



DETERMINANTS OF CAPITAL STRUCTURE AND LEVERAGE IN THE HOTEL INDUSTRY: A CASE STUDY OF THE REPUBLIC OF SERBIA

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Abstract:

The paper examines the determinants of capital structure, i.e. level of the leverage of hotels operating in the Republic of Serbia. The study investigates the influence of six determinants that have been identified as significant according to the pecking order hypothesis and the static trade-off model. The research was conducted on a sample of 37 hotels from 2012 to 2022. The findings indicate that all determinants, except non-debt tax shields, have a statistically significant impact on the capital structure of hotels.

Keywords:

structure capital, leverage, hotel industry, determinants, Republic of Serbia.

INTRODUCTION

Numerous empirical studies show that the capital structure is a significant factor in the hotel business (Agiomirgianakis *et al.*, 2012, 2013; Skuflić and Mlinarić, 2015; Tan, 2017; Dimitrić *et al.*, 2019; Pimic *et al.*, 2023). However, among these researches, there is no unified position regarding the direction of the influence of the capital structure on the success of business in the hotel industry. The dominant view is that leverage has a negative impact. The authors find justification for this finding in the fact that the increase in leverage leads to an increase in operating costs due to higher interest rates paid for borrowed capital. This attitude is consistent with the theory of the hierarchy of financial choice (Sheel, 1994), according to which firms do not try to find an optimal capital structure, only turning to debt when internal finance is insufficient. On the other hand, these findings contradict the agency theory of capital structure (Jensen, 1986) and the trade-off theory of capital structure. The first theory points out that higher leverage influences company management to invest in projects that have added value. Another theory also indicates that there is a positive relationship between leverage and business success. Researches that indicate that the relationship between leverage and business success changes over time are not rare either. Thus, the research results of Tang and Yang (2009) show that the relationship between leverage and hotel profitability changes over time, that is, there are periods in which leverage has a positive impact on hotel profitability, but periods in which leverage has a negative impact on hotel profitability.

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However, all of such findings are not consistent with the capital structure theory presented by Modigliani and Miller (Modigliani and Miller, 1958). According to this theory, the capital structure is irrelevant to the value of the company. The value of the company depends only on the quality of the company's assets that create additional value (Nunes and Serrasqueiro, 2015), and not on the ratio between equity and borrowed capital.

In the context of capital scarcity, particularly due to the seasonal nature of business in the tourism and hotel industry, the formation of an optimal capital structure and its impact on the success of hotel businesses becomes of utmost importance (Pimic *et al.*, 2023). This is especially true in the Republic of Serbia, where limited access to financing sources is prevalent, mainly due to the dominance of the bank-centric system and the scarcity of hotels listed on the stock exchange. Understanding the determinants that affect the level of leverage in the hotel industry is crucial under such conditions. For this reason, it is important to examine the determinants that affect the level of leverage in the hotel industry. Namely, in the Republic of Serbia, it is anticipated that leverage would have a negative impact on hotel business success. The high interest rates associated with the bank-centric system result in elevated borrowing costs, negatively affecting hotel profitability. On the other hand, the relatively small number of hotels that are listed on the stock market means that hotels do not have the opportunity to obtain fresh capital through the issue of securities. They are forced to borrow from banks. Hence, the limited availability of fresh capital through the issuance of securities forces hotels to rely on borrowing from banks, further supporting the expectation of a negative impact of leverage. This perspective aligns with the theory of the hierarchy of financial choice, which suggests that, in the absence of sufficient internal funds, hotel management is more likely to seek short-term financing sources (Myers, 1977). However, excessive reliance on short-term financing for investments can lead to an increased financial burden (Fagiolo & Luzzi, 2006), elevating the risk of bankruptcy and liquidation.

Under these circumstances, it is very important to understand the factors that affect the level of leverage. Given the competing theoretical frameworks dominating the literature on capital structure decisions—the pecking order hypothesis and the static trade-off model—the research will focus on the determinants of capital structure identified by these theories. Specifically, the study will explore the impact of profitability, liquidity, hotel size, non-debt tax shields, and earnings volatility, as these factors have shown conflicting findings in their influence on capital structure decisions.

LITERATURE REVIEW

Since the appearance of Modigliani and Miller's theory of capital structure (Modigliani & Miller, 1958) in professional and academic circles, the focus has been on two theoretical frameworks that are used to explain decisions related to capital structure. The first framework is known as the pecking order hypothesis. The Pecking Order Hypothesis suggests that companies have a preferred order for financing their investments and projects. According to this hypothesis, companies prioritize internal financing (retained earnings) as the first choice for funding their investments, followed by debt financing, and as a last resort, equity financing (issuing new shares). The main idea behind the Pecking Order Hypothesis is that companies face information asymmetry between managers and outside investors. Managers have better information about the true value and prospects of the company than the market. As a result, when a company needs to raise funds, it will prefer to use internal funds rather than external financing, as issuing new equity might signal to the market that the company's shares are undervalued. Moreover, the Pecking Order Hypothesis emphasizes the aversion of managers to issue new equity because it can lead to a dilution of existing shareholders' ownership and reduce their control over the company. Hence, companies tend to rely on debt financing if internal funds are insufficient, as debt does not dilute ownership and allows companies to maintain control.

The Static Trade-off Model is a theory of capital structure that complements the Pecking Order Hypothesis. This model suggests that a company's optimal capital structure is determined by balancing the tax benefits of debt with the costs of financial distress. In other words, the model proposes that there exists an optimal capital structure resulting from trade-offs between the tax advantages gained from interest and the costs associated with financial distress.



Numerous empirical studies have been conducted to investigate the effectiveness of two competing hypotheses, namely the trade-off theory and the pecking order theory, in explaining firms' financing decisions (Sheel, 1994; Tang and Jang, 2009; Deari and Deari, 2010; Sarlija and Harc 2012; Malinic *et al.*, 2013; Nunes and Serrasqueiro, 2015; Tan, 2017; Valentina, 2021). The findings of these studies indicate that profitability, liquidity, hotel size, non-debt tax shields, and earnings volatility are significant determinants of the level of leverage. However, depending on whether these studies are based on the Pecking Order Hypothesis or the Static Trade-off Model, their results regarding the direction or sign of the impact of these determinants differ. Important are the researches have pointed out that Eastern European firms' capital structure behaves differently from Western European firms, as the level of financial leverage is lower in Eastern firms compared to Western firms (Malinic *et al.*, 2013). In the context of the research subject of the paper, as well as the necessity of this research, it is important to mention the conclusions of the research conducted by Jõeveer (2006) and Delcours (2007). Jõeveer (2006) finds that capital structure choices in small and unlisted companies are primarily influenced by country-specific factors. However, in the case of listed and large unlisted companies, decisions on firms' leverage are more significantly driven by firm-specific factors. Delcours (2007) also highlights specific factors that influence firms' leverage decisions in CEE (Central and Eastern European) countries, including financial constraints of banking systems, differences in legal systems governing firms' operations, protection of shareholders' and bondholders' rights, the sophistication of equity and bond markets, and corporate governance practices. That the specific business conditions in a national economy influence the choice of capital structure is also evidenced by the results of the survey conducted by Mosnja-Skare & Skare (2002), Klapper and Tzioumis (2008), Deari and Deari (2010), and Sarlija and Harc (2012).

All the above points to the impossibility of drawing a universal conclusion regarding the influence of certain determinants on the level of leverage in the hotel industry, as well as the necessity to examine this issue on a case-by-case basis.

METHODOLOGY AND RESEARCH VARIABLES

The study was conducted on a sample of 37 hotels, with a capacity ranging from 20 to 225 accommodation units, categorized from 1 to 5 stars, operating in the Republic of Serbia. The research period spans from 2012 to 2022. Data was collected from the Amadeus database and chambers of commerce. The selected duration of the observation period covers a sufficient time interval to capture all heterogeneities in the structure of the observed units and their changes over time using a dynamic panel analysis model (Radivojević *et al.*, 2019). The choice of indicators used to describe the determinants of the level of leverage in the hotel industry is in line with the previously analyzed literature (Table 1).

Table 1. The determinants of the level of leverage.

Name of the determinante	Indicator
Leverage (Lev)	Total debt/total assets
Profitability of the hotel (ROE)	Return on equity
Liquidity of the hotel (Lq)	Cash ratio = cash/current liabilities
Hotel size (Size)	Natural logarithm of total sales
Non-debt tax shields (NDST)	NDST = (operating income – interest – taxes)/tax rate
Earnings volatility (EV)	Standard deviation of profitability

Source: Author's.

A panel data approach is used to examine the results. Panel data analysis deals with data in which behaviour of entities is observed over time. Using panel data techniques enables the control of the bias generated by potential heterogeneity (Radivojevic and Jovovic, 2017). A static panel estimation is used in the paper, which mathematically may be expressed by following the linear model for panel data:



$$\begin{aligned} Lev_{i,t} &= \alpha_i + \beta X_{i,t} + \varepsilon_{i,t} & ROE_{i,t} &= \alpha_i + \beta X_{i,t} + \varepsilon_{i,t} \\ ROE_{i,t} &= \alpha_i + \beta X_{i,t} + \beta_3 unr_{i,t} + \beta_4 inf_{i,t} + \beta_5 ennr_{i,t} + \beta_6 hip_{i,t} + \beta_7 roa_{i,t} + \beta_8 roe_{i,t} + \beta_9 car_{i,t} + \\ &+ \beta_{10} lp_{i,t} + \beta_{11} nimr_{i,t} + \beta_{12} nimr_{i,t-1} + \beta_{13} nimr_{i,t-2} + \varepsilon_{i,t} \end{aligned} \quad (1)^1$$

Where $Lev_{i,t}$, $ROE_{i,t}$ is the observation on the dependent variable for cross-sectional unit i in period t , $X_{i,t}$ is a $1 \times k$ vector of independent variables (ROE, Lq, Size, NDST and EV) observed for unit i in period t , β is a $k \times 1$ vector of parameters. The α_i is a unit-specific and time-invariant component and $\varepsilon_{i,t}$ an observation specific error to unit i in period t . The α_i are then treated as fixed parameters (in effect, unit-specific y-intercepts). For this reason, the model is estimated by static panel data estimator. Precisely, the Fixed effects estimator was used.

DATA ANALYSIS

Table 2 gives a summary of the descriptive statistics of the data set. As can be seen from Table 2, the level of leverage is around 0.51. This implies that they mostly finance their operations through debt. An ROE value of 0.513 can be considered decent, but the rating depends on the industry in which the company operates and the standards in that industry. It is important to keep in mind that the hotel industry is sensitive to seasonal changes and changes in the tourism industry, which affects profitability and ROE values. This can be considered relatively low liquidity, as it indicates that hotels face a challenge in quickly settling their short-term obligations. The cash ratio is around 0.5. A low liquidity ratio indicates the need to improve cash management. Also, it can be a signal for analyzing financial health and assessing possible risks that may affect the company's ability to meet its short-term obligations. Data for hotel size indicate a relatively large range in terms of hotel size. The value of the indicator describing non-debt tax shields of about 0.007 indicates that the hotels very rarely use various tax benefits and methods to reduce their tax liability. In other words, they underutilize non-debt tax shields. A high value of the EV variable indicates that hotels face large fluctuations in income and are therefore exposed to high operational risk.

Table 2. Descriptive Statistics of collected data.

	LEV	REO	Lq	Size	NDST	EV
Mean	0.510	0.513	0.493	3.481	0.007	0.497
Standard Deviation	0.280	0.284	0.294	0.285	0.281	0.282
Minimum	0.002	0.004	0.001	0.002	0.001	0.002
Maximum	0.994	1.405	5.988	12.070	1.000	0.999
Count	370	370	370	370	370	370

Source: Author's.

The first step in dealing with time series is to check the panel stationary by using a unit root test for stationary. For that purpose, in the paper, were used the ADF test. The results indicate that all variables, except the level of leverage and hotel size, suffer from non-stationarity. Due to this reason, a differencing technique was applied. All variables became stationary after the first differencing. Due to the extensive data, the results of the ADF test are not shown. The next step in dealing with panel data is analyzing the correlation matrix, which is given in Table 3.

¹ The formula is result of the authors' research.



Table 3. The Correlation Matrix.

	LEV	REO	Lq	Size	NDST	EV
LEV	1.000					
REO	0.030	1.000				
Lq	-0.110	-0.119	1.000			
Size	-0.017	-0.094	0.018	1.000		
NDST	-0.002	0.049	-0.037	-0.014	1.000	
EV	0.071	-0.026	0.022	-0.001	0.090	1.000

Source: Author's.

Since there is no significant correlation between the variables, the research was continued with all variables because there is no danger of multicollinearity. The results of the FE panel data estimation are presented in Table 4.

Table 4. The results of the FE panel data estimation.

	Coefficient	St. error	t-ratio	p-value
Const.	0.511	0.062	8.253	0.000
REO	-0.525	0.060	-8.690	0.000
Lq	-0.122	0.051	-2.351	0.019
Size	-0.107	0.041	-2.591	0.009
NDST	0.007	0.054	0.129	0.897
EV	0.095	0.055	1.746	0.081
Log-likelihood: 127.986			Akaike kriterijum: −149.972	
Joint test on named regressors: F(5, 323) = 10.11 (0.072)				
Hausman-ov test: H = 16.988 (0.004)				

Source: Author's.

The p-value of the Joint test on named regressors is less than 10%, which means that the beta coefficients are not equal to zero, but they have an impact on the dependent variable. In other words, this means that the right variables are selected in the model. The Hausman test justifies the application of this estimator. The research results indicate the following:

- ROE has a statistically significant and negative impact on the level of leverage. This is because companies with higher profitability may rely more on retained earnings and equity financing, resulting in lower leverage.
- Hotel liquidity has a statistically significant and negative impact on the level of leverage. The availability of liquid funds provides a cushion against unforeseen financial challenges, reducing the need for external financing through debt.
- Hotel size has a statistically significant and negative impact on the level of leverage. The justification for this finding lies in the fact that larger companies may have better access to capital markets, which in turn influences their capital structure choices.
- Non-debt tax shields do not have a statistically significant and negative impact on the level of leverage. This finding indicates that hotels underutilize these non-debt tax shields. It is expected that other tax shields, such as depreciation, investment tax credits, or tax-loss carry-forwards, can influence the utilization of debt.



- Earnings volatility has a statistically significant and positive impact on the level of leverage. Several reasons can account for this result, but two stand out in particular: seasonal nature and intense competition. Hotels experience seasonal patterns in revenue due to variations in tourism and travel demand. During high seasons, they generate significant revenue, making them comfortable with leveraging their operations to finance expansion or investment projects. Hotels facing intense market competition may utilize debt to fund renovations, upgrades, or marketing campaigns to maintain or improve their market position during periods of revenue volatility.

CONCLUSION

The paper examined the influence of capital structure determinants on hotels operating in the Republic of Serbia. The research was based on the theoretical foundations of the Pecking Order Hypothesis and the Static Trade-off Model. The study was conducted on a sample of 37 hotels operating in the Republic of Serbia from 2012 to 2022. The findings are consistent with expectations, with one exception related to the impact of non-debt tax shields. This finding suggests that hotels underutilize these tax benefits. Therefore, it is essential to highlight the potential for their application. Tax-loss carry-forwards allow hotels, to offset current or future taxable income with past losses. When a hotel incurs losses in one year, it can carry those losses forward to offset future profits, thereby reducing its tax liability in profitable years. This reduced tax burden leaves more funds available for debt service or other operational needs. Utilizing tax-loss carry-forwards can improve a hotel's financial position, making it more creditworthy in the eyes of lenders. When a hotel has the ability to carry forward tax losses and reduce taxable income, it enhances its cash flow and financial stability. This improved financial standing can lead to increased borrowing capacity and access to debt financing on favourable terms. Tax-loss carry-forwards can positively impact a hotel's cash flow by reducing its tax expenses. With lower tax obligations, the hotel has more funds available for investment, debt repayment, or other growth initiatives. The availability of tax-loss carry-forwards may incentivize hotels to make long-term investments and undertake projects that may initially result in losses. Knowing that these losses can be carried forward and used to offset future taxable income encourages hotels to take on riskier but potentially rewarding ventures. Tax-loss carry-forwards act as a risk management tool by providing a financial cushion during challenging times.

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