CREDIT AVAILABILITY AND CAPITAL STRUCTURES: DOES SIZE MATTER? AN ANALYSIS OF THE U.S. LODGING INDUSTRY

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ABSTRACT. Capital structure composition decisions are considered as very crucial for the overall success of firms. Lodging industry warrants an even greater emphasis on these decisions for the nature of this industry. This study empirically investigates the effect of credit availability on the leverage of large and small lodging firms in the United States using multivariate analysis of variance (MANOVA). This study uses the Case-Schiller home price index to identify the three time points of differing credit availability to businesses in the United States. Leverage, net leverage, and short-to-long-term debt ratios of large and small U.S. lodging firms were analyzed at these differing credit availability time points to assess any significant differences. Significant effects of credit availability were found on the leverage and net leverage of both large and small lodging firms, but no significant effect was found on the short-to-long-term debt ratio of U.S. lodging firms. Interestingly, the leverage levels were found to be highest at the average availability of credit than when compared to the high and low availability of credit.

INTRODUCTION

In recent years, the service industry has grown rapidly (Weiss, 2008). One of the largest and fastest growing service industries is the hospitality industry (Walker, 2009). Among the world leader in travel and tourism, the United States receives more than 50 million international tourists every year, contributing more than US$120 billion in revenues. An even bigger contribution comes from domestic tourism, which generates more than US$620 billion per year (Mintel Reports, 2010).

Businesses operate with the main goal of profit generation and value maximization for their owners. Firms often are in the quest for an optimal capital structure so as to decrease cost of capital and maximize the firm value. Hospitality firms, too, strive for the same. A number of research studies have been done in the past to evaluate the theories explaining capital structure of firms. Most of those studies identified the determinants of capital structure and tested different theories, whether firms select capital structure based on attributes that determine and weigh potential benefits and costs associated with debt and equity financing (Titman & Wessel, 1988).

The decisions regarding the mix of these two components of capital are even more critical to lodging firms because of its highly capital-intensive nature. The lodging industry invests heavily in land, buildings, fixtures, and equipment as compared with other industries.

The capital structure of firms responds to the credit fluctuations in the capital market. Business cycles, representing the cyclical movement of the overall economy, are known to affect the credit availability in the market and hence cause credit fluctuations. These credit fluctuations, in turn, affect the liquidity in the market, greatly demanded by the growing firms. However, not all firms have the same propensity for credit. The demand for credit is based on the size of the firm. Hence, there is a need to analyze the effect of

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extreme points of the business cycle on a firm's capital structure and on lodging firms in particular. In addition, the effect of firm size must be assessed to make meaningful inferences.

The boom time or the upswing of the business cycle offers businesses with increased investment opportunities. Relaxed norms for credit extension are also noticeable in these times. The opposite is true during the bust times or the downward swing of the business cycle. Singh, Raab, Mayer, and Singh (2014) studied the effect of credit fluctuations on the capital structure of the lodging firms and found significant differences during different time points of credit availability.

Previous research has found periodic and regular patterns in lending norms of banks (Asea & Bloomberg, 1998). Tightening of these lending standards in recessions and easing of these during expansion phases were observed. Briefly, borrowing capacity is determined by the households' collateral in the form of houses or real estate. As the borrowing capacity of the households' increases, banks are keen to lend. In the boom time, when the economy grows, an individual households' capacity to borrow increases as a consequence of increases in its real estate's prices. Subsequently, when a household can borrow more, it will consume more, which, in turn, encourages firms to invest more for higher production of goods and services. This further leads to more economic growth, which then increases asset prices and borrowing capacity in general (Hoffman, 2004). Conversely, this borrowing capacity decreases during the times of recession, forcing banks to change their lending practices. The policies become stricter for accessing the borrowing limits, contrary to the policies during boom times.

The main objective of this study is to analyze the effect of credit fluctuations and firm size on the capital structure of the U.S. lodging firms. Consequently, it attempts to extend the framework proposed by Singh, Raab, Mayer, and Singh (2014) by suggesting that firm size plays a significant role in the determination of capital structure of firms in these fluctuating credit availabilities. Therefore, this study primarily focuses on the interaction effect of credit fluctuations and firm size on the capital structure of the lodging firms in the United States. Thus, it is hypothesized that even though more firms will qualify for securing loans, larger firms will exhibit a higher leverage in comparison to smaller firms because of their proportional capital intensity.

LITERATURE REVIEW

Theoretical Background

Economic Fluctuations: A Trajectory of Business Cycles. Recent upheavals in the U.S. economy were an indication of a business cycle in action. After a rapid upswing through year 2005, the economy faced a downswing, the lowest point of activity in year 2009, and then stabilized somewhat afterwards. The International Monetary Fund (2009) reported the recent downturn in economy represented the deepest global recession to date since the Great Depression. This was very much evident in the U.S. housing market. The booms and busts in housing market prices play a significant role in affecting the confidence of consumer expenditure, consequently affecting the financial markets. According to Stock and Watson (2003), asset prices are strong indicators of inflation while housing prices very much reflect the same. Before the downswing in the U.S. economy, an upswing was driven by the rapid increase in economic output. Between 2004 and 2005, the economic output increased at an annual rate of 9% (Economic Bulletin, 2004). This periodic fluctuation of economy can be reasonably attributed to the business cycles.

A business cycle can be defined as periodic fluctuation in economic activity that is measured by changes in real gross domestic product and other macroeconomic variables (Zarnowitz, 1996). An economy, a comprehensive system of activities production and distribution of goods and services in a region (Collins, 2006), continually experiences the expansion and contraction of various economic

activities, which is referred to as a business cycle. A business cycle can be divided into four phases: expansion, peak, contraction, and trough (Tvede, 2006). A complete business cycle can last for 10 years or more but typically has a span of 3–5 years.

Subsequently the lending agencies, primarily banks, respond to business cycle fluctuations by changing their lending policies. It is interesting to note that previous research has argued that banks altering their lending standards over economic fluctuations are the primary contributors to the boom and bust nature of business cycles (Farmer, 1985, 1988; Gorton & Kahn, 1993; Greenwald & Stiglitz, 1993; Smith, 1995; Zarnowitz, 1985). Furthermore, Asea and Bloomberg (1998) reported systematic patterns in lending standards of banks corresponded to the fluctuations in a business cycle.

Firms tend to take riskier positions when economy is stable since stable economic environment allows profits to rise. Also, firms' leverage increases, exposing some firms to higher risks than others. Consequently, as the debt commitments of these riskier firms exceed their increase in profits, their financial structure inherently weakens (Ferreira, 2002). Furthermore, banks take notice of this weakening financial structure and begin to refuse the refinancing of loans. This further increases difficulties for firms with higher exposure to risk and eventually leading some to bankruptcy. During economic expansion, the demand for net working capital increases with an increase in business investments. Firms, subsequently, become eligible for loans at bank's terms of lending (Bernanke & Gertler, 1989).

The procyclical feature of bank lending to businesses is also partly driven by demand. Business cycles affect banks' profitability through decreased demand for credit. During recessions, the demand for net working capital falls with a decrease in business investments and employment. During an economic expansion, the opposite occurs, as more businesses become eligible for loans at the banks' terms and conditions of lending (Bernanke & Gertler, 1989).

Berger and Udell (1992) observed that the magnitude of a business cycle is further aggravated by the availability of bank loans to fund the economic activities. On the other hand, during adverse business cycle conditions banks resort to credit rationing. In addition, Berger and Udell (1994) observed a significant effect of credit rationing, such as restricting the loan extensions to businesses during the 1991–1992 recession, in an attempt to reduce the overall portfolio risk by tightening the lending criteria.

An upswing in the economy brings growth, which is seen in all business sectors. This is characterized by accelerated capital investment by firms. During boom time, economic activity increases, leading to increased production. In turn, businesses increase their investments for growth and expansion.

Housing Industry in U.S. and Home Price Index. The housing market performance historically has a very significant effect on the overall economy (Muth & Goodman, 2001). Topel and Rosen (1988) noted that price movements and construction activity are positively correlated, making housing market as an attractive candidate for studying investment behavior. A boom in business cycle is indicated by a rise in the price of factors of production. This correlation and positive movement of the elements in an economy witness the phenomenon of capital investment accelerator.

An individual household's capacity to borrow increases with an increase in real estate prices as is evident during economic growth. As a result, banks are willing to lend more when the borrowing capability of households and businesses increase. This increased borrowing capacity encourages an increase in consumption by the households, further enhancing investments by firms to meet the increased demand. This self-reinforcing process amplifies business cycle fluctuations (Hoffman, 2004).

For reasons mentioned previously, housing prices can be perceived as good indicators of economic activity in general. According to Topel and Rosen (1988), housing prices are basically a function of supply and demand.

Therefore, if there is an evidence of credit crunch, demand for housing will decrease further affecting housing prices. For the same reasons, this study uses a housing price index to identify the boom and bust in the business cycle with regards to the U.S. economy. The years of boom and bust are assumedly representative of liberal credit availability and the credit crunch.

It is very much evident and has been demonstrated through previous research that housing price fluctuations have a strong effect on local economies and national mortgage markets (Case 1991; Case & Shiller, 1994). Boom period, which is indicated by rising housing prices, is characterized with an increase in consumer spending and rising costs of the businesses. Conversely, during the bust period, housing prices fall, characterized by a weakening economy, general decrease in consumer spending, and increasing unemployment (Case & Schiller, 1994).

In a previous study, strong linkages between different asset markets have been identified by Chan, Treepongkaruna, Brooks, and Gray (2010). These asset markets are primarily financial, real estate, and commodity markets. Because housing loans contributes significantly to the credit creation in an economy, banks and financial institutions monitor housing prices closely. Another important reason for these lending institutions and financial authorities to monitor housing prices closely is because the aggregate of mortgages significantly influences macroeconomic performance of an economy.

To identify the peaks and troughs in the current business cycle in U.S. economy, this research study uses the Case-Shiller Housing Price Index (HPI). This particular index has been recognized as a leading measure of U.S. residential real estate prices. It is a quarterly index of single-family home prices that is calculated every month. As per Standard and Poor, the firm that collaborates in preparation of this index, its calculation involves repeat sales methodology that measures the movement in the prices of single-family homes in specific geographic regions (Fact Sheet S&P, 2011).

Most of the previous research studies in the area of hospitality firms analyzed the capital structure of lodging firms or the prevalent leverage with other relevant variables (Kim, 1995; Kwansa & Cho, 1995; Nuri & Archer, 2001; Sheel, 1994; Tang & Jang, 2007; Upneja & Dalbor, 2001a, 2001b). At the same time, several studies have looked at the effect of firm size on the financial performance and debt of hospitality firms (Dalbor, Kim & Upneja, 2004; Gustin & Kwansa, 1995; Sheel & Wattanasuttiwong, 1998; Upneja, Kim, & Singh, 2000). However, there exists a gap in terms of analyzing the capital structure of lodging firms at different credit availability times. This study attempts to address this gap in the current body of knowledge by assessing the effect of the macroeconomic variable *business cycle fluctuations*.

Thus, there arises a question with regard to effects of credit availability and firm size on the capital structure of lodging firms: Does the leverage behavior of lodging firms, as measured by leverage, net leverage, and short- to long-term debt ratio gets significantly affected by credit availability and the size of the firm?

METHOD

Data Analysis

This study used a 3×2 factorial multivariate analysis of variance to evaluate the differences in leverage of U.S. lodging firms at the three different time points as identified through the HPI. Year 1995 was determined to be with low credit availability using Case-Shiller HPI (HPI = 76.66); year 2006 was high in credit availability (HPI = 226.82); and year 2009 was identified as of average or medium credit availability, between high and low (HPI = 152.22). This analysis was conducted using secondary data downloaded from COMPUSTAT for SIC code 7011 (hotels and lodging establishments).

Factorial multivariate analysis of variance uses two or more independent variables, each with two or more levels. This study used the credit availability and firm size as the independent variables. Credit availability was analyzed at three levels, high credit availability,

low credit availability, and average credit availability. Firm's size was analyzed at two levels: large firms and small firms. Using univariate tests in an analysis involving more than one dependent variable leads to greatly inflated type I error. Furthermore, a multivariate test is considered more powerful when the groups may not be significantly different on any of the variables individually, but jointly the set of dependent variables may differentiate the groups (Stevens, 2002). Therefore, a multivariate analysis of variance will be performed on the independent variable to determine whether statistically significant differences exist on the set of dependent variables based on credit availability and size of the firm. Multivariate analysis of variance and analysis of variance test results were analyzed at the significance level of .05, which is a widely accepted norm in the social sciences (Tabachnick & Fidell, 2007).

Interaction effects are analyzed to assess the firm wise effect on leverage at three time points, and main effects are analyzed to assess the differences in leverage within different time points and as well as differences in leverage within firm sizes.

Variable Selection

Dependent Variables. Leverage: With respect to particular proxies for leverage, the empirical literature proposes a number of measures in terms of ratios. These ratios include total liabilities to total assets, total capitalization (total debt to total equity), and total debt to net assets. This study will use the ratio of short-term debt plus long-term liabilities to total assets, as a measure of leverage. Although there is much debate about the true value of a firms fixed assets and generally accepted accounting principles, the study focuses only on the book value of the assets.

Net leverage: Sharpe (1994) mentions that the primary measure of financial leverage is called the net-leverage ratio. This ratio is computed as the book value of total debt over book value of assets, with net short-term assets subtracted from both numerator and denominator. Net short-term assets include cash plus short-term investment plus receivables less payables. Netting out short-term liquid assets is meant to produce a comprehensive measure of overall tightness of the firm's balance sheet.

TABLE 1. Variables and Measurement

Variable	Measurement
Leverage	Total liabilities/total assets
Net leverage	Book value total debt/book value total assets
Short- to long-term debt ratio	Current liabilities/long-term liabilities

Short- to long-term debt ratio: The differences in the financing of lodging companies are not limited to their debt-equity composition. Because companies can raise short-term debt and provide liquidity to their long-term debt holder, this particular ratio is of interest for capital structure analysis of lodging firms in three time points described previously. This research study uses a ratio of a lodging firm's current liabilities to long-term liabilities.

These measured dependent variables are summarized in Table 1.

Independent Variables. Years (Time Points): This study will use the Case-Shiller housing pricing index (HPI) to identify the years when house prices were highest, lowest, and average (the recent lowest prices). The Case-Shiller index was used as a proxy to identify the years with high credit availability—when house prices were at the peak, the year with low credit availability—when house prices were at the lowest, and the year with an average credit availability—when house prices were somewhat in the middle of these high and low price years. The year 1995 was identified as the year with tighter credit regulations, 2006 was identified as the year with relaxed credit regulations, and 2009 was identified as a year with average credit availability. The HPI figures for these years were as follows: 1995 = 76.66, 2006 = 226.82, and 2009 = 152.22. Thus, the independent variable year was used with three categories: low credit, high credit, and average credit.

Firm size: For the purpose of this research analysis, all the lodging firms in these three different time points with differing credit

availability were divided into large and small firms. This study follows the approach used by Upneja, Kim, and Singh (2000) to categorize firms into large and small firms. Sample firms were classified into large and small groups using the median value of total assets for the sample firms for all the time points analyzed. For low-credit year, total assets worth $1 billion dollars were the criteria for differentiating large and small firms. For high-credit year, total assets worth $3 billion were the criteria for differentiating large and small firms. For average-credit year, a total asset worth $4 billion was the criteria for differentiating large and small firms.

RESULTS

Descriptive statistics for the sample firms are presented in Table 2.

The final data for analysis consisted of a total of 117 (49.79%) large and 118 (50.21%) small firms. Low credit level has the maximum number of observations 127 (54.04%), followed by average credit level totaling 55 (23.40%) and high credit level had minimum, total 53 (22.55%) observations. Even though low credit level had the maximum number of observation but within it the firms were equally distributed based on their total asset size. Large firms made up 49.61% and small firms made up 50.39% of the total sample. Similar equal distribution was evident within high credit level, large made up 50.94% and small made up 49.06%; and in average credit level, large made up 49.09% and small made up 50.91% of the total sample.

TABLE 2. Average Means and Standard Deviations of the Leverage, Short- to Long-Term Debt Ratio, and Net Leverage, by Credit Level and Firm Size

			Leverage		Short to Long		Net Leverage	
Credit Level	Size	*n*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Low credit	Large	63	0.62	0.25	0.29	0.24	0.58	0.25
	Small	64	0.54	0.34	0.33	0.27	0.50	0.35
	Total	127	0.58	0.30	0.31	0.25	0.54	0.31
High credit	Large	27	0.48	0.17	0.25	0.19	0.38	0.19
	Small	26	0.60	0.30	0.34	0.19	0.54	0.31
	Total	53	0.54	0.25	0.29	0.19	0.46	0.27
Average credit	Large	27	0.60	0.16	0.33	0.23	0.51	0.21
	Small	28	0.79	0.33	0.30	0.18	0.73	0.35
	Total	55	0.70	0.28	0.31	0.21	0.62	0.31
Total	Large	117	0.58	0.22	0.29	0.23	0.52	0.24
	Small	118	0.61	0.35	0.33	0.23	0.56	0.35
	Total	235	0.60	0.29	0.31	0.23	0.54	0.30

The average mean of leverage of hospitality firms was highest in the average credit level at .70, followed by low credit level at .58 and it was the lowest in high credit level at .54. Short- to long-term debt ratio of the hospitality firms was lowest in the high credit level at .29, and was same at .31 for both low and average credit levels. net leverage of hospitality firms was highest in the average credit level at .62, followed by low credit level at .54, and was the lowest for high credit level at .46.

The average mean of large hospitality firms for leverage was lower at .58 than small firms at .61. The average mean of short- to long-term debt ratio of small firms was higher at .33 than large firms at .29. The average mean of net leverage of small hospitality firms was higher at .56 than large firms at .52.

First, the multivariate significance was assessed on the linear combination of three dependent variables at different credit levels, different firm sizes and the interaction between credit levels and firm sizes. At an alpha level of .001 to evaluate homogeneity of variance-covariance matrices assumption, Box's *M* test of homogeneity of covariance was significant ($p < .001$). Box's *M* test is highly sensitive, more than often it results in a significant value. Because in this case the homogeneity of variance-covariance matrices assumption is violated, instead of Wilk's lambda criterion Pillai's trace criterion was used for assessing the multivariate significance. Multivariate test results are presented in Table 3.

Using Pillai's trace as the omnibus test statistic, the combined dependent variables resulted in significant main effects for credit level, $F(6, 456) = 4.461$, $p < .001$; firm size, $F(3, 227) = 4.57$, $p < .01$; and the interaction effect Credit level × firm size, $F(6, 456) = 3.140$, $p < .01$. Thus, a significant difference in leverage levels was found for different credit levels, different firm sizes, and these leverage differences varied during different credit times in

TABLE 3. Multivariate *F* Test of Significance in Leverage for Credit Level, Firm Size, and Credit Level × Firm Size

Test	Value	*F*	Hypothesis *df*	Error *df*	*p*
Credit level					
Pillai's trace	0.111	4.461	6	456	.000**
Wilks' lambda	0.892	4.444	6	454	.000**
Hotelling's trace	0.118	4.426	6	452	.000**
Roy's largest root	0.066	5.047	3	228	.002**
Firm size					
Pillai's trace	0.057	4.570	3	227	.004**
Wilks' lambda	0.943	4.570	3	227	.004**
Hotelling's trace	0.06	4.570	3	227	.004**
Roy's largest root	0.06	4.570	3	227	.004**
Credit level × firm size					
Pillai's trace	0.079	3.140	6	456	.005**
Wilks' lambda	0.922	3.157	6	454	.005**
Hotelling's trace	0.084	3.173	6	452	.005**
Roy's largest root	0.071	5.403	3	228	.001**

Note. $^*p < .05$; $^{**}p < .01$.

TABLE 4. Univariate F Test of Significance in Leverage for Credit Level, Firm Size, and Credit Level × Firm Size

Dependent Variable	Type III Sum of Squares	*df*	Mean Square	*F*	*p*
Credit level					
Leverage	0.716	2	0.358	4.519	.012*
Short to long	0.013	2	0.007	0.124	.883
Net leverage	0.724	2	0.362	4.216	.016*
Firm size					
Leverage	0.296	1	0.296	3.734	.050*
Short to long	0.068	1	0.068	1.304	.255
Net leverage	0.486	1	0.486	5.662	.018*
Credit level × firm size					
Leverage	0.819	2	0.41	5.174	.006**
Short to long	0.106	2	0.053	1.006	.367**
Net leverage	1.068	2	0.534	6.222	.002**

Note. $^*p < .05$; $^{**}p < .01$.

different firm sizes. Next, to probe the statistically significant multivariate effects, univariate 3 × 2 analyses of variance were conducted on each individual dependent variable. Results of univariate analyses of variance for effect of credit level are presented in Table 4.

Analysis of the univariate *F* test reveals that credit level had a significant main effect on leverage, $F(2, 229) = 4.519$, $p = .012$; and net leverage, $F(2, 229) = 4.216$, $p < .05$. For the short- to long-term debt ratio, there was a no significant main effect of credit level, $F(2, 229) = .124$, $p > .05$. Thus, leverage levels were significantly different at different credit levels and were different for different sized firms. A post-hoc analysis of this main effect using Tamhane's T2 revealed that leverage levels were significantly higher ($p < .05$) for average credit level ($M = 0.70$) relative to lower credit level ($M = 0.58$), and high credit level was the lowest ($M = 0.54$). Also, net leverage levels for average credit level ($M = 0.62$) were significantly higher ($p < .05$) than low ($M = 0.54$) and high ($M = 0.46$) credit levels.

Furthermore, *firm size* had a marginally significant main effect on *leverage*, $F(1, 229) = 3.73$, $p = .05$; and *net leverage*, $F(1, 229) = 5.66$, $p < .05$. Here again, for the short- to long-term debt ratio, there was no significant main effect of firm size, $F(1, 229) = 1.304$, $p > .05$. Leverage levels were significantly higher for small firms ($M = 0.61$) relative to large firms ($M = 0.58$). Net leverage levels were significantly higher for small firms ($M = 0.56$) relative to large firms ($M = 0.52$).

Last, the effect of credit level × firm size interaction was analyzed with univariate *F* test for all three dependent variables. The interaction effect was statistically significant on leverage, $F(2, 229) = 5.174$, $p < .01$; and net leverage, $F(2, 229) = 6.222$, $p < .01$. However, the interaction effect was nonsignificant for short- to long-term debt ratio, $F(2, 229) = 1.006$, $p > .05$.

TABLE 5. Univariate *F* Test of Significance in Leverage for Firm Size Within Credit Levels of Average, Low, and High Credit

Dependent Variable	Type III Sum of Squares	*df*	Mean Square	*F*	*p*
Average credit level					
Leverage	0.52	1	0.52	7.42	.009**
Short to long	0.01	1	0.01	0.239	.627**
Net leverage	0.634	1	0.634	7.508	.008**
Low credit level					
Leverage	0.184	1	0.184	2.03	.157
Short to long	0.053	1	0.053	0.834	.363
Net leverage	0.203	1	0.203	2.16	.144
High credit level					
Leverage	0.167	1	0.167	2.773	.102
Short to long	0.126	1	0.126	3.525	.066
Net leverage	0.342	1	0.342	5.033	.029*

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

Because significant interaction effects were found for leverage and net leverage, post-hoc comparison test were used to determine the differences based on credit level × firm size. Simple effects test were conducted, using Bonferroni procedure with adjusted alpha, to probe the interaction. The simple effects of firm size at each credit level were examined to determine the significance (see Table 5).

For average credit level, small firms ($M = 0.79$, $SD = 0.33$) were significantly more levered than large firms ($M = 0.60$), $F(1, 53) = 7.42$, $p < .01$; and small firms ($M = 0.73$) had significantly higher net leverage than large firms ($M = 0.51$), $F(1, 53) = 7.51$, $p = .01$. For short- to long-term debt ratio, there was a nonsignificant simple effect of firm size at average credit level, $F(1, 53) = .239$, $p > .05$, indicating that there were no differences in the short- to long-term debt ratio of large and small hospitality firms. The means and standard deviations are presented in Table 1.

For low credit level, no statistically significant differences were found in the leverage levels of small firms ($M = 0.54$) and large firms ($M = 0.62$), $F(1, 125) = 2.03$, $p > .05$; net leverage levels of small firms ($M = 0.50$) and large firms ($M = 0.58$), $F(1, 125) = 2.16$, $p > .05$; and short- to long-term debt ratio of small firms ($M = 0.33$) and large firms ($M = 0.29$), $F(1, 125) = .834$, $p > .05$.

TABLE 6. Univariate *F* Test of Significance in Leverage for Credit Level Within Firm Size of Large and Small Firms

Dependent Variable	Type III Sum of Squares	*df*	Mean Square	*F*	*p*
Large firms					
Leverage	0.365	2	0.182	3.895	.023*
Short to long	0.087	2	0.044	0.86	.426*
Net leverage	0.751	2	0.376	6.951	.001*
Small firms					
Leverage	1.193	2	0.596	5.361	.006*
Short to long	0.032	2	0.016	0.294	.746*
Net leverage	1.065	2	0.533	4.537	.013*

Note. $*p < .05$.

For high credit level, no statistically significant differences were found in the leverage levels of small firms ($M = 0.60$) and large firms ($M = 0.48$), $F(1, 51) = 2.77$, $p > .05$; and short- to long-term debt ratio of small firms ($M = 0.34$) and large firms ($M = 0.25$), $F(1, 51) = 3.525$, $p > .05$. However, small firms ($M = 0.54$) had significantly higher net leverage than large firms ($M = 0.38$), $F(1, 51) = 5.03$, $p < .05$.

Last, the simple effects of credit level at each level of firm size were examined to determine the significances (see Table 6).

For large firms, there were significant differences in leverage levels, $F(2, 114) = 3.90$, $p < .05$. Post-hoc analyses using Bonferroni correction revealed that leverage levels were significantly higher ($p < .03$) for low credit level ($M = .62$) than high credit level ($M = .48$). But no significant differences were found for leverage between average credit level and low credit level ($p > .05$), and average credit level and high credit level ($p > .05$).

Also, for large firms, there were significant differences in net leverage levels, $F(2, 114) = 6.95$, $p < .05$. Net leverage levels were significantly higher ($p < .03$) for low credit level ($M = 0.58$) than high credit level ($M = 0.38$). No significant differences were found for net leverage between average credit level and low credit level ($p > .05$), and average credit level and high credit level ($p > .05$).

For short- to long-term debt ratio, there was a nonsignificant simple effect of credit level for large firms, $F(2, 114) = 3.525$, $p > .05$,

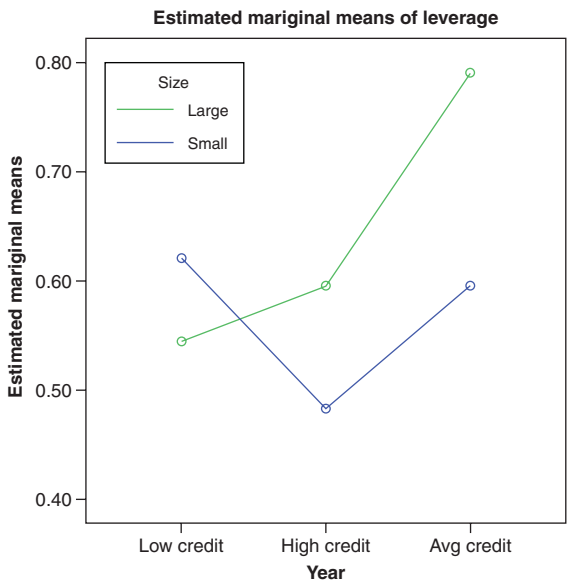

FIGURE 1. Interaction plot for leverage of large and small firms.

indicating that there were no differences in the short to long term debt ratio of large hospitality firms at the low credit, high credit, and average credit level.

For small firms, there were significant differences in leverage levels, $F(2, 115) = 5.361$, $p < .01$. Post-hoc analyses using Bonferroni correction revealed that leverage levels were significantly higher ($p < .03$) for average credit level ($M = .79$) than for low credit level ($M = 0.54$). No significant differences were found for leverage between high credit level and low credit level ($p > .05$), and high credit level and average credit level ($p > .05$).

Also, for small firms, there were significant differences in net leverage levels, $F(2, 115) = 4.537$, $p < .05$. Net leverage levels were significantly higher ($p < .03$) for average credit level ($M = .73$) than low credit level ($M = 0.50$). No significant differences were found for leverage between high credit level and low credit level ($p > .05$), and high credit level and average credit level ($p > .05$). Means and standard deviations of the dependent variables are presented in Table 2. Interaction plots for leverage and net leverage of large and small firms are shown in Figures 1 and 2.

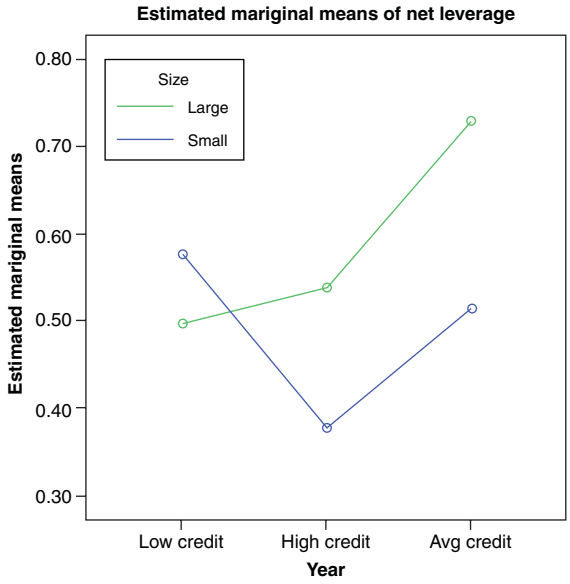

FIGURE 2. Interaction plot for net leverage of large and small firms.

DISCUSSION

The purpose of this study was to analyze leverage behavior of lodging firms in the U.S. The study attempted to investigate leverage of lodging firms as a function of credit availability and firm sizes, particularly the effect of an interaction effect of credit availability and firm sizes.

The first research question attempted to answer if there is a significant relationship between the size of the firm and the leverage behavior of lodging firms, as measured by the three dependent variables, leverage, net leverage, and short to long term debt ratio. Multivariate analysis revealed there was a significant effect of firm size on the leverage of lodging firms as measured by the three dependent variables. Further univariate analysis revealed that both leverage and net leverage were significantly affected by the firm size. Leverage and net leverage levels of small lodging firms were significantly higher than the large lodging firms. This finding is consistent with the pecking order hypothesis (Myers & Majluf, 1984) that managers, acting in the interest of owners; prefer internal financing over external financing. According to the pecking order theory of business model,

a firm will look for external financing and prefer debt financing to equity financing once after it has exhausted its internal funds (Myers & Majluf, 1984). New debt is issued only when the firm faces an imbalance between funds required and internal cash flows. If firms require external financing, managers will chose to issue debt before equity.

Prior studies have reported a positive relation between size of firm and leverage levels (Friend & Lang, 1988; Marsh, 1982). Titman and Wessels (1988) stated that large firms do not consider bankruptcy costs in deciding the level of leverage as these potential costs are just a small percentage of the total value of the firm. Therefore, large firms may prefer to use higher level of leverage. On the other hand, research has provided evidence regarding the negative relationship between the size of firms and their leverage. Rajan and Zingales (1995) found that large firms are generally well-established and have a good performance track record, enabling them to issue equity at fair prices. In turn, this reduces their reliance on debt and therefore a negative relationship exists between size and leverage of a firm. In addition, smaller firms have a much larger costs of issuing equity than large firms (Smith, 1977). This study found mixed results in terms of firm's size and leverage levels. As is evident form the results for one time point, the low credit level, large firms were having a significantly higher leverage than small firms, but for high and average credit levels smaller firms were significantly higher in leverage than the larger firms. These interactions effects could possibly be present because of the unique nature of hospitality industry itself. Findings of this study suggest that large lodging firms are less reliant on external debt financing as compared to smaller lodging firms and thus exhibit lower leverage levels. In the present study Short to long term debt ratio was not affected by firm size.

Last, the study investigated if leverage of lodging firms, as measured by leverage, net leverage, and short to long term debt ratio gets significantly affected by the interaction between credit availability and firm size. Multivariate results revealed a significant interaction effect of credit availability and firm size on the leverage of lodging firms. Analysis of simple effects showed that small lodging firms have significantly higher leverage than the large lodging firms during average credit availability. This can be viewed as an after effect of the federal government's efforts to provide liquidity to financial institutions, which is more sought after by small firms. Furthermore, it was found that large lodging firms have significantly higher leverage at low credit availability than high credit availability. This finding suggests that larger lodging firms are seen as less risky and are more credible than the smaller firms in times of stricter credit policies. Large firms have lesser need for credit in boom times when their internal cash flows are high. On the other hand, small lodging firms had high leverage in average credit availability than in low credit availability.

Simple effects for net leverage show that small lodging firms had higher net leverage levels than large lodging firms in the times of average credit availability and high credit availability. Also, net leverage levels of large lodging firms were higher at low credit availability than at high credit availability. These findings also suggest that large firms do not have the same propensity for debt in boom times as small firms, because of healthy internal cash flows, and hence, can use these internal funds if needed. This finding is also consistent with pecking order hypothesis that managers, acting in the interest of owners, prefer internal financing over external financing. Small lodging firms have significantly higher net leverage levels in average credit availability than in low credit availability. This finding suggests that small firms seek higher debt during the boom time because of expansions and new projects as compared to large firms. Smaller firms were able to secure debt, a more convenient source for capital than equity for them, because of relaxed credit extension policies supported by the enhanced liquidity provided by the Federal Reserve.

IMPLICATIONS OF THE FINDINGS

Implications of the results are discussed next for both the lodging firms and their stakeholders.

Case of Small Lodging Firms

It is evident from the results that leverage of small lodging firms increased in the average credit availability (2009). The main reason for this enhanced leverage, despite the overall economy witnessing a recession, appears to be the Federal Reserve's efforts to provide enough liquidity to financial institutions. Small firms were able to secure higher debt levels to continue their market expansion projects, probably undertaken during boom times. These firms must assess the market conditions and make decisions regarding their future plans. In this specific case, it was very clear that the economy is witnessing a downward trend. Despite this fact, smaller firms continued with the projects undertaken and raised capital through increased debt financing.

Debt financing is the first option for smaller firms as raising equity capital is often seen as a difficult task for them. There are dangers inherent in this increased leverage for small lodging firms, because with leverage, their unsystematic risk also increases. This can certainly pose problems in the future for these small lodging firms. They should carefully analyze the overall economic trend and plan accordingly by limiting their debt levels. They can take actions such as decreasing the magnitude of expansions, and disposing of assets acquired for future expansions. If these companies were securing debt because of decreased cash flows, they might face much bigger financial problems in the near future. It is advisable for them to keep their unsystematic risk levels low. These results indicate that Federal Reserve's efforts to provide extra liquidity may only be effective as a short term solution for small lodging firms.

Case of Large Lodging Firms

The results displayed a completely different scenario with respect to large lodging firms. Their leverage levels were the highest during low credit availability and lowest during the high credit availability. The possible reasons for this high leverage during slow economic times or low credit levels are decreased internal cash flows, and their higher credibility in the market as compared to small lodging firms. In contrast, their leverage decreased significantly during high credit availability or in the boom time. Again, one possible reason is increased internal cash flows, which enabled them to meet their financial obligations. This finding is consistent with pecking order hypothesis. Managers were possibly using internal cash flows to meet the financial obligations and to fund any new projects.

Strategic suggestion for management of large hospitality firms will be to enhance their leverage levels in the times of higher credit availability. They can use excess internal funds for investment into other businesses. This diversification will help them mitigate the overall risk of these firms. As far as funding expansions or future projects is concerned, they should strategically harness this opportunity to increase their leverage. Increased leverage will ensure a higher return on equity and eventually help increase the wealth of owners by improving stock prices. A possible concern on the other hand could be the enhanced risk profiles of these large firms. Large firms will still be seen as a safer investment option than the small firms, because of the magnitude of their business operations.

Limitations of the Study

This research study was limited to publicly traded hospitality firms which were identified by their individual Standard Industrial Classification (SIC) code numbers, which are listed in the New York Stock Exchange (NYSE), the American Stock and Options Exchange (AMEX), and the National Association of Securities Dealers Automated Quotation System (NASDAQ) in years 1995, 2006, and 2009.

Firm survival bias is determined as a major limitation of this study. This is very common in the service industry. Furthermore, in this study the firms that were categorized as large and small were not consistent for all the time points. As is true with any other industry, few firms were shut down while few other firms followed the merger path. For reporting purposes different firms could have used different

accounting procedures for reporting purposes which might have affected the analyses.

In addition, the effects observed at the different points of credit availability could have resulted from decisions made in the prior years. Therefore, a possible lag effect could be present in the observations.

Recommendations for Future Research

This research study empirically investigated whether leverage behavior of lodging firms gets significantly affected by the credit availability and the firm size. This research study provides a foundation for future research in the same area.

First, there was a significant finding regarding leverage behavior of large lodging firms. Large lodging firms were not inclined towards harnessing the available credit opportunities. These firms preferred lower leverage levels and possibly resulted in much smaller return on equity for owners, making them much less attractive as an investing option eventually negatively affecting stock prices. This phenomenon should be investigated in future studies.

Second, the year of average credit availability witnessed Federal Reserve's intervention to increase liquidity. Future studies must compare leverage levels of lodging firms by taking out this effect or controlling for it.

Third, this study analyzed total debt of the lodging firms; a more realistic study will be to analyze the public and private debt separately. Analyzing them separately will provide insights into public and institutional lending behavior with respect to lodging firms.

Last, short- to long-term debt ratio did not exhibit any significant differences for large and small lodging firms over different levels of credit availability. This should be investigated further in future studies to get a better understanding regarding short term leverage behavior of the lodging firms.

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