

Determinants of Capital Structure in the Hospitality Industry: Empirical Evidence

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Received: August 7, 2024

Accepted: September 18, 2024

Online Published: October 19, 2024

doi:10.5539/ijbm.v19n6p188

URL: <https://doi.org/10.5539/ijbm.v19n6p188>

Abstract

This paper studies the determinants of hotel SMEs' capital structure using the theoretical framework, and the leading indicators suggested by the Trade-off and Peeking Order theories.

We collected financial information from the Bureau Van Dijk database, observing a ten-year time horizon (2010 to 2019 included). The companies were selected based on the indication in paragraph 3, and all fell into the category of SMEs according to the European Commission criteria.

Based on the accounting information, we calculated the dependent variables (Total Debt, Long-Term Debt, and Short-Term Debt) and the independent variables (Profitability, Tangibility of Assets, Growth, Size, and Age).

For our analysis, we first used a panel data methodology, developing the least squares regressions (POLS) and the fixed effects models (FEM) and then, based on the results, we chose the fixed effects model (FEM) as it was more significant. Subsequently, we tested the hypotheses of the two theories (Trade-Off and Pecking Order) with our analysis model.

The results highlighted that profitability, asset tangibility and size are the most significant variables in explaining the behaviour of hotel SMEs.

Keywords: capital structure, regression, leverage, hotel industry, SMEs

1. Introduction

Starting from the seminal paper of Modigliani and Miller (1958), the literature on firms' capital structures has progressively developed, producing various explanatory theories of firms' financial behaviour and numerous empirical studies focused, depending on the case, on firms of different sizes, in other sectors, and various geographical areas (Aggarwal, 1981; Jensen, 1986; Harris & Raviv, 1991; Berger & Udell, 1998; Fama & French, 2002; Cassar & Holmes, 2003; Frank & Goyal, 2009; among others).

In the briefly outlined context, this study investigates the capital structure of Italian hotel SMEs.

We focused only on SMEs because most Italian hotel companies are small and medium-sized (Mueller and Sensini, 2021), unlike those of other European countries (e.g., France and Spain).

Furthermore, in line with the literature (Hall et al., 2004; Chen et al., 2019; Chalmers et al., 2020), we decided to study only the hotel sector, following the literature to avoid the possible errors determined by the analysis of companies belonging to different industries.

From this perspective, hotel companies' peculiarities can significantly influence their financial behaviour. Seasonality, geographical location, and some structural and functional characteristics of these companies make the study of them particularly interesting.

Some scholars (Lee & Qu, 2011; Devesa & Esteban, 2011; Hua et al., 2012; Bakhsh & Aggarwal, 2024) have highlighted that these companies have high fixed costs and financial requirements independent of production volumes and sales. Other scholars (Dalbor & Upneja, 2004; Tang & Jang, 2007) have shown that these assets can nevertheless represent an essential guarantee for creditors, reducing the problems of information asymmetry and, consequently, the risk of financial distress (Williams et al., 2016; Shan & Vazquez, 2017).

Other scholars (Elgonemy, 2002; Devesa & Esteban, 2011; Hua et al., 2012) have highlighted that these companies have inconsistent cash flows over time and greater volatility of profits due to the variability of demand and the intermediation channel (direct and indirect).

From this perspective, this paper aims to analyse the determinants of the capital structure of SMEs in the hotel sector, using a sample of Italian hotel companies over a ten-year time horizon (2010-2019).

Therefore, this study aims to enrich the literature that has focused on this topic (Sheel, A., 1994; Dalbor and Upneja, 2004; Madan, 2007; Karadeniz et al., 2009; Devesa & Esteban, 2011; Farcnik et al., 2015; Pacheco and Tavares, 2017; Botta, 2018; Sikveland et al., 2022; among others).

The paper is organized as follows: The next section contains the literature review. The third section presents the methodology, data, and variables used, while the fourth includes the analysis and discussion of the results. Finally, the last section contains the concluding remarks.

2. Literature Review

2.1 Capital Structure Theory

The first theories on capital structure (Modigliani and Miller 1958, 1963) have aroused great interest among scholars, leading to several theories and numerous empirical contributions over time.

The initial studies and the literature developed in the following decades have focused mainly on large firms (Harris & Raviv, 1991; Rajan & Zingales, 1995; among others), hypothesizing, among other things, that the corporate financial structure was independent of the sector's characteristics.

Towards the end of the last century, however, the literature has progressively shifted its attention to the capital structure of small and medium-sized enterprises, highlighting that the results of empirical research referring to large firms cannot be generalised and accepted also for SMEs (Berger & Udell, 1998; Mannetta et al, 2015; Sensini, 2017; Chalmers et al., 2018; Diaz E., Vicente, R.L., 2020; Carmona et al., 2024).

Similarly, the literature has highlighted that the financial structure of firms is often affected by the sector's characteristics. Therefore, empirical research referring to a specific industry could lead to entirely or partially different results in another sector (Farcnik D. et al. 2015; Diaz et al., 2014; Chalmers et al., 2019; Sensini, 2020; Amendola et al., 2021; Chen & Zhang, 2023; Fernandez & Sanchez, 2023).

Supply and demand, as well as a company's structural and functional characteristics, significantly influence the operating cycle of companies in different sectors and, sometimes, even those in the same industry (Mannetta et al., 2013; Campos et al., 2014; Mueller & Sensini, 2021; Carvalho & Suarez, 2024).

Starting from this approach, the theories developed by the most suitable theory to explain the financial behaviour of companies are the trade-off theory (TO), the pecking order theory (PO) (Watson and Wilson, 2002; Sogorb-Mira, 2008; Hughes et al., 2013; Mueller et al., 2019), and the market timing theory (Baker & Wurgler, 2002; Ivanov & Vicente, 2019; Kumar et al., 2019).

The first framework, the trade-off (TO), highlights that the tax variable, bankruptcy costs and agency costs influence the capital structure. In this perspective, this theory assumes an optimal capital structure, suggesting that firms prefer to use external financial resources until leverage reaches an optimal level (Jensen & Meckling, 1976; Cassar & Holmes, 2003; Khan & Shan, 2018). However, according to some authors (Myers, 1984), the level of debt is also conditioned by the costs of possible financial distress (Novak et al., 2018; Alves & Durand, 2020a; Diaz & Contreras, 2021; Chen & Zhang, 2023).

The second framework, the pecking order (PO), highlights that firms' financial behaviour is based on a hierarchical order conditioned by information asymmetry between owners/managers and investors (Alvarez et al., 2019). Therefore, to meet their financial needs, firms first use internal resources and then debt or the issuance of new shares (Myers, 1984; Rajan & Zingales, 1995).

The third framework, market timing (MT), highlights that the capital structure evolves as the cumulative result of previous attempts to time the stock market. This theory suggests that a company issue shares when the price/book ratio is high and buys back shares when they have a low market value. In this view, companies with high (low) leverage raised capital when their share prices were low (high) compared to their book values.

The third framework is not applicable in our study because the examined SMEs aren't listed on the stock exchange. Therefore, we will refer exclusively to the trade-off theory (TO) and the pecking order theory (PO) in the following.

2.2 Components of Capital Structure: Dependant Variables

The components of the capital structure are short-term debt (STD), long-term debt (LTD), total debt (TD) and liquidity (LIQ). Short-term debt (STD) refers to debts maturing within one year, such as short-term bank loans, trade payables, income taxes, etc.

Long-term debt (LTD) refers to debts maturing beyond one year, such as mortgages, bonds, etc.

Total debt (TD) is the sum of the two previous components, namely STD and LTD.

Our analysis includes STD and LTD to capture any possible substitution between debt of different maturities. This approach is consistent with SMEs' peculiar characteristics and financial constraints. In fact, for these companies, bank products represent the primary source of financing. Otherwise, other financial instruments offered on the market, such as shares, debt securities, etc., are used residually.

Thus, the lack of adequate access to finance produces significant financial constraints, often resulting in short-term debt instead of long-term debt (Chen et al., 2014; Diaz et al., 2014; Chalmers et al., 2019)

2.3 Determinants of Capital Structure: Independent Variables

The theoretical framework suggested by the trade-off theory (TO) and the pecking order theory (PO) allows us to understand the capital structure and, therefore, the financial choices of SMEs (Watson & Wilson, 2002; Fama & French, 2002; Hovakimian & Li, 2011; Ivanov & Vicente, 2019). In this perspective, starting from the empirical results of previous research (Aggarwal, 1981; Abor & Biekpe, 2009; Frank & Goyal, 2009; Ajanthan, 2013; Sanchez & Sensini, 2017), this study focuses on the relationship between debts (STD, LTD and TD) and the main explanatory variables suggested by the literature: profitability, asset structure, growth (of assets and turnover), size and age (Bakhash & Aggarwal, 2024).

Profitability

The trade-off framework suggests profitable firms can attract external financing more remarkably (Jang et al. 2008; Diaz et al., 2014; Mannetta et al., 2015) because they are less likely to fail. Therefore, these firms prefer to use debt to exploit the benefits of the interest tax shield (Modigliani and Miller, 1963).

In contrast, the Pecking Order framework suggests that firms first finance investments following a hierarchical order favouring internal financial resources. Therefore, these firms prefer to use accumulated equity first, then debt and, as a last resort, newly issued equity (Jhan & Shan, 2018).

Therefore, the two capital structure theories have contradictory predictions on the relationship between profitability and debt. Therefore, following both theories, we can formulate the following two research hypotheses:

H1a - Profitability is positively related to Debt (Trade-Off).

H1b - Profitability is negatively associated with Debt (Pecking Order).

Assets Structure

Asset characteristics are another factor that can significantly influence capital structure (Friend and Lang, 1988; Tang and Jang, 2007; Mannetta et al., 2017; Chalmers et al., 2019; Aggarwal and Kumar, 2023). The presence of tangible assets on the balance sheet represents a guarantee for the providers of financial resources and, at the same time, reduces the risk of bankruptcy. In this perspective, although the motivations are partially different, the framework of both theories (TO and PO) suggests a positive relationship between asset structure and debt (Harris & Raviv, 1991; Jimenez et al., 2006; Bakhash & Aggarwal, 2024). Therefore, asset structure should be positively related to the level of debt. This circumstance determines that firms with more significant tangible assets should have a positive relationship with long-term debt, as these firms can provide more significant guarantees. Conversely, firms with a less tangible asset structure may exhibit a less intense relationship due to the substitution effect of long-term debt with short-term debt (Alvarez & Lopez, 2021).

Therefore, our research hypothesis, consistent with both theories, is as follows:

H2 - Assets Structure (tangibility) is positively related to Debt (Trade-Off; Pecking Order)

Growth

Growth is increased assets and (or) turnover (Michaelas et al., 1999; Poornima & Manokaran, 2012; Ivanov & Vicente, 2017).

The TO framework suggests a negative relationship between growth and debt (Myers, 1977; Elgonemy, 2002). Growing firms have more investment opportunities, which may increase agency problems between managers

and creditors.

On the contrary, the PO framework suggests a positive relationship between growth and debt, as growing firms may not have sufficient internal capital to finance future growth.

Therefore, the two frameworks provide contradictory predictions regarding the relationship under examination.

Therefore, following both theories, we can formulate the following two research hypotheses:

H3a - Growth is negatively related to Debt (Trade-Off).

H3b - Growth is positively associated with Debt (Pecking Order).

Firm Size

According to the established literature (Titman and Wessels, 1988; Sheel, 1994; Tang and Jang, 2007; Chen et al., 2019), there is a problem of information asymmetry between borrowers (e.g., companies) and lenders (e.g., banks). This information asymmetry increases as the company size decreases. In this perspective, small size often entails the mandatory use of short-term debt, while larger size favours the use of medium and long-term debt (Sanchez & Sensini, 2017).

Both theories suggest a positive relationship between size and debt (Michaelas et al., 1999; Frank & Goyal, 2003). Therefore, following both theories, we can formulate the following research hypotheses:

H4 - Size is positively related to Debt.

Age

The trade-off framework suggests that older firms have a better reputation and, therefore, can obtain low-cost loans. This circumstance determines a relationship between firm age and debt.

In contrast, the pecking order framework suggests that older firms can rely on their ability to generate profits and, therefore, have less need to resort to debt. Younger firms, conversely, have a greater need to borrow to finance their development (Michaelas et al., 1999; Mac an Bhaird & Lucey, 2010; Diaz et al., 2014; Vicente & Ivanov, 2017; Williams et al., 2017).

On this point, empirical research has highlighted contrasting results. Following both theories, our research hypotheses are the following:

H5a - Age is positively related to Debt (Trade-Off).

H5b - Age is negatively related to Debt (Pecking Order).

The following table summarises the hypotheses formulated for each variable considered.

Table 1. Dependent and independent variables and expect sign

Hypothesis	Independent Variables	Dependent Variables	Expected Sign
H1a	Profitability	D	+
H1b		D	-
H2	Assets Structure	D	+
(TO; PO)			+
H3a (TO)	Growth	D	-
H3b (PO)		D	+
H4	Size	D	+
(TO; PO)			
H5a (TO)	Age	D	+
H5b (PO)		D	-

3. Methodology, Data and Variables

This study focuses on the relationship between the main determinants of capital structure and debt of hotel SMEs. The financial information for the analysis was collected from the Bureau Van Dijk (BVD) database and covered ten years, from 2010 to 2019 (inclusive). We excluded the years 2020 and 2021 because these data were significantly affected by the health emergency related to COVID-19.

The companies were selected as follows: First, they had to fall within the definition of SME provided by the European Commission. Second, their balance sheets had to be available for the analysed period. Third, we

excluded companies that were part of groups. Finally, we excluded companies for which it was impossible to calculate all the indicators considered for this analysis. This setting allowed us to have a complete panel.

The final sample includes 182 companies and is represented by small (93) and medium-sized (89) companies.

To assess the capital structure, we calculated the dependent and independent variables of interest using the accounting information from the balance sheets. We used variables consistent with the primary reference literature (Van der Wijst and Thurik, 1993; Faulkender and Petersen, 2006; Faulkender and Petersen, 2006; Degryse et al., 2012; Diaz et al., 2014; Chen et al., 2019; Sensini, 2020; Bakhash and Aggarwal, 2024; among others). Table 2 specifies the determination criteria of all the variables used.

Table 2. Dependent and independent variables

Dependent Variables		
TD	Total debt	Total Liabilities/Total Assets
MLD	Medium and long-term debt	Non-current Liabilities/Total Assets
STD	Short-term debt	Current Liabilities/Total Assets
Independent Variables		
PROF	Profitability	EBIT/Total Assets
AS	Assets Structure	Tangible Assets/Total Assets
AGR	Assets Growth	$(\text{Total Assets}_{i,t} - \text{total Assets}_{i,t-1})/\text{Total Assets}_{i,t-1}$
TGR	Turnover Growth	$(\text{Turnover}_{i,t} - \text{Turnover}_{i,t-1})/\text{Turnover}_{i,t-1}$
SIZE	Size	Number of years in activity
AGE	Firm age	Year of data – Year of foundation

We divided the trend of the variables into two periods, the first immediately following the financial crisis that began in 2008 (I, 2010-2014) and the second (2015-2020), characterised by an economic recovery (Aggarwal and Kumar, 2023; Della Porta et al., 2016; Williams et al., 2017; Alves and Durand, 2020b; Diaz and Vicente, 2020).

Table 3. Variables (Mean and Standard Deviation)

Variables	I	II	SD
TD	0.58	0.64	0.27
LTD	0.33	0.36	0.23
STD	0.26	0.31	0.29
PROF (%)	4.04	3.18	5.67
TAS	0.72	0.68	6.28
AGR (%)	1.22	0.14	11.07
TGR (%)	3.11	0.05	12.34
SIZE	8.91	9.45	1.13
AGE	28.11	25.18	14.21

The data in table 3 show that companies experienced higher indebtedness, lower profitability, and lower growth immediately following the 2008 financial crisis. This situation improves in the second period analyzed (2015-2020).

Table 4 reports the correlation coefficients between the independent variables.

Table 4. Correlation matrix (independent variables)

Variables	PROF	TAS	AGR	TGR	SIZE	AGE
PROF	-	-0.141**	-0.018	0.273**	-0.252**	-0.041
TAS		-	-0.085*	0.041	0.091*	-0.187**
AGR			-	-0.014	0.012	-0.026
TGR				-	0.006	0.011
SIZE					-	0.214**
AGE						-

Note. Stars indicate statistical significance respectively at: ***1%; ** 5%; * 10%.

The correlation coefficients between the independent variables do not present significant collinearity problems, as can be easily deduced from Table 4.

With this premise, we applied a panel data methodology, using least squares models (POLS) and fixed effects (FEM) to test the research hypotheses. Therefore, we developed the following regressions for all dependent variables (TD, LTD and STD):

$$Y_{it} = \beta_1 + \beta_2 PERF_{it} + \beta_3 TAS_{it} + \beta_4 AGR_{it} + \beta_5 TGR_{it} + \beta_6 SIZE_{it} + \beta_7 AGE_{it} + \epsilon_{it}$$

Where Y_{it} is a dependent variable, β is the coefficient to estimate, X_{it} is the independent variable, and ϵ_{it} is the error describing the non-explained effects on Y_{it} .

4. Results and Discussion

As a preliminary step, we developed regressions using the least squares models (POLS) and fixed effects (FEM). This approach allowed us to identify the model with the most significant explanatory power. The results are shown in Table 5.

Table 5. POLS and FEM

Model	POLS			FEM		
	TD	LTD	STD	TD	LTD	STD
PROF	-0.991*	-0.653	-0.592	-1.029***	-0.944*	-0.081
TAS	-0.154**	0.291***	-0.451***	0.057	0.277*	-0.155
AGR	0.001	0.008	-0.007	0.002	0.002	0.008
TGR	0.024	0.008	0.015	0.035**	0.012	0.016
SIZE	0.018	0.011	-0.023	0.011	-0.119**	-0.082*
AGE	-0.002	0.012	-0.006	-0.009**	-0.006	0.011

We performed the Wald test to check which model is more efficient. The results show that the FEM model is more significant (TD: 18.784***; LTD: 7.466***; STD: 14.015***).

In line with the results obtained, we applied the FEM model to the variables that were significant in the previous estimation. Table 6 shows the results.

Table 6. Regression FEM

Variables	TD	LTD	STD
PROF	-1.1285***	-0.7376**	NR
TAS	NR	0.0373***	NR
AGR	NR	NR	NR
TGR	0.0378***	NR	NR
SIZE	NR	0.0854*	-0.342*
AGE	-0.323*	NR	NR
R ²	0.87	0.72	0.77
F	58.24	18.19	25.84

Note. Stars indicate statistical significance respectively at: ***1%; ** 5%; * 10%; NR: Not Relevant.

The results show the following.

Profitability has a negative relationship with total, medium, and long-term debt, while the relationship with short-term debt is insignificant. The results show that profitable SMEs prefer to use profits to finance investments.

The results confirm the pecking order framework hypothesis (Van der Wijst and Thurik 1993; Michaelas et al. 1999; Sogorb-Mira 2005) and are consistent with previous empirical studies on hotel firms (Ajanthan, 2013; Matias et al., 2018; Alvarez and Lopez, 2021).

The relationship between asset structure and debt is statistically significant only for medium- and long-term debt. These results suggest that firms with more excellent tangible fixed assets have easier access to medium- and long-term financing. In this perspective, the more significant guarantees offered to creditors reduce adverse selection problems (Stiglitz and Weiss, 1986).

They are consistent with both theories analysed and confirmed by previous empirical research in the hotel sector (Aggarwal and Kumar, 2023; Dalbor and Upneja; 2004, Serrasqueiro and Nunes, 2014; Matias et al., 2018, Mueller and Sensini, 2020).

Growth does not show statistically significant relationships. However, it is interesting to highlight that the turnover growth rate is significantly related to total debt, suggesting that SMEs with a higher revenue growth rate have more possibilities to finance growth with debt. The empirical results are partially in line with the pecking order framework and with some previous studies on hotel activities (Dalbor and Upneja, 2004; Tang and Jang, 2007, Alvarez and Lopez, 2021). However, the results differ from those of other research (Serrasqueiro and Nunes, 2014; Bakhsh and Aggarwal, 2024).

Size shows a positive and significant relationship with medium and long-term debt and a negative and essential relationship with short-term debt. On the contrary, size has an insignificant relationship with total debt.

Overall, the results show that SMEs use more short-term debt than medium and long-term debt, confirming the financial constraints that characterise these companies and the debt substitution hypotheses previously advanced (Banerjee, 2014; Diaz et al., 2014; Chen et al., 2019; Sensini, 2020).

Finally, age has a significant and negative relationship only with total debt. In the other cases, the relationship is not relevant. The results are consistent with the pecking framework and some previous studies on hotel firms (Aggarwal and Kumar, 2023; Pacheco and Tavaréz, 2017; Matias et al., 2018, Alvarez and Lopez, 2021).

5. Concluding Remarks

This paper studies the determinants of hotel SMEs' capital structure using the theoretical framework, and the leading indicators suggested by the Trade-off and Peeking Order theories.

We collected financial information from the Bureau Van Dijk database, observing a ten-year time horizon (2010 to 2019 included). The companies were selected based on the indication in paragraph 3, and all fell into the category of SMEs according to the European Commission criteria.

Based on the accounting information, we calculated the dependent variables (Total Debt, Long-Term Debt, and Short-Term Debt) and the independent variables (Profitability, Tangibility of Assets, Growth, Size, and Age).

For our analysis, we first used a panel data methodology, developing the least squares regressions (POLS) and the fixed effects models (FEM) and then, based on the results, we chose the fixed effects model (FEM) as it was more significant.

Subsequently, we tested the hypotheses of the two theories (Trade-Off and Pecking Order) with our analysis model.

The results suggest that profitable SMEs use profits to finance investments, preferring them to debt.

Asset structure is statistically significant only for medium—and long-term debt. This circumstance confirms that asset tangibility facilitates firms' access to long-term financing.

Growth, although showing controversial results, shows a correlation. However, the significant correlation between revenue growth rate and total debt highlights that growing SMEs have easier access to financing.

The results related to size confirm the financial constraints of SMEs, highlighting the tendency to use short-term debt compared to medium and long-term debt.

Finally, age suggests that young firms have more difficulty in accessing credit.

The results of this research contribute to the empirical research on SMEs' financial behaviour, highlighting the

hotel sector's peculiar characteristics. From this perspective, these results can provide valuable information to hotel operators.

Authorship Contribution Statement

Novak B.: Data curation, Data Analysis, Results and Discussion, Concluding Remarks.

Sensini L.: Conceptualization, Methodology, Data Analysis, Results and Discussion; Concluding Remarks.

Informed consent

Obtained.

Ethics approval

The Publication Ethics Committee of the Canadian Center of Science and Education.

The journal and publisher adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

Provenance and peer review

Not commissioned; externally double-blind peer reviewed.

Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

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