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**Ratio Analysis for the Hospitality Industry: A cross
Sector Comparison of Financial Trends in the Lodging,
Restaurant, Airline and Amusement Sectors**

**RATIO ANALYSIS FOR THE HOSPITALITY INDUSTRY: A
CROSS SECTOR COMPARISON OF FINANCIAL TRENDS IN THE
LODGING, RESTAURANT, AIRLINE AND AMUSEMENT
SECTORS**

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and
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ABSTRACT

This study uses ratio analysis to examine salient financial trends within four major sectors of the hospitality industry for the 1997-2001 period – namely lodging, restaurants, airlines and the amusement sectors. Cross-sectional analysis results indicate that at least for the test period, eight out of thirteen financial ratios were statistically different across the four hospitality segments. As such, financial trends and cross sectional anomalies within the examined hospitality industry segments are better understood.

Introduction

Evidence exists that since the late 1800's, ratio analysis has been widely used in the study of published financial data. Indeed, ratios have been used to help evaluate companies' financial condition since the beginning of the finance discipline (Lawder, 1989). Literature on financial statement analysis has discussed the use of ratio analysis as a fundamental tool for evaluating the financial health of a company, and many financial ratios have been developed and are used by practitioners and academicians. Moreover, accounting and finance textbooks typically emphasize the use of the ratio analysis.

However, and in spite of all the evidence that financial ratio analysis is, and has been, a widely used technique, there have been very few attempts to apply it in the hospitality industry. Indeed, a survey of the literature revealed a handful of studies addressing the issue within the hospitality industry context. Therefore, the current study attempts to investigate the technique as applied in this industry. Hospitality-related industry segments may comprise hotels, restaurants, airlines, and other amusement and recreational services. Knowing the financial characteristics of companies in each of these four segments would be helpful for those who like to understand the commonality and differences between them. Financial ratio analysis is a useful analytical tool for this purpose. It can reveal the relative financial strengths and weaknesses of these segments, and identify the potential investment opportunities for investors interested in this industry. The objective of the study is to provide information to a variety of entities that might be interested in comparing major financial characteristics of companies on its different segments. The study is divided into several parts. The next section is devoted to shed the light on the nature and uses of ratio analysis, as well as its application in the hospitality industry. Research Methodology is then presented along with data analysis and discussion. Finally, brief summary and future research suggestions are then presented.

Literature Review

Overview of Financial Ratios

A financial ratio is a number that expresses the value of one financial variable relative to another. It is the numeric result gained by dividing one financial number by another. Calculated this way, financial ratio allows an analyst to assess not only the

absolute value of a relationship but also to quantify the degree of change within the relationship (Lawder, 1989). From a management perspective, the rationale for use of financial ratio analysis is that by expressing several figures as ratio, information will be revealed that is missed when the individual members are observed (Thomas & Evanson, 1987). Managers can then use this information to improve their operations.

The two most important and most commonly available sources of financial variables that can be used in calculating ratios are the balance sheet and the income statement. These particular statements appear to be the most universally accepted. And because almost all of business firms develop such statements, the use of ratio analysis is to be found throughout a variety of industries. A new trend in this regard, however, has been the development of different ratios depending on the data provided by the statement of cash flows. However, the newly developed ratios are not as commonly used as those which are based on the balance sheet and income statement.

Rating agencies and financial publishing firms collect data on large publicly-traded companies and make this information available for various interested entities. Users of such financial data and ratios may include companies evaluating the creditworthiness of their debtors, investors considering the merit of alternative investment, and banks and other lenders when granting loans. Also, auditors can use ratios when conducting analytical reviews of their clients (Gardiner, 1995).

Given that both the balance sheet and the income statement provide numerous amount of information, it is possible to develop an endless number of ratios. Ratios relate items of the income statement to each other, items of the balance sheet to each other, and items of one statement to items of the other statement. However, the various items in the

financial statements are usually highly correlated with each other and hence financial ratios are highly correlated with one another (Horrigan, 1966; Zeller & Stanko, 1997). As a result, the tendency among analysts is to classify and reduce a large number of ratios to a small subset. More detailed analysis will be carried out if significant changes in key ratios are witnessed. There is no total agreement over a standard set of ratios, but a thorough review of the theoretical and empirical literature identified five major categories of the financial ratios. Up to the authors' knowledge, this set of ratios is considered comprehensive and, therefore, were adopted in the study. Each category is identified by specific ratios. Table 1 lists each of these categories and the ratios that go under each, along with examples from the literature.

(Insert Table 1 Here)

Profitability ratios: meaningful ratios can be calculated to show the ability of a company to use its sales, assets, and equity to generate return. Return on assets ratio shows the overall rate of return on the company's assets. Return on equity indicates the stockholders' return on their investment in the company. Additionally, the net profit margin is a measure of the company's profitability of sales after taking into account all expenses and income taxes. It tells a company's net income per dollar of sales.

Liquidity ratios: these ratios measure the company's ability to maintain sufficient liquidity to pay its obligations as they arise. The traditional ratios used for this purpose are the current ratio and the quick ratio. While the former indicates how well current assets cover current liabilities, the latter concentrates on the more liquid current assets

(namely, cash, marketable securities, and receivables; inventory , however, is excluded.)
in relation to current obligations.

Capital Structure ratios: capital structure ratios compare the funds supplied by the owners (equity) with the funds provided by creditors (debt), and attempts to measure the risks to creditors as reflected by the company's capital structure. The most commonly used ratios are debt to total assets, which highlight the relative importance of debt financing to the company by showing the percentage of the company's assets that are supported by debt financing. Debt to equity ratio serves a similar goal and tells the percentage of financing provided by creditors for each one dollar provided by shareholder. Times interest earned is a ratio that measures the company's ability to meet its interest payments, and thus avoid bankruptcy. It also sheds some light on the company's capacity to take on new debt.

Asset Management ratios: to measure how well or how poorly a company is operating and how efficient it is in using its assets, a set of ratios can be calculated. The average collection period of accounts receivable can enable to measure the probability of collecting a company's credit sales. The result of this ratio represents an average number of days it takes the company to collect its credit sales. Inventory turnover indicates the number of days inventory is on hand before it is sold. The higher the turnover rate, the more efficient the company is in managing its inventory. Moreover, to demonstrate how well the company's assets are being used to generate sales, the ratio of sales to total assets, or total asset turnover as it is sometimes called, is often calculated.

Market Value ratios: a company's profitability, risk, quality of management, and many other factors are reflected in its stock and security prices. Hence, market value

ratios indicate the market's assessment of the value of the company's securities.

Price/Earnings ratio shows how much the investors are willing to pay for each dollar of the company's earnings per share. The price-to-book-value ratio measures the market's valuation relative to balance sheet equity. A higher ratio suggests that investors are more optimistic about the market value of a company's assets, its intangible assets and the ability of its managers.

Applications of Financial Ratios in the Hospitality Industry

With particular reference to the hospitality industry, and in an attempt to identify the most useful financial ratios as perceived by lodging general managers, corporate executives, bankers, and owners of lodging companies, Schmidgall (1989) found that these different groups attach varied degrees of importance to the various financial ratios. For example, general managers consider the operating and activity ratios as the most useful, owners give profitability ratios more importance. Liquidity ratios were considered more useful by corporate executives. The study indicated that solvency ratios are the most important to bankers; and for the financial executives, profitability and activity ratios were perceived as more useful than others.

Malk & Schmidgall (1993) analyzed financial statements of room departments from a management instead of an accounting viewpoint. Ratios were specifically developed for this aspect of the hotel operations, and were recommended to be used by hotel decision-makers.

Damitio, Dennington & Schmidgall (1995) talked about comparative statement analysis, common-size analysis of the income statement, and ratio analysis as basic

techniques lodging financial managers can use to analyze financial statements. However, no empirical application of the ratios or tools was carried out in the study.

Singh & Schmidgall (2002) investigated the importance of liquidity, solvency, activity, profitability and operating ratios as perceived by 500 lodging financial executives. Importance and frequency of usage of these ratios were measured by a questionnaire employing a six-point semantic differential measurement scale. The final analysis indicated that operating and profitability ratios are the most important ratios for lodging managers. However, no calculations of these ratios with regard to the lodging companies were carried out, and no other segments of the hospitality industry than the hotel segment were included in their study.

A study on the casino industry was carried out by Upneja, Kim & Singh (2000). Using data obtained from CAMPUSTAT for the year 1996, a cross-sectional analysis was performed to compare the liquidity, solvency, efficiency and profitability ratio categories between small and large casinos. Sharp differences were found between these two types of casinos, a result that is in contrast with the results of a study by Gu (1999) who analyzed the same segment.

Schmidgall & DeFranco (2004) focused on the club segment of the industry. The study collected data through means of a questionnaire that was distributed to club controllers. Respondents were asked to provide information about accounts in the balance sheets, the statement of activities, and the statement of cash flows. This information was then used to calculate the ratios. Respondents were also asked to rank their top most important financial and operating ratios used in their clubs. Results of the study indicated that the top five ratios in terms of use and importance were payroll cost percentage, cost

of good sold percentage, cost of beverage sold percentage, the current ratio, and the debt-equity ratio.

Methodology

Two forms of ratio analysis are used in this study. First, financial ratios are used in horizontal, or time series, analysis in order to evaluate the trend of each of the ratios over time. Descriptive statistics are used to recognize trends of each ratio for each segment, and also to compare ratios' trends between different segments of the hospitality industry. A financial ratio may fluctuate from one year to another. Data used for calculating a financial ratio for one year may be influenced by some temporary unusual events occurring in that year and they may not represent the long term true financial characteristics of the company. A time frame of five years is typical horizon in financial literature. This time horizon was used in several empirical financial ratio analysis studies (e.g., Omran & Ragab, 2004; Cudd & Guggal, 2000; Zaman & Usal, 2000; Meric, Prober, Eichhorn & Meric, 2004), and is used in the current study.

Second, ratios are used in vertical, or cross-sectional analysis, in which companies in different hospitality segments are compared during this five-year period. Multivariate analysis of variance (MANOVA) is used to test the differences between hospitality industry segments in terms of the financial ratios. Using ratios to compare the financial characteristics of different groups of companies belonging to the same industry or to different industries has been popular methodology in finance literature (e.g., Locke & Scrimgeour, 2003; Johnson, 1979; Li, Liu, Liu & Whitmore, 2001; Beaver, 1968; Gunduz & Tatoglu, 2003; Edmister, 1972; Kaminski, Wetzel & Guan, 2004). Ketz,

Doogar, & Jensen (1990) provided evidence on the comparability of financial ratios across ten different industries.

Thirteen key financial ratios are used as measures of various financial characteristics of companies. The financial ratios calculated in the study are presented in Table 2.

(Insert Table 2 Here)

This study used secondary data, which were drawn from the Standard & Poor's COMPUSTAT database for the period of 1997-2001. The total number of firms included in the analysis was 212, all of them are publicly traded hospitality firms, classified as follows: 41 hotels and motels with the Standard Industrial Classification (SIC) code of 7011, 121 restaurants (SIC code of 5812), 12 amusement and recreational services companies (SIC code of 7900), and 38 airline companies (SIC code of 4512). However, not all of the companies had all the information for the entire period of 1997-2001, therefore, the number of observations used to calculate each of the financial ratios varied from segment to segment. Table 3 provides the number of these observations in more details.

(Insert Table 3 Here)

Results and Discussion

Trend analysis

Figure 1 illustrates the net profit margin ratio, return on assets, and return on equity as measures of profitability achieved by each of the four segments. Considering the net profit margin ratios, hotels and motels and airline companies are compared favorably with restaurants and amusement and recreational services companies. The ratio is fluctuating and drastically deteriorating for the amusement and recreational services segment of the industry. Although not high in absolute value, the net profit margin ratio is most steady for the airline companies. ROA ratio is consistent with the net profit margin ratio in that amusement and recreational services companies are having the lowest levels of profitability as measured by ROA. Over the five-year period, this ratio is negative, and the trend for this segment tends to be stable up to 2000 and drastically declines in 2001. ROE ratio shows a slightly different picture. In addition to the various factors that are not directly controllable (such as business cycle and exchange rates fluctuations, travel industry trends, amount of available leisure time, fuel and transportation prices), recreational and amusement segment was adversely affected by significant reductions in domestic and international travel in response to the September 11th attacks and their aftermath. The fact that the operations of companies in this segment are highly seasonal with the great majority of their revenues are earned in the second and third quarters of each year intensified the effects of September 11th attacks. Moreover, many of these companies (including Walt Disney Co.) were involved in several acquisitions and other forms of strategic initiatives, affecting their start-up losses incurred. Notably, revenues of companies working in this segment in 2001 were adversely affected by unusually difficult weather in a large number of their major markets.

All of the segments have volatile ROE ratios over the five-year period, with negative values most of the time. However, a closer look at the data indicates that few of the companies are causing this sharp instability as they achieve very high or very low annual levels of ROE. This is supported by the standard deviation value obtained (455.7, 330.6, 101.1, and 628 for the four segments, respectively). This is especially the case in the amusement and recreational services segment where one of the companies achieved remarkably negative ROE ratio over the time range of the study.

(Insert Figure 1 Here)

Liquidity ratios are illustrated in Figure 2. Although fluctuating over time, the current ratio is in favor of the amusement and recreational services segment. The segment with the lowest current ratio is restaurants. Airline companies are achieving steady levels in terms of their ability to convert their assets into cash. Almost identical patterns are reflected by the quick ratio as another measure of liquidity. This ratio shows low, but almost steady, levels of liquidity among all segments except for the amusement and recreational services.

(Insert Figure 2 Here)

As far as the capital structure ratios are concerned, Figure 3 shows that the trend for each of the related three ratios is different. Total debt to total assets ratio in the restaurant segment shows a dramatic increase in 1998 with approximately 400% over the

previous year of approximately 50 % in 1998, while the remaining three segments showed a very stable pattern for this ratio. However, the total debt to total equity ratio indicates a steadier trend for the amusement and recreational services and restaurant segments than for hotels and motels and airline segments. In 2000, airline segment showed extremely high debt to equity ratio, which was more than 2,000%, but it returned to its normal level in 2001. Except for the year 1998, hotels and motels segment showed a very stable debt to equity ratio. The third ratio measuring the capital structure, times interest earned, indicates that the four segments have, in general, remarkably different trends in their abilities to meet their interest payments. Hotels and motels segment and recreational and amusement services segment, both of which have steady trends, showed low times interest earned, compared to the other two segments. Volatile trends are being shown by this ratio for the airline and restaurant segments.

(Insert Figure 3 Here)

As regards the asset management ratios, average collection period ratio in Figure 4 shows that the hotels and motels segment is improving its ability in collecting its credit sales. The trend for this segment is positively decreasing from 127 days in 1997 to 45 days in 2001. However, this average is still high compared with the other three groups of hospitality companies. The ratio is obviously in favor of the restaurant segment. Along with airline companies, restaurants are enjoying a stable trend over the time period of the study. Inventory turnover ratio is in favor of the amusement and recreational services segment as its inventory turnover is higher, over the five years, than all other segments,

especially during the period of 1997 through 1999. Hotels and motels, airline and restaurant segments have similar levels of inventory turnover over the time. Total asset turnover ratio shows that better results are being achieved by restaurant segment. Restaurants have higher ability than other segments in terms of managing their assets to generate sales. Airline segment shows similar trend but with lower results than those of the restaurants. Unstable trends of the total asset turnover are shown for hotels and motels and amusement and recreational services segments.

(Insert Figure 4 Here)

Finally, Figure 5 illustrates the trends for the market value ratios. The steadiest trend for the price to earnings is being realized for the restaurant segment, ranging from 3.9 to 9.4. More volatile trend is being achieved by the other three segments, especially for hotels and motels where the ratio is drastically increasing or decreasing from one year to another. Price to book value indicates that airline, restaurant, hotels and motels segments have almost similar and steady trends over the time. However, amusement and recreational services segment of the industry has more unpredictable trend, especially in 1997 to 1998 where the value increased from -62.4 to 11.4.

(Insert Figure 5 Here)

Cross-sectional analysis

The omnibus MANOVA test results indicated that the Wilks's Lamda, which is a measure of the difference between groups of means on the independent variable, is 11.464, $p = .000$. This means that there are statistically significant differences in terms of financial ratios between hotels and motels, restaurant, amusement and recreational services and airline segments of the industry. Additionally, and since the result of MANOVA is significant, a follow-up univariate ANOVA was performed. Table 4 shows the results.

(Insert Table 4 Here)

Examination of the table indicates that there were significant differences in eight ratios (namely, net profit margin, current , inventory turnover, quick, ROA, total assets turnover, total debt to total assets, and average collection period) across the four segments of companies. However, price to book ($F = .165, p = .92$), price to earnings ($F = 1.675, p = .171$), ROE ($F = .145, p = .933$), total debt to total equity ($F = .406, p = .748$) and times interest earned ($F = 1.202, p = .308$) are not significantly different among hotels and motels, restaurants, amusement and recreational services and airline companies.

As a post hoc strategy, Tukey test was conducted to identify where the differences are. Table 4 presents the results. Family error rate which is set up as .05 in this study is the probability that a family of comparisons contains at least one Type I error. Since family error rate is generally set up as .05. It shows that the liquidity of restaurants, as measured by both the current (Mean Difference, MD, = $-.386, p = .000$) and the quick ratios (MD= $-.432, p = .000$) are significantly different from the liquidity of the airline

companies. Airline companies seem to have more liquidity levels to pay its obligations than do the restaurants. The correlation statistics shows a significantly correlated relationship between current and quick ratios ($r = .981$, sig. = .000), meaning that they measure the financial characteristic of the liquidity. Restaurants also have lower liquidity levels compared with the hotels and motels as measured by the quick ratio (MD=.347, $p = .001$).

(Insert Table 5 Here)

Considering the differences between hotels and motels and amusement and recreational services in terms of the inventory turnover ratio (MD=-272.854, $p = .000$), TAT ratio (MD= -.458, $p = .019$) and average collection period ratio (MD=16.663, $p = .001$), we can conclude that these two segments have different abilities in managing their assets. Although it has longer average collection period, hotels and motels segment seems to be more able to manage its inventory and total assets. This result is enhanced by the results of the correlation analysis which shows a statistically significant correlation between these three ratios. Similarly, restaurant segment also is significantly different in its ability to use their assets than amusement and recreational services segment. Inventory turnover ratio of the amusement and recreational services segment is significantly higher than for the restaurant segment (MD=-258.467, $p = .000$). However, restaurants have higher total asset turnover ratio (MD=.614, $p = .000$) and shorter average collection period (MD=-16.088, $p = .000$) than amusement and recreational services. Total assets turnover ratio and average collection period are in favor of airline companies compared with

hotels and motels (MD=-.702 and 17.971, $p = .000$ and for both ratios respectively).

Restaurants have lower total assets turnover ratio (MD=.070, $p = .000$) but shorter average collection period (MD=-14.78, $p = .000$) than airline companies.

Both ratios of profitability, net profit margin and ROA, are significantly higher for hotels and motels segment than for amusement and recreational services segment (MD=11.313 and 9.77, $p = .013$ and $.008$, respectively). Amusement and recreational services segment achieves significantly lower profitability ratios than airline segment as measured by both net profit margin and ROA (MD=-10.546 and -11.075, $p = .017$ and $.001$ respectively). The correlation coefficient obtained between these two ratios is statistically significant ($r = .379$, $p = .001$), which means that they are similar in measuring the profitability. ROA is higher for restaurant segment than for amusement and recreational services segment (MD=7.986, $p = .023$). Finally, the total debt to total assets is significantly higher for the hotel and motels segment than for restaurant segment (MD=11.001, $p = .000$).

Summary and Suggestions for Future Research

This study has compared key financial ratios of four segments of the hospitality industry. These segments are hotels and motels, restaurant, amusement and recreational services, and airline companies. Both types of ratio analysis were performed. Trend analysis of the financial ratios indicated that the ratios measuring profitability (namely, net profit margin, ROA, and ROE) are the lowest for the amusement and recreational services segment compared with the other three segments. However, companies in each of these segments have varied levels in terms of these ratios. Except

for the amusement and recreational services segment, other hospitality industry segments achieved steady levels of liquidity over the five-year period as measured by the current and quick ratios.

No consistent pattern was realized in terms of the financial ratios measuring the capital structure of the hospitality segments. The four segments have shown different pattern of total debt to total assets ratio, total debt to total equity, and times interest earned from 1997 to 2001. Investigating the trends of these ratios for all segments lead us to conclude that the external environment in which the companies exist has severely affected how these companies finance their operations. Capital structure mix varies over years for all segments without a recognizable pattern. This is an interesting finding. In general, capital structure is known to be very stable over time. It may reflects the increased volatility of hospitality industry due to unpredictable external environment for the past four to five years.

Ratios measuring the asset management indicated that, in general, restaurants are managing their assets more effectively than most of the other segments, as measured by the inventory turnover, total assets turnover, and average collection period. Finally, the results indicated that restaurants have the steadiest trend in terms of market value as measured by both price to earnings and market to book ratios. More volatile trends are depicted for the other three segments over the time period of this study.

Cross-sectional analysis results indicated that eight out of the thirteen financial ratios employed in the study are statistically different between segments. Tukey test indicated that the airline segment has higher liquidity levels than restaurant segment. Airline companies may need high liquidity to prevent bankruptcy or financial crisis.

Creditors may request minimum level of liquidity that may be higher than other hospitality segments due to its high risk. Differences in both current and quick ratios were statistically significant between these two segments. Generally, hotels and motels segment seems to have better ability to manage its assets than amusement and recreational services segment as measured by the inventory turnover, total assets turnover, and average collection period. Compared with the airline segment, restaurant segment has better average collection period, but lower total asset turnover.

Return on assets and net profit margin, as measures of profitability, are significantly higher for hotels and motels, and airline segment than for amusement and recreational services segment. Restaurant segment is significantly better than amusement and recreational services segment in terms of ROA.

The results obtained indicate a need for more detailed investigations of financial ratio analysis in the hospitality industry. Future research is encouraged to examine the circumstances that generated the results of each segment. Future research is also suggested to make a comparison between financial ratio measures of the segments before and after a major environmental event. Such research will provide valuable information on how the financial characteristics of each segment change and are affected by common environmental events. Employing ratios derived from the Statement of Cash Flows to complement this set of financial ratios represent another future research avenue.

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Table 1
A review summary of the related literature for financial ratios

Ratio	Theoretical Studies	Empirical Studies
<i>Profitability (Performance)</i>		
Net Profit Margin	Gardiner (1995) Rosplock (2000) Taylor (1989)	Singh & Schmidgal (2002) Li, Liu, Liu & Whitmore (2001) Melkote, Matsumoto, & Keishiro (1993)
Return on assets	Gardiner,(1995) Damitio, Deninngton, & Schmidgall, .R.(1995) Author Unknown (1993)	Rushinek & Rushinek (1995) Voulgaris, Doumpos & Zopounidis (2000)
Return on Equity	Hitchings (1999) Kristy (1994) Yallapragada , & Breaux (1989)	Thomas & Evanson (1987) Horrigan (1966)

<i>Liquidity (Financial Flexibility)</i>		
The current ratio	Kristy (1994) Damitio, Deninnington, & Schmidgall (1995)	Zelter & Stanko (1997) Melkote, Matsumoto & Keishiro (1993) Horrigan (1966)
The quick ratio	Kristy (1994) Miller (1993) Rosplock (2000)	Hsieh & Wang (2001) Melkote, Matsumoto & Keishiro (1993) Voulgaris Doumpos & Zopounidis, (2000)
<i>Capital Structure (Leverage)</i>		
Debt to total assets	Gardiner (1995) Hitchings (1999) Lee, Finnerty & Norton (1997)	Rushinek & Rushinek (1995) Hsieh & Wang (2001) Melkote, Matsumoto & Keishiro (1993)
Debt to equity	Hitchings (1999) Rosplock (2000) Swieca (1988)	Singh & Schmidgal (2002) Falk & Heints (1975) Voulgaris , Doumpos & Zopounidis, (2000)
Times interest earned	Rosplock (2000) Lee, Finnerty & Norton (1997)	Hsieh & Wang (2001) Zelter & Stanko (1997) Melkote , Matsumoto & Keishiro (1993) Horrigan (1966)
<i>Asset Management (Activity ,Operating efficiency)</i>		
Average collection period	Damitio, Deninnington & Schmidgall (1995) Yallapragada , & Breaux (1989) Swieca (1988)	Thomas & Evanson (1987) Zelter & Stanko, B.(1997)
Inventory turnover	Rosplock (2000) Swieca (1988) Taylor (1989)	Rushinek & Rushinek (1995) Thomas & Evanson (1987) Singh & Schmidgal (2002)
Total asset turnover	Lawder (1989) Yallapragada , & Breaux (1989) Lee, Finnerty & Norton (1997)	Li, Liu, Liu, & Whitmore (2001) O'Connor (1973)
<i>Market value</i>		
Price-to-earnings ratio	Gardiner (1995) Hilton, Maher & Selto (2000) Lee, Finnerty & Norton (1997)	Singh & Schmidgal (2002) O'Connor (1973) Gunduz & Tatoglu (2003)
Market to book value	Dorfman (1996) Lee, Finnerty & Norton (1997)	Gunduz & Tatoglu (2003) Block (1995) Jensen , Johnson & Mercer (1997)

Table 2
Financial ratios used in the study

Financial Category	Ratio	S&P's Code	Current Study Code
<i>Profitability (Performance)</i>	<i>Net profit margin</i>	<i>NPM</i>	<i>NPM</i>
	<i>Return on assets</i>	<i>ROA</i>	<i>ROA</i>
	<i>Return on equity</i>	<i>ROE</i>	<i>ROE</i>
<i>Liquidity (Financial Flexibility)</i>	<i>The current ratio</i>	<i>CR</i>	<i>CURRENT</i>
	<i>The quick ratio</i>	<i>QR</i>	<i>QUICK</i>

<i>Capital Structure (Leverage)</i>	<i>Debt to total assets</i>	<i>DAT</i>	<i>TD/TA</i>
	<i>Debt to equity</i>	<i>DTEQ</i>	<i>TD/TE</i>
	<i>Times interest earned</i>	-----	<i>TIE</i>
<i>Asset Management (Activity, Operating Efficiency)</i>	<i>Average collection period</i>	-----	<i>ACP</i>
	<i>Inventory turnover</i>	<i>INVX</i>	<i>IT</i>
	<i>Total asset turnover</i>	<i>ATT</i>	<i>TAT</i>
<i>Market Value</i>	<i>Price-to-book ratio</i>	<i>PE</i>	<i>P/E</i>
	<i>Market to book value</i>	<i>MKBK</i>	<i>PTB</i>

Table 3
Number of observations analyzed for each financial ratio for the four industry segments

Segment Ratio	Hotels & Motels	Restaurants	Amusement & Recreational	Airlines	Total
<i>Net profit margin</i>	176	527	49	177	929
<i>Return on assets</i>	176	537	53	176	942

<i>Return on equity</i>	158	437	39	154	788
<i>The current ratio</i>	150	539	53	176	918
<i>The quick ratio</i>	153	539	53	175	920
<i>Debt to total assets</i>	175	537	53	176	941
<i>Debt to equity</i>	175	538	53	176	942
<i>Times interest earned</i>	170	503	40	176	889
<i>Average collection period</i>	159	484	48	168	859
<i>Inventory turnover</i>	110	503	36	166	815
<i>Total asset turnover</i>	165	516	52	170	903
<i>Price-to-book ratio</i>	135	449	46	144	774
<i>Market to book value</i>	138	461	49	135	783

Table 4
Univariate results for the financial ratios

Financial Ratio	Mean and Std. Deviation*				F- value	Sig. of F
	Hotels & Motels	Restaurants	Recreational & Amusement.	Airlines		
NPM	3.501 (14.816)	-.648 (16.411)	-7.812 (18.426)	2.735 (8.184)	4.574	.004**
CURRENT	1.055 (.973)	.833 (.723)	1.091 (1.084)	1.219 (.815)	7.168	.000**

IT	49.733 (33.696)	64.120 (38.795)	322.587 (897.009)	47.264 (36.506)	15.016	.000**
PTB	1.645 (1.459)	1.319 (8.134)	1.202 (1.162)	1.877 (9.353)	.165	.920
P/E	15.466 (164.332)	8.630 (35.617)	-20.078 (68.053)	16.446 (55.610)	1.675	.171
QUICK	.863 (.966)	.515 (.613)	.665 (.690)	.947 (.755)	12.728	.000**
ROA	1.744 (6.484)	-.039 (14.189)	-8.025 (15.858)	3.050 (8.035)	5.316	.001**
ROE	-50.962 (455.670)	-33.657 (330.615)	-44.857 (101.078)	-63.070 (627.983)	.145	.933
TAT	.625 (.445)	1.700 (.627)	1.083 (.873)	1.327 (.691)	61.548	.000**
TD/TA	39.742 (21.747)	28.734 (18.048)	36.696 (28.971)	32.678 (19.761)	7.144	.000**
TD/TE	633.383 (1880.989)	444.468 (4806.029)	268.620 (468.938)	1093.802 (8698.291)	.406	.748
TIE	2.300 (3.225)	16.875 (114.340)	-8.839 (23.934)	25.511 (98.745)	1.202	.308
ACP	41.334 (36.302)	8.583 (12.931)	24.671 (14.861)	23.363 (12.877)	73.584	.000**
Multivariate <i>F</i> statistics:					11.464	.000**

* The figures in parentheses are the standard deviation

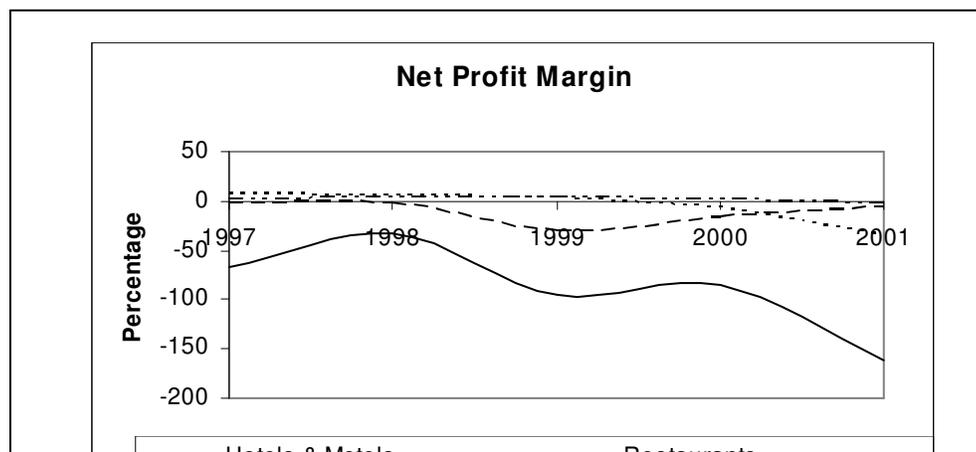
**Significant at $\alpha = .05$

Table 5
Tukey test results for significant differences of financial ratios among the
hospitality industry segments

Category	Financial Ratio	Significantly Different Segments	Mean Difference	Sig.
Profitability	NPM	Hotels& Motels, Amusement& Recreational	11.313	.013
		Amusement& Recreational, Airlines	-10.546	.017
	ROA	Hotels& Motels, Restaurants	9.770	.008
		Restaurants, Amusement & Recreational	7.986	.023
		Amusement and Recreational , Airlines	-11.075	.001

Liquidity	CURRENT	Restaurants, Airlines	-0.386	.000
	QUICK	Hotels & Motels , Restaurants Restaurants , Airlines	.347 -0.432	.001 .000
Asset Management	IT	Hotels& Motels, Amusement& Recreational	-272.854	.000
		Restaurants, Amusement& Recreational	-258.467	.000
		Amusement& Recreational, Airlines	275.323	.000
	TAT	Hotels& Motels, Restaurants	-1.072	.000
		Hotels& Motels, Amusement & Recreational	-.458	.019
		Hotels& Motels, Airlines	-.702	.000
		Restaurants, Amusement & Recreational	.614	.000
		Restaurants , Airlines	.070	.000
	ACP	Hotels& Motels, Restaurants	32.751	.000
		Hotels& Motels, Amusement & Recreational	16.663	.001
Hotels& Motels , Airlines		17.971	.000	
Restaurants, Amusement & Recreational		-16.088	.000	
Restaurants , Airlines		-14.780	.000	
Capital Structure	TD/TA	Hotels& Motels, Restaurants	1.001	.000

Figure 1
Profitability ratios for different segments of the hospitality industry



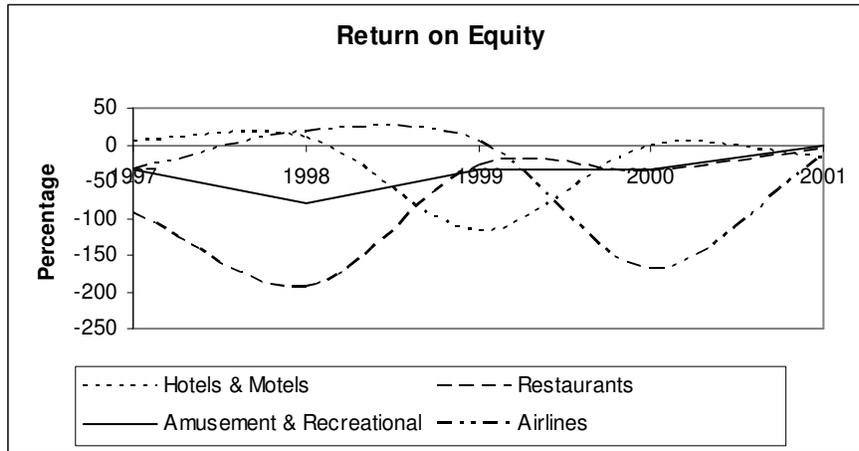
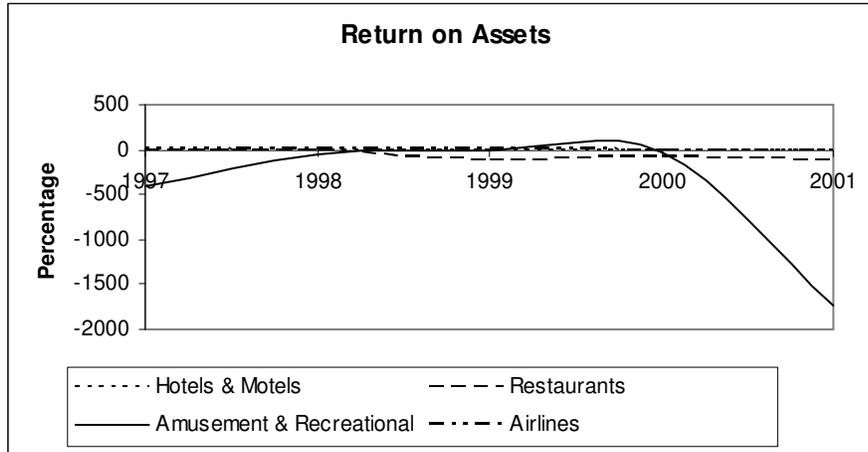
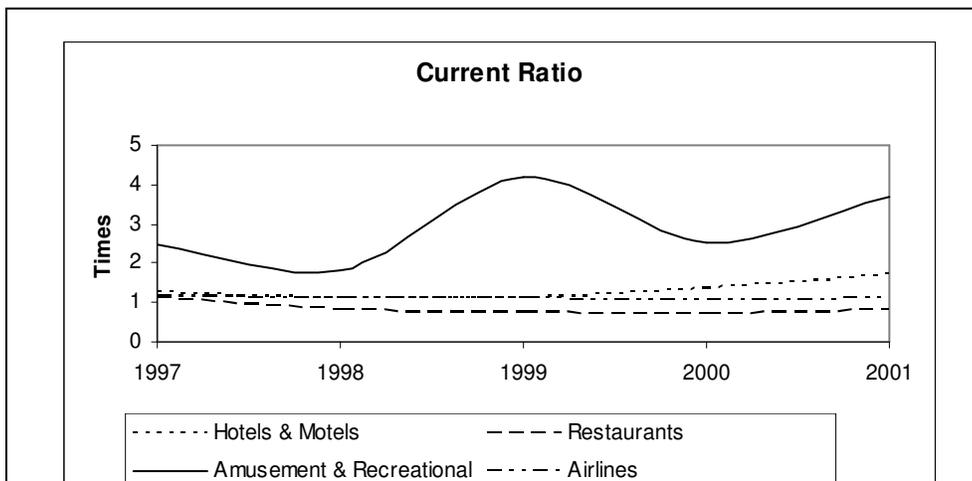


Figure 2
Liquidity ratios for different segments of the hospitality industry



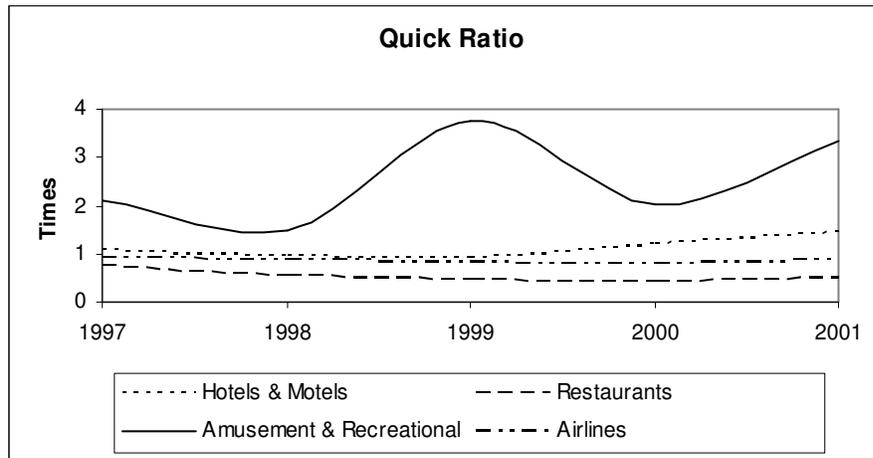
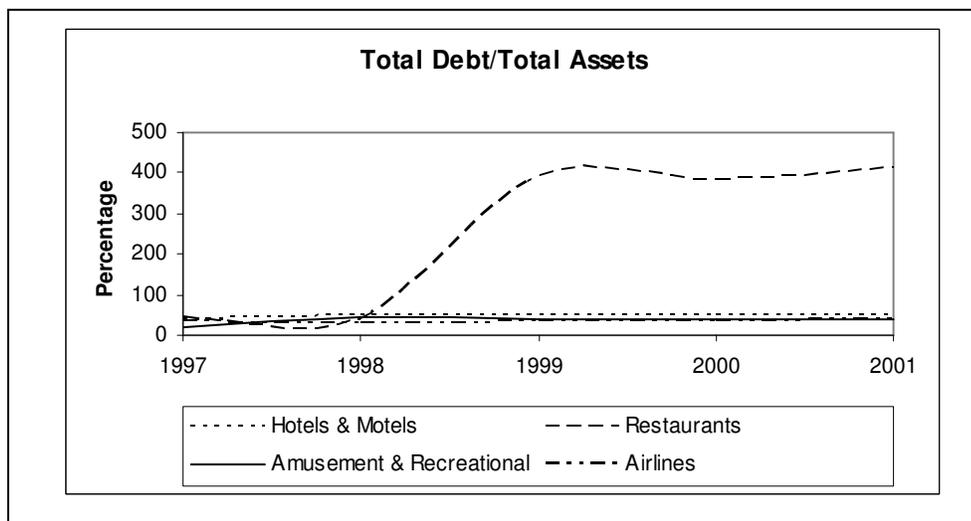


Figure 3
Capital structure ratios for different segments of the hospitality industry



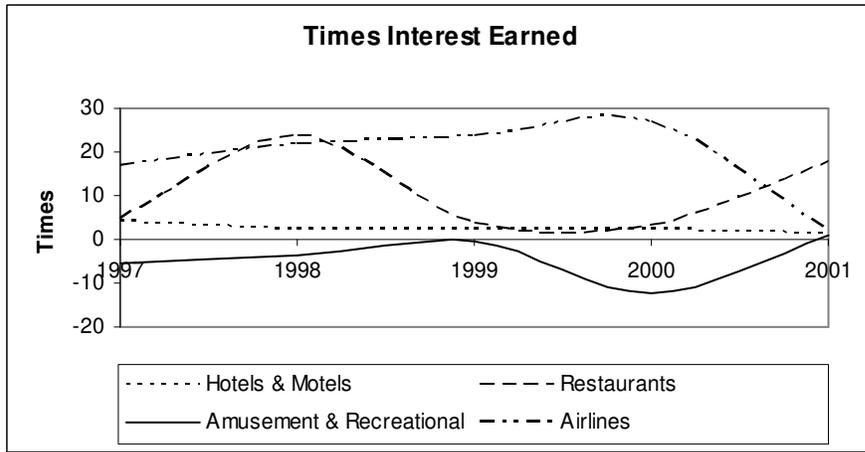
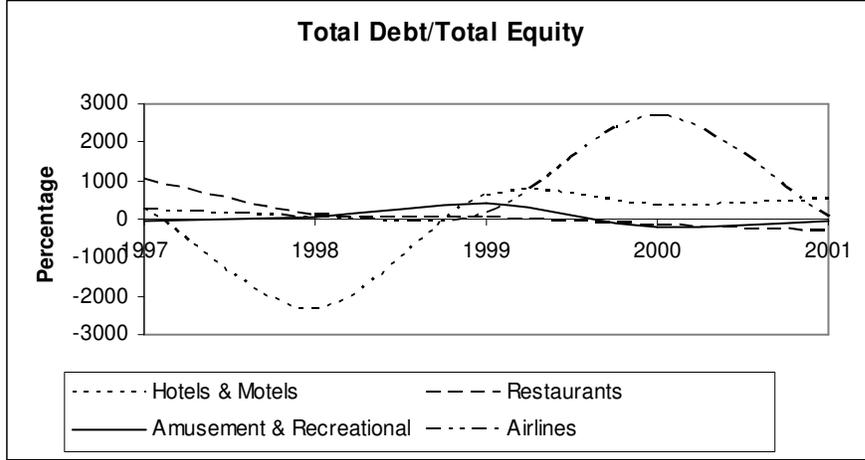
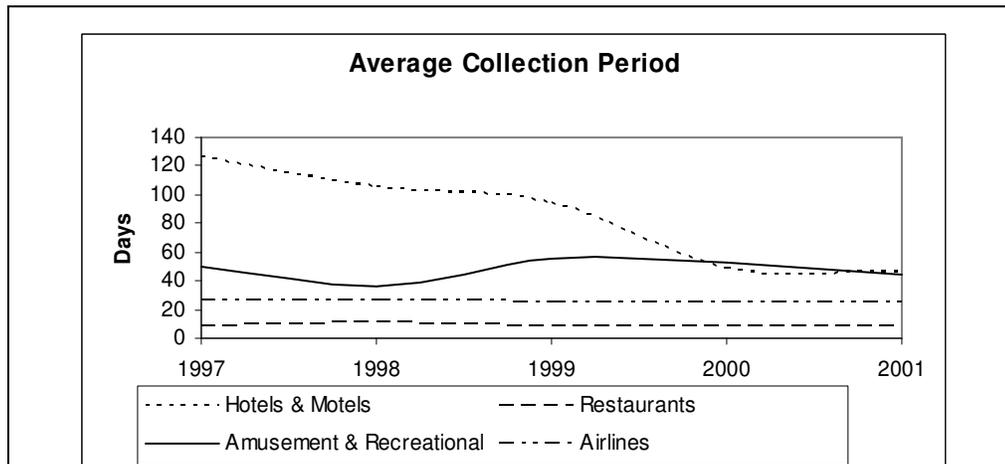


Figure 4
Asset management ratios for different segments of the hospitality industry



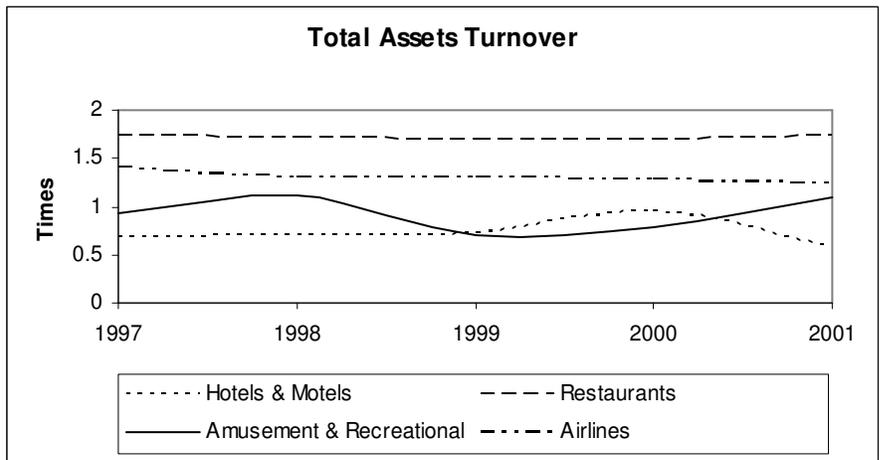
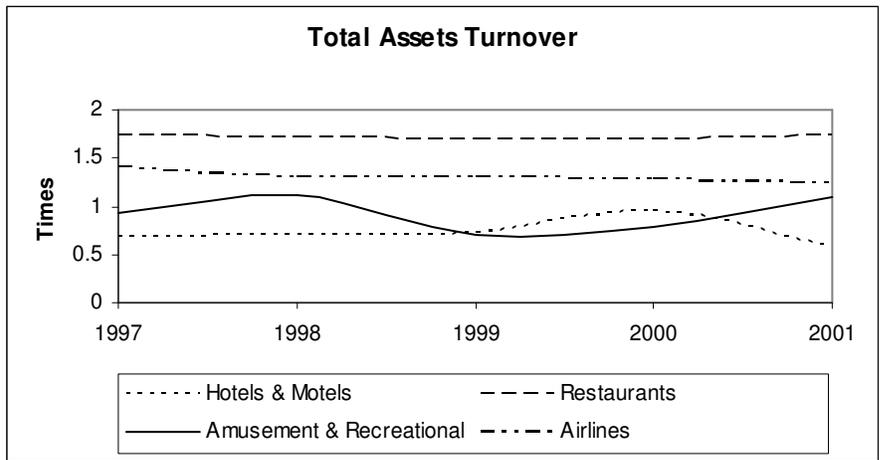


Figure 5
Market value ratios for different segments of the hospitality industry

