sq(adj) = 66.2%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	1	6438.9	6438.9	130.38	0.000
Residual Error	65	3210.1	49.4		
Total	66	9649.0			

Obs	LogDCB	Competit	Fit	StDev Fit	Residual	St Resid
1	5.48	4.890	-0.292	2.534	5.182	0.79 x
2	5.13	4.000	- 0.292	2.534	4.292	0.65 x
3	4.88	5.880	- 0.292	2.534	6.172	0.94 x
63	4.42	12.830	42.116	1.583	-29.286	-4.28 x

Durbin-Watson statistic = – 1.04

PERIOD TWO (1998/1999)

Correlations (Pearson)

	LogDCB	LogEBITD	LogRS	Competit
LogEBITD	0.930			
	0.000			
LogRS	0.465	0.543		
	0.000	0.000		
Competit	-0.816	-0.821	0.368	
	0.000	0.000	0.002	
SqRt%Gro	0.335	0.441	0.654	-0.312
	0.006	0.000	0.000	0.010

Cell Contents: Correlation
P-Value

Multiple Regression Analysis (MRA)

MRA – 1a (Period Two)

```
The regression equation is
LogEBITDA = - 1.61 + 1.64 LogDCB - 0.00839 Competition + 0.0876 LogRS
          + 0.720 SqRt%Growth

Predictor        Coef       StDev          T        P       VIF
Constant      -1.6114      0.9376      -1.72    0.091
LogDCB         1.6365      0.1695       9.66    0.000       3.3
Competit      0.08762     0.05815       1.51    0.137       2.0
LogRS       -0.008391    0.003330      -2.52    0.014       3.0
SqRt%Gro       0.7204      0.4347       1.66    0.103       1.8

S = 0.1880      R-Sq = 89.7%     R-Sq(adj) = 89.1%

Analysis of Variance

Source            DF          SS          MS         F        P
Regression         4     19.1804      4.7951    135.62    0.000
Residual Error    62      2.1920      0.0354
Total             66     21.3724

Source       DF      Seq SS
LogDCB        1     18.4902
Competit      1      0.3343
LogRS         1      0.2588
SqRt%Gro      1      0.0971

Unusual Observations
Obs   LogDCB   LogEBITD      Fit    StDev Fit     Residual    St Resid
 07     5.12     6.9655   6.5394       0.0834       0.4262       2.53 x
 63    12.78     5.2359   5.3387       0.1068      -0.1028      -0.66 x

X denotes an observation whose X value gives it large influence.

Durbin–Watson statistic = 1.85
```

MRA – 1b (Period Two)

```
The regression equation is
LogEBITDA = - 3.30 + 1.98 LogDCB + 0.143 LogRS

Predictor        Coef       StDev          T        P       VIF
Constant      -3.2999      0.5957      -5.54    0.000
LogDCB         1.9804      0.1116      17.74    0.000       1.3
LogRS         0.14290     0.04931       2.90    0.005       1.3

S = 0.1995      R-Sq = 88.1%     R-Sq(adj) = 87.7%

Analysis of Variance
```

```
Source            DF          SS          MS         F        P
Regression         2     18.8245      9.4122    236.42    0.000
Residual Error    64      2.5479      0.0398
Total             66     21.3724

Source       DF      Seq SS
LogDCB        1     18.4902
LogRS         1      0.3343

Unusual Observations
Obs   LogDCB   LogEBITD      Fit    StDev Fit     Residual    St Resid
  1     5.51     6.9298   7.3261       0.0773      -0.3963      -2.15 x
  2     5.92     7.0132   7.3443       0.0753      -0.3312      -1.79 x
  3     4.74     7.1099   7.3014       0.0807      -0.1915      -1.05 x

X denotes an observation whose X value gives it large influence.

Durbin-Watson statistic = 1.85
```

MRA – 2a (Period Two)

```
The regression equation is
LogRS = - 6.62 + 0.802 LogDCB + 0.00451 Competition + 4.49 SqRt%Growth

Predictor        Coef       StDev          T        P       VIF
Constant       -6.620       1.853      -3.57    0.001
LogDCB         0.8017      0.3531       2.27    0.027       3.1
Competit     0.004507    0.007194       0.63    0.533       3.0
SqRt%Gro       4.4920      0.7530       5.97    0.000       3.0

S = 0.5349      R-Sq = 33.4%     R-Sq(adj) = 30.2%

Analysis of Variance

Source            DF          SS          MS         F        P
Regression         3     10.4194      3.4731     20.92    0.000
Residual Error    63     10.4576      0.1660
Total             66     20.8770

Source       DF      Seq SS
LogDCB        1      4.5048
Competit      1      5.8494
SqRt%Gro      1      0.0652

Unusual Observations
Obs   LogDCB      LogRS      Fit    StDev Fit     Residual    St Resid
  1     5.51    -1.9922  -1.9988       0.1802      -0.0066      -0.02 x
 63    12.78    -2.9042  -2.7159       0.2302      -0.1883      -0.56 x

X denotes an observation whose X value gives it large influence.

Durbin-Watson statistic = 0.94
```

MRA – 2b (Period Two)

```
The regression equation is
LogRS = - 5.96 + 0.626 LogDCB + 4.46 SqRt%Growth

Predictor        Coef       StDev          T        P       VIF
Constant       -5.657       1.006      -5.62    0.000
LogDCB         0.6258      0.2132       2.96    0.005       1.1
SqRt%Gro       4.4587      0.7475       5.96    0.001       1.1

S = 0.4055      R-Sq = 49.6%     R-Sq(adj) = 48.0%

Analysis of Variance

Source            DF          SS          MS         F        P
Regression         2     10.3543      5.1771     31.49    0.000
Residual Error    64     10.5227      0.1644
Total             66     20.8770

Source       DF      Seq SS
LogDCB        1      4.5048
SqRt%Gro      1      5.8494

Unusual Observations
Obs   LogDCB      LogRS      Fit    StDev Fit     Residual    St Resid
  1     5.51    -1.9922  -1.9988       0.1802      -0.0066      -0.02 x
 63    12.78    -2.9042  -2.7159       0.2302      -0.1883      -0.56 x

X denotes an observation whose X value gives it large influence.

Durbin-Watson statistic = 1.58
```

MRA – 3a (Period Two)

```
The regression equation is
SqRt%Growth = - 0.206 – 0.00067 Competition + 0.0687 LogDCB

Predictor        Coef       StDev          T        P       VIF
Constant      -0.2064      0.3065      -0.67    0.503
Competit    -0.000674    0.001191      -0.57    0.584       3.0
LogDCB        0.06874     0.05798       1.19    0.284       3.0

S = 0.06763      R-Sq = 11.7%     R-Sq(adj) = 8.9%

Analysis of Variance

Source            DF          SS          MS         F        P
Regression         2    0.038620    0.019310      4.22    0.019
Residual Error    64    0.292766    0.004574
Total             66    0.331386

Source       DF      Seq SS
LogDCB        1    0.037156
SqRt%Gro      1    0.001465
```

```
Unusual Observations
Obs   LogDCB   SqRt%Gro      Fit    StDev Fit     Residual   St Resid
  1     5.51     0.04070  0.16913      0.02524     -0.12843     -2.04 x
  2     5.92     0.11150  0.16971      0.02400     -0.05821     -0.92 x
  3     4.74     0.10710  0.16848      0.02547     -0.06138     -0.98 x
 63    12.78     0.06390  0.08958      0.03807     -0.02568     -0.47 x

X denotes an observation whose X value gives it large influence.

Durbin-Watson statistic = 1.65
```

MRA – 3b (Period Two)

```
The regression equation is
SqRt%Growth = - 0.389 + 0.0112 LogDCB

Predictor        Coef       StDev          T        P       VIF
Constant       -0.389      0.1610      -2.20    0.032
LogDCB         0.1124     0.03334       2.87    0.006       3.0

S = 0.06728      R-Sq = 11.9%     R-Sq(adj) = 10.1%

Analysis of Variance

Source            DF          SS          MS         F        P
Regression         1    0.037156    0.037386      9.03    0.006
Residual Error    65    0.294231    0.004527
Total             66    0.331386

Source       DF      Seq SS
LogDCB        1    0.032282
SqRt%Gro      1    0.006649

Unusual Observations
Obs   LogDCB    SqRt%Gro      Fit    StDev Fit     Residual   St Resid
  1     5.51     0.04070  0.17253      0.02425     -0.13183     -2.10 x
  2     5.92     0.11150  0.17253      0.02425     -0.06103     -0.97 x
  3     4.74     0.10710  0.17253      0.02425     -0.06543     -1.04 x

X denotes an observation whose X value gives it large influence.

Durbin-Watson statistic = 1.63
```

MRA – 4 (Period Two)

```
The regression equation is
Competition = 216 - 36.7 LogDCB

Predictor        Coef       StDev          T        P
Constant       218.47       16.85      12.96    0.000
LogDCB        -39.719       3.490      11.28    0.000

S = 7.042       R-Sq = 66.6%     R-Sq(adj) = 66.1%

Analysis of Variance
```

Source	DF	SS	MS	F	P
Regression	1	6425.2	6425.2	128.55	0.000
Residual Error	65	3223.8	49.6		
Total	66	9649.0			

Obs	LogDCB	Competit	Fit	StDev Fit	Residual	St Resid
1	5.51	4.890	-0.292	2.534	5.182	0.79 x
2	5.92	4.000	- 0.292	2.534	4.292	0.65 x
3	4.74	5.880	- 0.292	2.534	6.172	0.94 x
63	12.78	12.830	42.116	1.583	-29.286	-4.28 x

Durbin-Watson statistic = – 1.04

Vita

Dragan Matovic

Dragan Matovic was born in Yugoslavia on October 31, 1962. He and his family moved to Canada in 1971. He received a Bachelor of Arts degree with a concentration in economics from the University of Waterloo. A few years later, he also received an MBA with a concentration in management from Wilkes University, along with an MBA with a concentration in hospitality from Niagara University. Prior to starting his doctoral work, he earned a Master of Science degree with a concentration in hotel administration from Cornell University.

Upon completion of his undergraduate studies, he began his professional career as a general manager at a number of full service hotels throughout Canada and the United States for Rado-Mat Holdings, a privately owned real estate development firm. Over the years, he has been involved in a number of different projects including hotels, conference facilities, resorts, retail, golf courses, restaurants, attractions, casino gaming, residential developments and commercial properties.

At the time of this writing, he is a senior executive with Panoramic Hospitality, a hospitality development firm in Canada. He has published several articles in a number of scholarly journals and has lectured at various universities. In addition, he has been active in a number of civic organizations, and has chaired several marketing and tourism entities.