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Does Financial Performance Depend on Hotel Size? Analysis of the Financial Profile of the U.S. Lodging Industry

A.J. Singh
Michigan State University, shbsirc@msu.edu

Raymond S. Schmidgall
Michigan State University, shbsirc@msu.edu

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This research presents a financial profile of the U.S. Lodging Industry based on an analysis of 2,091 financial statements (fiscal year 2011) for individual hotels ranging in asset size of $500 thousand to $250 million. The study analyzes summary results of the financial position and profitability of hotels based on a common size analysis of Balance Sheets and Income Statements. Furthermore, the study analyzes 10 key performance benchmarks as measured by Liquidity, Solvency and Operating Ratios. The results of the study show a divergence in the hotel industry's financial performance based on the size of the hotel and by upper, median and lower quartiles of the study sample.

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INTRODUCTION AND STUDY CONTEXT

The three major financial statements (balance sheet, income statement and statement of cash flow) issued by lodging enterprises provide a considerable amount of financial and operating data. Management, being an internal stakeholder, depends upon this information to make tactical and strategic business-related decisions. External stakeholders, such as lenders and investors, rely upon the information for financing decisions. A review of the current profile of U.S. hotels at the property level will provide external stakeholders with an understanding of the risks and returns associated with investing in hotels. While financial statements are already available for publicly held lodging companies, they are not readily available for private hotel companies, especially at the individual hotel level. An analysis of the current financial profile of U.S. hotels will allow external stakeholders to assess the aggregate financial performance of the industry.

Literature Review

The early direction of research on financial ratios focused on the classification and reduction of a large number of ratios into a smaller subset. Pinches et al. used factor analysis to create dimensions of information in financial ratios. Pinches, Eubank, Milgro, and Caruthers (1975) and Chen and Shimerda (1981) summarized the results of past studies and highlighted seven groups of ratios: 1) return on investment, 2) financial leverage, 3) capital turnover, 4) short term liquidity, 5) cash position, 6) inventory turnover and 7) receivables turnover.

Chen and Shimerda (1981). Later, Schmidgall highlighted five groups of ratios in his Managerial Accounting for the Hospitality Industry text. Some research studies in the club and lodging segments of the hospitality industry have used his classifications, including DeFranco and Schmidgall (2009) and Singh and Schmidgall (2001).

A stream of research examining financial ratios from a behavioral perspective has studied the usefulness of ratio categories by various user groups. These studies, which examine the differences in the use of financial rations have examined usefulness either within an organization, between user groups, within an industry, or inter-industry. . In 1988 and 1989, two studies identified ratios considered most useful by financial executives in the lodging industry and analyzed differences in the importance of ratios between various user groups such as corporate executives, bankers, owners, and lodging general managers. The studies concluded that there were differences between these user groups. General managers found operating and activity ratios more useful than other user groups; owners considered profitability ratios more useful; corporate executives found liquidity ratios more useful than other user groups; bankers ranked solvency ratios higher than others; and financial executives ranked profitability, activity and operating ratios as most important. Schmidgall (1988, 1989).

Studies have covered various segments of the hospitality industry. Singh and Schmidgall (2001) surveyed lodging property-level financial executives to determine the importance of various financial ratios and the frequency of use. Operating, activity, and profitability ratios were the most used monitoring ratios. Youn and Gu (2010) studied non-gaming hotels and casino hotels to determine the impact of recession on financial performance. Their findings indicate that both groups experienced deterioration in the five major aspects of their financials. Schmidgall and DeFranco (2010) studied the club segment of the hospitality industry and determined that the most profitable clubs had significantly better solvency, liquidity and profitability ratios than the less profitable clubs. Mandelbaum and Lerner (2008) analyzed the financial performance of hotel spa departments to provide benchmarks for spa department managers. In their 2005 study, Kim and Ayoun examined the trend within four sectors of the hospitality industry. Their research revealed eight out of thirteen financial ratios were statistically different across the four segments.

Financial ratios studies in other industries include Shivaswamy, Hoban, and Matsumoto, who surveyed commercial loan officers and identified 19 key ratios they considered important when analyzing manufacturing firms and 14 key ratios for retail firms. Shivaswamy, Hoban, and Matsumoto (1993). Gibson studied the usefulness of financial ratios and identified comparative usefulness of ratios for accountants, bankers, and financial analysts. Gibson (1983,1985,1987).

Another set of lodging industry and general business studies have focused primarily on the application of ratio analysis. These application studies examined themes related to definition, explanation, interpretation, performance measurement, and benchmarks used to evaluate ratios. The studies include

Temling's article on measuring profitability. Temling (1985). Schmidgall and Singh's practitioner oriented article interpreted and explained the use of key lodging industry ratios. Damitio, Dennington, and Schmidgall's article explained three methods of analyzing financial statements, with ratio analysis being a key tool.

Lee (2007) examined financial leverage trends of US lodging firms from 1980 to 2005. The results suggest the industry median leverage ratio is more valid than the mean leverage ratio as a proxy for the lodging industry during recessionary periods, but not during the expansion periods.

Damitio, Dennington, and Schmidgall (1995) and Phillips (1999) performed a comprehensive review of the performance measurement literature and proposed a more holistic measurement framework for the hotel industry, which would consider internal processes, environmental influences, and strategic orientation. Performance management studies have also examined non-financial performance measures. This stream of research has recently become popular due to the introduction of the balanced-scorecard approach of performance measurement. Pioneered by Robert Kaplan and David Norton (1996), the approach takes a balanced approach to measure performance including both financial and non-financial measures. Douglas (2000). Gardiner (1995) reviewed the key financial ratios and emphasized their use based on a business's need to evaluate liquidity, solvency, asset efficiency, profitability, gearing, and market valuation, and Kristy defined and explained 14 key ratios for a credit manager. Each of these ratios was discussed in the context of their function, standard for evaluation, and information revealed. Kristy (1994). Giacomino, and Mielke analyzed data from electronic, food, and chemical industries to establish benchmarks for cash flow ratios for companies operating within these industries. Giancomino, and Mielke (1993). Finally, lodging industry consultants such as Smith Travel Research, Pannell Kerr Forster, and Horwath International regularly survey the industry to establish operating and profitability ratio comparables.

A review of the literature on ratio analysis reveals an evolution from studies that focused on classification to those that examine the usefulness (behavioral studies) and application of ratios. As such, the more recent ratio studies have shifted their attention to questions of importance, interpretation, the role of non-financial measures, establishment of ratio benchmarks, and more holistic performance measures. There have been no studies to date that analyze the financial profile of individual hotels on the basis of hotel size. As such, this study fills a vital gap in the literature by providing a descriptive analysis for external stakeholders (primarily investors and lenders) on the risk and return profile of the U.S. Lodging Industry. This is an important contribution because the recent financial crisis of 2008 and 2009 has made providers of capital to the lodging industry cautious. The analysis of results will provide some level of transparency on important performance and risk measures for those who are considering providing debt or equity capital to hotels.

Study Objectives

At its outset, this study had three primary objectives:

1. What are the differences in the financial position of U.S. Hotels based on Asset Size?
2. What are the differences in the operating performance of U.S. Hotels based on Asset Size?
3. What are the differences in the risk and return profile of U.S. Hotels based Asset Size?

Methodology

For the study, secondary data was used based on the annual statement studies published by Robert Morris Associates (RMA) for 2011. The database, which represents 762 industries, has been used extensively by credit risk professionals for the past 92 years and is considered an industry standard for financial data. The data comes directly from the original source (individual hotels for our study) as categorized under the North American Industry Classification System (NAICS-72110). The data is presented in the Common Size Format for Balance Sheet and Income Statement and the computation is based on a percentage of total assets and sales, respectively. The data also includes nineteen of the most commonly used ratios to include liquidity, coverage, leverage and operating.

For the current study the total sample size consisted of 2,091 hotel annual financial statements (Fiscal year, April 1-2010 to March 31-2011) based on a hotel size distribution as noted in Table 1 below.

Table 1
Distribution of Study Sample Based on Asset Size

Hotel Asset Size	Sample Size	Percentage
$0-500 Thousand	222	11%
$500- 2.0 Million	503	24%
$2-10.0 Million	1006	48%
$10-50 Million	283	14%
$50-100 Million	45	2.0%
$100-250 Million	32	1.0%
Total	2091	100%

The database has the benefit of being able to analyze the financial profile of an industry segment using proprietary data from private companies not normally accessible. However, it is important to understand the following limitations of the data set.

1. The data is not random but based on submission by RMA member banks that voluntarily submit raw data for companies in their loan portfolio.
2. Some samples may be small based on the total number of hotel firms for the industry. As such, they may not be representative of the entire industry.
3. Extreme statements could be part of the data set, which may disproportionately skew the industry composite.

Categories and Definitions of Financial Ratios for Current Study

The current study analyzed the current financial profile of the U.S. Lodging Industry based on an analysis of 10 commonly used financial ratios categorized as Liquidity, Solvency and Operating Ratios as defined below and outlined in Table 2

1. Liquidity Ratios: Ability of the company to meet short-term obligations.
2. Solvency Ratios: Ability of the company to pay long-term financial obligations.
3. Operating Ratios: Management's efficiency with regard to its operation.

Table 2
Categories and Definitions of Financial Ratios

CATEGORIES OF RATIOS	CALCULATION OF RATIO
LIQUIDITY RATIOS	
Current ratio	Current Assets/Current Liabilities
Quick ratio	Cash, Marketable Securities, Notes Receivable and Accounts Receivable/Current Liabilities
Sales to Working Capital	Sales/Net Working Capital (NetWorking Capital =Current Assets minus Current Liabilities)
SOLVENCY RATIOS	
Number of times interest earned	Earnings before Interest and Taxes/Interest Expense
Fixed Assets to Net Worth	Net Fixed Assets/Tangible Net Worth
Debt to Net Worth	Total Liabilities/Tangible Net Worth
OPERATING RATIOS	
Return on Equity	Profit before Taxes/Tangible Net Worth
Return on Assets	Profit before Taxes/Total Assets
Fixed Asset Turnover	Net Sales/Total Fixed Assets
Total Asset Turnover	Net Sales/Total Assets

Analysis of Results

Balance Sheet Analysis

The summary results presented in Table 3 provide the most recent financial position of 2,091 hotels in the United States, of which over 80 percent had Assets less than $10 million. When analyzing the balance sheet data based on asset size several differences are apparent in the Asset, Liability and Equity profile of these hotels.

Typically, cash and cash equivalents include cash in house banks, cash in checking and savings accounts, certificates of deposits, and marketable securities at market value. It is fiscally prudent to keep idle cash at a minimum level and invest the rest in short term money market accounts or high grade commercial paper. The average amount of cash and cash equivalents for U.S hotels is 8.5 percent of total assets. Hotels with assets from $2 million to $100 million seem to have a similar profile, with about 6 percent of their assets very liquid. However, the smallest hotels tend to have a much larger (28%) percentages of their assets in cash and cash equivalents.

Trade receivables, which may be interpreted as mainly accounts receivable, represent a very small percentage of total assets for the hotel industry (about 2 percent). As in the case of cash, the percentage of variation in accounts receivable between different size hotels is also narrow (1.4 to 3.5 percent). Very small hotels (assets less than $500,000) have about 6 percent of their assets tied up in receivables. This may partially explain their need to have a higher percentage of cash on hand.

Not surprisingly, inventories are not a significant investment, with an overall average of less than 1 percent for the industry. Even in the largest hotels, with assets over $100 million, they represent only 1.7 percent of the total assets. However, from a working capital management perspective one cannot discount its importance as it represents $1.7 million to $4.2 million in inventory valuation (or cash invested) for the largest hotels.

When analyzing the total current assets, it is noteworthy to observe that the 1,006 hotels with assets from $2-10 million had the lowest percentage of current assets to total assets (8.6%) as compared to the largest hotels, which had 16 percent of their total assets tied up in current asset accounts.

Being a capital intensive industry, fixed assets, which mainly include property, equipment and land, represents the largest percentage of total assets ranging from 43 percent of total assets for the smallest hotels to an industry average of about 75 percent. Some anomalies appear in the sample where hotels from $500 thousand to $10 million have a slightly higher percentage of fixed assets than the larger (with assets in excess of $10 million) hotels. However this could be a result of newer properties in the sample with less accumulated depreciation. The smallest group of hotels (with assets less than $500,000) have fixed assets equal to only 43 percent of their total assets.

Current liabilities include short term notes payable, current maturities of long term debt, trade payables, income tax payable and other current liabilities such as accrued expenses, bank overdrafts, and advance deposits. For the U.S lodging industry, the average current liabilities were 19 percent of the total liabilities and net worth. The largest percentage of current liabilities was carried by the smallest hotels at 57.6 percent, with the lowest percentage for hotels with assets from $2-10 million at 12.2 percent. Notes payable, current maturity of long term debt, and trade payables were 2.7, 3.6 and 2.4 percent respectively of the total.

On average, the industry had long term debt of about 66 percent with the smallest hotels at only about 28 percent long term debt. The largest hotels (assets greater than $50 million) carried about 50 percent long term debt and medium size hotels about 60-70 percent long term debt. Based on the most recent financial results as presented in Table 3, the smallest hotels had a negative equity position of -5.3 percent while the larger (assets greater than $50 million) hotels showed equity of about 23 percent. The negative equity position for the smallest hotels (sample of 222 hotels) is due to historical operating losses exceeding contributed equity.

Income Statement Analysis

A common size analysis the 2,091 most recent income statements in the RMA data base represents a tabulation of revenues and expenses of individual hotels for the fiscal year April 1, 2010 to March 31, 2011 (Table 4). The combined statements are based on the financial statements provided to commercial banks by individual hotel companies as part of their loan application process. As noted in Table 3, it does not appear that these hotels have food and beverage facilities as part of their operations as the gross profit is the same as net sales. The hotels across all asset sizes display very high operating expenses with an average of 86 percent. As a result, the average operating profit is only 14 percent. However, after deducting interest and other fixed charges such as property taxes and insurance (11.2%), the profit before taxes for this hotel sample was only about 3%. For the sample of hotels analyzed in this database, the largest hotels had losses while the smaller hotels had very marginal profits before taxes in the 3-4 percent range.

Table 3
Common Size Analysis of U.S. Hotels Balance Sheets Based on Asset Size

2011

ASSETS	0-500 M	500-2 MM	2-10 MM	10-50 MM	50-100 MM	100-250 MM	All
Cash & Equivalents	27.7%	7.8%	5.6%	5.8%	5.7%	8.4%	8.5%
Trade Receivables - (net)	6.3	1.8	1.4	2.0	1.8	3.5	2.1
Inventory	1.7	.5	.4	1.1	.7	1.7	.7
All Other Current Assets	2.2	1.5	1.3	1.9	3.7	2.6	1.6
Total Current Assets	37.8	11.5	8.6	10.9	11.9	16.1	12.9
Fixed Assets (net)	43.0	78.0	81.7	77.6	71.8	76.5	75.9
Intangibles (net)	6.6	3.6	3.3	3.7	3.8	3.0	3.8
All Other Non-Current Assets	12.6	6.8	6.4	7.8	12.4	4.4	7.5
Total Assets	100.0	100.0	100.0	100.0	100.0	100.0	100.0
LIABILITIES							
Notes Payable-Short Term	9.5	2.0	1.4	2.9	3.5	2.7	2.7
Cur. Mat.-L/T/D	2.2	4.5	3.2	3.7	3.6	8.8	3.6
Trade Payables	9.1	1.9	1.3	1.8	2.1	3.5	2.4
Income Taxes Payable	.3	.0	.0	.1	.1	.1	.1
All Other Current Liabilities	36.5	8.8	6.2	7.5	9.6	7.0	10.3
Total Current Liabilities	57.6	17.3	12.2	16.1	18.8	22.2	19.1
Long Term Debt	28.5	71.1	74.1	60.4	52.7	51.2	65.9
Deferred Taxes	.0	.0	.0	.3	.4	.3	.1
All Other Non-Current Liabilities	19.2	5.7	4.8	6.7	4.2	3.5	6.8
Net Worth	-5.3	5.9	8.8	16.5	23.9	22.8	8.2
Total Liabilities & Net Worth	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Sample Size	222	503	1,006	283	45	32	2,091

Table 4
Common Size Analysis of U.S. Hotels Income Statements Based on Asset Size

2011

INCOME DATA	0-500 M	500-2 MM	2-10 MM	10-50 MM	50-100 MM	100-250 MM	All
Net Sales	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Gross Profit	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Operating Expenses	94.3	85.6	83.5	87.7	92.7	93.5	86.1
Operating Profit	5.7	14.4	16.5	12.3	7.3	6.5	13.9
All Other Expenses (net)	2.7	10.4	13.6	11.6	10.0	7.2	11.2
Profit Before Taxes	3.0	4.0	2.9	.8	-2.7	-.7	2.7
Sample Size	222	503	1006	283	45	32	2091

Analysis of Ratios

Tables 5 to 7 present 10 benchmark ratios commonly used to analyze the financial performance of the hotel industry categorized as Liquidity, Solvency and Operating ratios. Each ratio presented has been divided into four equal groups or quartiles. The quartiles are divided into upper quartile (top 25 percent); median (middle 50 percent) ,which represents the mid-point in the array of scores; and the lower quartile representing the bottom 25 percent. When interpreted vertically, the quartiles indicate the top quartile as being the strongest ratios and the bottom quartile as the weakest ratios. The ratios are also categorized as either linear or non-linear ratios. Ratios for which a higher number represents a stronger ratio and a lower number represents a weaker ratio are linear. An array that deviates from the ascending or true descending when its values change from positive to negative (low to high positive, followed by high to low negative) is nonlinear. For example, sales to working capital are a nonlinear ratio in that when the sales/working capital ratio is positive, the top quartile is represented by the lowest positive ratio. However, if the ratio is negative, the top quartile will be represented by the highest negative ratio. Other nonlinear ratios in the sample are fixed assets to net worth and debt to net worth ratios.

Analysis of Liquidity Ratios

Liquidity ratios gauge a hotel's ability to meet its current obligations such as payroll, accounts payable, short term debt and other payments due within one year. As such, the measurements of specific ratios such as current, quick, and net sales to working capital provide an operation with information on its liquidity position. Table 5 presents these ratios for the U.S. hotel industry based on the RMA sample and divided by asset classification.

First, the current ratio, which compares the hotel's current assets to their current liability, provides a rough indication of the hotel's ability to pay off its short term obligations if needed. In general, the higher the current ratio, the greater the buffer or cushion between the current obligations and the hotel's ability to pay them. While a stronger ratio shows by what amount the current assets exceed current liabilities, the quality of current assets is an important factor in analyzing this ratio. Furthermore, depending on who is analyzing the ratio, the interpretation may vary. In general, lenders prefer hotels to have higher current ratios while owners prefer to have a lower ratio. Sometimes, a high current ratio may not necessarily be good if it is primarily because of higher receivables (which could mean future collection problems). Based on the management's assessment of the current ratio, the ratio can be increased by pursuing different strategies such as securing long term loans, non-current asset sales, or new equity infusion. Similar to the current ratio, the quick ratio represents a stricter measure of liquidity as it selects only the most liquid current assets such as cash, cash equivalents, notes receivable and accounts receivable and compares them to current liabilities. This gives lenders and management the comfort level to see the hotel's true liquidity position if obligations have to be paid off quickly.

Based on an analysis of Table 5, it is clear that the top 25 percent of the hotels have strong current and quick ratios at 1.9 and 1.6, respectively. In this quartile the most liquid are the smallest hotels at over 2.0 while the larger hotels (assets greater than $50 million) have a quick ratio closer to 1.0. The picture begins to change when reviewing the liquidity position of the median in the sample, where the average for all hotels is .7 for current ratios and .6 for quick ratios. The bottom quartile is the weakest with a very low liquidity position of .20 as measured both by current and quick ratios.

Working capital (current assets minus current liabilities) represents the ability of the hotel to fund its current operations. However, when converting it to a ratio by comparing working capital to sales, one can measure the efficiency of the use of working capital. As a nonlinear ratio its interpretation is not intuitive. *The lowest possible positive ratio is the best and the lowest negative is the worst.* Typically when you have a small positive ratio the working capital is positive (more current assets to liabilities). If you have a small negative sale to working capital ratio it means that you have a large negative working capital (more current liabilities to current assets).

When analyzing the ratio in Table 5, it is clear that some of the smaller hotels tend to have very weak sales to working capital ratios. In the upper quartile the average is about $15 in sales for each $1.00 in working capital. However, for the smallest hotels, the ratio is $21 to $1.00 in working capital, which shows a higher trading multiple as compared to working capital and is a more vulnerable position from a creditor perspective. Interestingly, the median in the sample shows that smaller hotels have the best sales to working capital ratio as compared to larger hotels. The average for all hotels in the median level is -

30.3, with -5.8 for the lower quartile. This indicates that hotels at the lower quartile of the hotel sample have large negative working capital positions.

Table 5
Liquidity Ratios of U.S. Hotels Based on Asset Size: 2011

RATIOS	0-500 M	500-2 MM	2-10 MM	10-50 MM	50-100 MM	100-250 MM	All
Current – upper	2.6	1.9	1.9	1.8	1.6	1.6	1.9
Current – median	.9	.6	.8	.7	.7	.9	.7
Current – lower	.2	.2	.2	.3	.2	.4	.2
Quick – upper	2.4	1.6	1.6	1.3	1.1	1.2	1.6
Quick – median	.7	.5	.6	.5	.5	.7	.6
Quick – lower	.2	.2	.2	.2	.2	.3	.2
Sales / Working Capital – upper	21.3	17.8	13.9	11.0	8.4	15.8	15.2
Sales / Working Capital – median	-103.0	-24.8	-33.3	-19.7	-17.1	-86.5	-30.3
Sales / Working Capital – lower	-9.7	-5.6	-6.2	-4.1	-3.1	-4.7	-5.8
Sample Size	222	503	1,006	283	45	32	2,091

Analysis of Solvency Ratios

Solvency ratios measure the long term sustainability of a hotel organization. Typically this means an assessment of the firm's ability to pay its debts, the extent of debt financing compared to its total investment, or a relationship between debt and equity. High levels of leverage pose the possibility of bankruptcy in times of declining revenues and therefore present a risky profile of the company to investors and lenders. The solvency ratios analyzed in the RMA sample include the interest coverage ratio, fixed assets to net worth ratio, and debt to net worth ratios.

An analysis of the interest coverage ratios in table 6 indicates that the upper quartile has a strong coverage of 2.8 for the entire sample of hotels. This ranges from a high of 6.8 for the smallest hotels to 2.5 for the largest. The median in the sample also has a positive coverage ratio of 1.5. This is a good reflection on the performance of the hotel industry in 2011 and at the same time the fiscal responsibility of banks. At least for this sample it appears that lending institutions that reported this information did not over leverage their portfolios in most cases. The lower 25 percent of the loan portfolio have loans that could be at risk as the interest coverage ratio is only .6 and negative for some of the large assets.

The fixed assets to net worth ratio measures the extent to which the owner's capital (equity) has been invested in fixed assets (land, building and

equipment). A lower ratio indicates a proportionately smaller investment in fixed assets in relation to net worth and a better cushion for creditors in the case of liquidation. The sample indicates a fairly safe solvency profile for the upper quartile of hotels in the sample with a ratio of 2.5 and a narrow variation among hotels of different sizes. The median in the sample has a higher leverage of 8.8 while the weakest hotels in the sample actually have a negative net worth as the ratio is -8.2. It should be noted that the largest hotels in the lower quartile have a positive net worth but seem to be very highly leveraged with a ratio of 15.2.

Finally, the debt to net worth ratio (also known as the debt to equity ratio) shows the capital contributed by creditors as compared to owners' equity. A higher ratio indicates greater risk for the creditors, while a smaller ratio shows a safer position and better long term financial viability. From an owner's perspective, a higher debt to equity ratio has the potential to maximize returns and transfer investment risk to creditors. The data from the sample hotels indicates that the upper quartile of hotels has a debt to equity of 2.3, with a much smaller ratio (.6) for the smallest hotels. The highest debt to equity ratio for this quartile was for hotels with assets ranging from $2-10 million (3.3). The median debt to equity ratio for the sample was 10.5 but was mainly skewed by the sample of hotels for asset sizes of $500 thousand to $10 million (17.0 to 12.9 respectively). The weakest (potentially least solvent hotels) in the lower quartile had a negative net worth as noted in their negative debt to equity ratio.

Table 6
Solvency Ratios U.S Hotels Based on Asset Size: 2011

RATIOS	0-500 M	500-2 MM	2-10 MM	10-50 MM	50-100 MM	100-250 MM	All
EBIT / Interest Upper	6.8	3.0	2.5	2.7	2.7	2.5	2.8
EBIT / Interest - median	1.9	1.6	1.4	1.3	1.2	.9	1.5
EBIT / Interest - lower	.0	.7	.7	.5	.1	-.1	.6
Fixed Assets/ Worth - upper	.4	2.4	3.6	2.2	1.8	1.7	2.5
Fixed Assets/ Worth - median	2.3	14.3	11.7	6.6	3.4	3.5	8.8
Fixed Assets / Worth - lower	-1.6	-6.5	-8.8	-18.3	NM*	15.2	-8.2
Debt / Worth - upper	.6	1.9	3.3	2.0	1.2	1.2	2.3
Debt / Worth - median	4.3	17.0	12.9	7.6	2.9	3.9	10.5
Debt / Worth - lower	-2.9	-8.3	-10.9	-21.4	NM*	17.5	-10.0
Sample Size	222	503	1,006	283	45	32	2,091

* Not reported

Analysis of Operating Ratios

The operating ratios assess management's responsibility to optimize the assets invested and provide a satisfactory return to the owners. The ratios used to measure management performance in the RMA sample include return on equity, return on assets, fixed asset turnover and total asset turnover.

The return on equity measures profits before taxes to the overall investment made by the owner. As this ratio analyzes profits in conjunction with net worth (equity) a higher ratio does not necessarily mean higher profits but merely a higher return based on the amount invested by the owner. In the case of the upper quartile of hotels in the sample (Table 7), the average return on equity for hotels in the sample is 37.7 percent with the highest being the smallest hotels. The larger hotels had returns of about 12 percent with mid size hotels ranging from 24 to 32 percent returns in this quartile. Median returns for the sample of hotels were 9.6 percent with the lower quartiles providing negative returns.

Return on assets, the next ratio analyzed, measures the profitability of the hotel compared to its total assets (and therefore the effective management of all resources invested in the enterprise). In cases where the fixed assets are heavily depreciated the ratio may present distorted results. For the hotel sample analyzed, the average return on assets for the upper quartile was 6.3 percent, but only about 3-4 percent for the largest hotels. Compared to the assets invested, most hotels did not provide a good return on investments as the median was 1.3 percent (with the largest hotels providing negative returns). The lower quartile was negative across all asset sizes.

Finally, the fixed asset turnover and asset turnover ratios measures management's effectiveness in using its property and equipment (fixed assets) and total assets in generating revenues or driving the sales of the hotel. Generally, hotel firms that generate a higher proportion of sales to assets investment are viewed favorably by investors and lenders. The ratios for the sample of hotels analyzed are weak across all quartiles.

Table 7
Operating Ratios U.S. Hotels Based on Asset Size: 2011

RATIOS	0-500 M	500-2 MM	2-10 MM	10-50 MM	50-100 MM	100-250 MM	All
% Profit before Taxes / Tangible Net Worth - upper	120.0	47.0	31.7	24.1	11.7	11.7	37.7
% Profit before Taxes / Tangible Net Worth - median	29.2	13.0	10.4	3.3	3.5	-.8	9.6
% Profit before Taxes / Tangible Net Worth - lower	-3.1	-2.7	-5.5	-6.6	-12.2	-14.2	-5.2
% Profit before Taxes / Total Assets - upper	30.4	8.1	5.4	4.0	3.9	3.3	6.3
% Profit before Taxes / Total Assets - median	5.0	2.0	1.3	.3	-.5	-.7	1.3
% Profit before Taxes / Total Assets - lower	-7.0	-2.1	-2.2	-3.0	-3.8	-3.8	-2.5
Sales / Net Fixed Assets - upper	57.6	1.3	.7	.8	.9	1.0	1.1
Sales / Net Fixed Assets - median	13.5	.6	.5	.4	.5	.6	.5
Sales / Net Fixed Assets - lower	4.0	.4	.3	.3	.3	.4	.3
Sales / Total Assets - upper	8.0	.9	.5	.6	.6	.7	.8
Sales / Total Assets - median	4.1	.5	.4	.3	.5	.4	.4
Sales / Total Assets - lower	1.7	.3	.3	.2	.2	.3	.3
Sample Size	222	503	1,006	283	45	32	2,091

Conclusion and Implications of the Study

On the basis of the study sample analyzed for U.S. hotels, it does appear that differences exist in the financial position and operating performance of large versus small hotels. Furthermore, an analysis of liquidity, solvency and operating ratios for the industry revealed that in several cases the risk and return profile of the hotel industry varied based on asset size and quartiles for each hotel based on asset size. For the year analyzed (2011) the overall industry performance based on profitability, return on equity, and asset turnover was quite low. However, the industry as a whole generated adequate earnings to cover interest payments. With the exception of the lower quartiles, the industry's liquidity position was also satisfactory.

Results of the study point towards some salient implications for external financial stakeholders interested in understanding the hotel industry's current risk and return profile. This study will help them set some criteria for their lending and investment decisions. Furthermore, results of the study are also of value to

financial managers of hotels as they can benchmark their existing ratios with the computed results in the upper-median and lower quartiles of this study.

1. For lenders who make short term working capital loans to hotels, the study clearly reveals the low percentage of inventory and receivables maintained by hotels. As such, these will not serve as meaningful security for their short term loans. Lenders will most likely have to rely on the hotel's operating history and personal relationships as a surety on the repayment of these loans.

2. When making working capital loans to small hotels, lenders need to be cautious as small hotels also tend to carry the highest percentage of current liabilities and the lowest current ratios. Therefore, they may represent a repayment risk. However, across all size segments, hotels in the upper quartile have positive current ratios (1.6 to 2.6) and therefore represent a lower repayment risk.

3. From a solvency perspective, the hotel industry (based on this sample) appears to be prudently leveraged in 2011, with about 65 percent long term debt and strong interest coverage ratios for hotels in the upper and median quartiles.

4. From an investment return perspective, in 2011 there was a wide range of return on equity results. As such, management effectiveness and prudent use of leverage continue to be paramount value drivers for the industry. As a fixed asset intensive industry, the 2011 results of the total asset turnover ratio reflect the importance of driving revenue. With the exception of the smallest hotels, this ratio was less than 1 for all size segments.

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A.J. Singh, Ph.D., is Associate Professor, The School of Hospitality Business, Michigan State University; **Raymond S. Schmidgall, Ph.D.**, is Hilton Hotels Professor, The School of Hospitality Business, Michigan State University.