

Debt of Hotel Companies: The Impact of Company Characteristics and Crisis Periods

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Abstract: This paper studies the financial determinants of debt of Portuguese hotel companies using the main indicators suggested by the Trade-Off and the Pecking Order theories. The main objective of this study was to analyse the determinants that most contribute to the debt of Portuguese companies in the hotel industry. The study also aimed to understand the impact of crisis periods on the debt. Since data collected refers to the period between 2005 and 2020 it also analyses the impact of the 2008 financial crisis and, more recently, the global pandemic COVID-19. The results show that debt is negatively associated with profitability and age, and is positively associated with size, growth opportunities and tangibility. These results are in line with the Pecking Order theory, ranking the choice of financing methods. We can also conclude that the way hotels finance their assets will affect their level of debt. We also evidence that debt of Portuguese hotels companies increases in periods of crisis.

Keywords: debt, hotels companies, crisis, capital structure

1. Introduction

The hospitality industry is one of the main contributors to economic development, wealth and job creation in Portugal, and its importance has increased over the years. In this study, companies in the hospitality sector are analysed due to the fact that it is an industry that has suffered greatly from the current pandemic of COVID-19, because they were forced to stop working, consequently going through a period of no revenues and the workers layoff. Therefore, it is expected that debt increased, either by new borrowings to finance older responsibilities, or by having adhered to moratorium programs of previous financing. The aim is to understand what factors have affected the debt of Portuguese companies in this industry. Thus, the main objective of this study is to understand which factors affect the debt of Portuguese firms in the hotel industry between 2005 and 2020.

This study has a relevant contribution to the literature. It investigates the debt of Portuguese companies in the hotel industry over a long period of time, which allows the inclusion of the analysis of financial crisis and the COVID-19 pandemic periods. Thus, it adds information to the literature of the hotel industry, distinguished by the possibility of comparing the companies' debt in periods with and without financial and economic crisis.

This study provided evidence that debt is negatively associated with profitability and age, and is positively associated with size, growth opportunities and tangibility. These results are in accordance with the Pecking Order theory. However, the main conclusion of this study is that the debt of hotel companies in Portugal increases in periods of crisis.

The work is organized in four sections. In the first section is the literature review that addresses the main determinants of debt. Next, the databases, the methodology and the variables used are presented. In section three is the empirical study and the paper ends with the conclusion.

2. Literature review

2.1 Debt

There are several theories of capital structure, and Modigliani and Miller (1958) starts with the idea that debt has no impact on firm value. Later, Modigliani and Miller (1963) present the advantages of debt associated with the advantages by tax benefits of debt, with interest being tax deductible. In this sense, if assets are fully financed by debt, the value of the firm will be maximized.

In the Trade-Off theory, Myers (1984) argues that firms tend to define an optimal capital structure that tends to vary with their intrinsic characteristics. At the optimal level of debt, tax benefits, agency costs and financial insolvency costs are in equilibrium. In this case, firms have a target capital structure that maximizes their value. When debt is higher than the optimal level, agency costs and insolvency costs increase to levels higher than the advantages obtained from tax benefits associated with the deductibility of interest for tax purposes. As the debt level increases, the risk for shareholders and creditors increases, which is related with the higher risk of bankruptcy and an increase of agency costs. If debt is below the optimal level, agency costs and insolvency costs are lower than the tax benefits associated with the deductibility of interest.

Regarding the Agency theory, the separation of powers between management and ownership, with the owners delegating to the management the administration of the company. Jensen and Meckling (1976) point out that the principal (the owner) hires the agent (the management) to make decisions in the company. However, the agent has its own interests that may not coincide with the interests of the principal, so that conflicts of interest arise (Jensen and Meckling, 1976). As such, several agency problems may arise in a company. The agency problems between shareholders and managers arise because managers haven't the same objectives than shareholders, so they haven't incentives to act according to the shareholders' interest and maximizing the company's value (Jensen and Meckling, 1976).

The Pecking Order theory is based on a negative relationship between the firm's performance and its financing decision. Myers (1984) and Myers and Majluf (1984) argue that capital structure of a company does not translate into the optimal level of debt that maximizes its value, but rather results from several successive optimal decisions, among the sources of financing in a hierarchical manner, aiming to reduce the costs caused by information asymmetry. This approach argues that firms' investment opportunities are firstly financed by internally generated funds, with self-financing being a primary resource. Then, firms should finance themselves by issuing debt, which has a lower level of risk. At the end, firms choose the source of financing that has more information costs, the issue of new equity.

Finally, considering the conflicts of interest and the information asymmetry between management and shareholders, the Signalling theory proposed by Ross (1977), in which the choice of the debt/equity ratio is independent of the optimal concept and is represented by the willingness of a company to send information to investors. Therefore, the provision of information about management decisions to markets allow the reduction of information asymmetry for investors. Thus, effective communication and proper dissemination of information induces better knowledge of the company and its performance. Myers and Majluf (1984) refer that management resists to issue equity when they believe that the company's value is undervalued and consequently, investors tend to consider issuing shares as a bad sign, assuming that managers only offer shares to the public if they have a fair or overvalued price.

2.2 The hotel industry in Portugal

The main activity in a hotel is the provision of accommodation and other support services. Companies in hospitality industry have several activities that range from lodging, food, security, entertainment, and other activities related to the guests' well-being (Bresciani et al., 2015).

The hospitality industry is characterized mainly by its intangibility due to the provision of services not embodied in a physical asset. This industry is further characterized by being labour intensive, given that a range of human capital is required for service functionality. Finally, its activity requires a building that allows the provision of rooms and other related services. Therefore, a large investment in fixed assets is necessary. Sometimes, hotel companies use operational leasing on equipment and buildings (Koh and Jang, 2009).

Note that Portugal has been recognized worldwide in terms of tourism, through the numerous awards and distinctions received every year by the international community as the *World Travel Award*, among other distinctive awards (Moreira, 2018).

In the last decade, this industry has experienced a considerable growth of tourists and revenues, which allows to an important driver of national economic recovery (Pacheco and Tavares, 2017). However, with the COVID-19 crisis, this was the first sector to be impacted and severely affected due to travel bans and restrictions and mobility disruptions (OMT, 2021). In addition to travel restrictions, one of the recommendations made to

tourists is to discourage unneeded travel. Additionally, it has also been noted a critical relationship between tourism activity and the spread of diseases such as COVID-19 (Hall et al. 2020; Shi and Liu, 2020), which resulted in new behaviours in relation to the practice of activities for the preservation of lives in the present and in the future.

The total number of hotels operating in Portugal has been increasing over time, but in 2020 the number of hotels decrease because of the COVID-19 pandemic that was severely felt worldwide. It has a negative impact on companies, considering the sharp decrease of more than 50% in revenues in this industry (INE, 2000 and 2021).

2.3 Relevant factors to debt in the hotel industry

There are several factors that may contribute to debt, but in this study, we only analyse financial factors, which have been widely addressed in the literature.

2.3.1 Profitability

Profitability is an important factor to understand the company's ability to generate results to meet its liabilities. Gaud et al. (2005) argue that more profitable firms are better able to meet their obligations. According to the Trade-Off theory, more profitable companies should choose more to debt to benefit from the interest tax deduction. Jang et al. (2008) suggest a positive relationship between profitability and debt because firms with a greater ability to create and maintain results have greater bargaining power and, therefore, more easily borrow from creditors. In the Signal theory, Modigliani and Miller (1963) and Ross (1977) argue for a positive relationship between profitability and debt level, because management send signals to the market that firms have good profitability prospects in future.

Instead, the Pecking Order theory assumes that firms have a hierarchical preference in the choice of financing sources. The retained earnings are used first, then third-party resources, then debt and, lastly, the issuance of new shares. Myers (1984) and Myers and Majluf (1984) predict a negative relationship between profitability and debt because companies prefer to finance with internal resources rather than through debt. More profitable firms take less debt because they prefer to finance their investments through internal financing. If these resources are not enough to finance all investment projects, firms will take on debt. More profitable firms are better able to meet their obligations (Gaud et al., 2005). Thus, it is hypothesized the following:

H1: Hotel companies with higher profitability have lower debt.

2.3.2 Business risk

Hotel companies are exposed to business risk due to their seasonal activities, economic environment and management skills (Elgonemy, 2002). Pecking Order theory states a negative relationship between risk and debt, since riskier companies are more likely to default. Therefore, risk reduces the ability of firms to finance and increases their costs (Myers, 1984). This may induce creditors to demand a higher payment (higher financial cost to the firm) for the fact that it faces a higher bankruptcy risk (Lemmon et al., 2008). Akhtar (2011) and Lemmon et al. (2008) support the conclusion that risk is negatively related to debt. Based on Trade-Off theory a negative relationship between risk and debt is expected because bankruptcy risk reduces the appetite to use debt (Matemilola et al., 2018). Agency costs and bankruptcy costs suggest that risk also influences the capital structure of companies (Harris and Raviv, 1991). The higher debt means higher agency costs and bankruptcy cost, which turns debt inadvisable because these costs are higher than the tax advantage of debt. So, higher debt induce companies to pay higher interest costs. In this way, it is expected to have lower level of debt when there is higher risk. Several empirical studies (e.g., Gaud et al., 2005; Pacheco and Tavares, 2017) conclude for a negative relationship between risk and debt. Accordingly, we state the following research hypotheses:

H2: Higher business risk of hotel companies are negatively associated with debt.

2.3.3 Size

Size may also be important to understand debt. Daskalakis and Psillaki (2008) argue that size is expected to be positively related with debt because larger firms tend to be more diversified and therefore less risky and, consequently, have a lower probability of default. Then, larger firms may be able to reduce transaction costs associated with debt. In turn, information costs are lower for larger firms, as the quality of financial information improves as the firm gets larger. Due to lower information asymmetry, larger firms have easier access to capital

markets and tend to pay lower interest rates, thus having a greater incentive to increase their indebtedness (Pacheco and Tavares, 2017). Thus, there seems to be a positive association between firm size and debt. Daskalakis and Psillaki (2008), Vieira and Novo (2010) and Serrasqueiro and Nunes (2014) show a positive relationship between debt and firm size. However, Pacheco and Tavares (2017) show that size and debt do not have a statistically significant relationship. Thus, we present the following research hypothesis:

H3: The size of hotel companies is positively associated with debt.

2.3.4 Opportunity for growth

Growth may be related to increased activities and turnover. Vieira and Novo (2010) and Miller (1977) argue that firms with higher growth rates could not optimize their investments, possibly making lenders unwilling to finance them. The Trade-Off theory suggests a negative relationship between growth opportunities and debt, so access to finance would be more limited for these firms (Jensen, 1986; Elgomy, 2002). However, Pecking Order theory predicts a positive relationship between growth opportunities and debt, because firms with higher growth rates experience more financing needs (Mueller and Sensini, 2021). Thus, if companies' ability to generate internal funds isn't enough to meet their needs, the companies will demand external sources to finance its growth (Myers, 1984; Myers and Majluf, 1984). Ramalho and Silva (2013) suggested that Portuguese companies with high growth opportunity rates prefer loans because they haven't enough internal funds and want to avoid new investors in equity. Thus, we establish the next research hypothesis:

H4: Hotel companies with higher growth opportunities are positively associated with debt.

2.3.5 Age

Regarding age, younger companies are more dependent on debt, while older companies depend on their ability to generate profits and, consequently, are less dependent on debt, following the Pecking Order theory (Bhaird and Lucey, 2010). However, Trade-off theory predicts that the older the age, the higher the firm's reputation and the lower the cost of borrowing, which indicates that there is a positive correlation between age and debt (Mueller and Sensini, 2021). Instead, according to the Pecking Order theory, firms increase their ability to retain resources throughout their life cycle, reducing borrowings to their investments (Pacheco and Tavares, 2017). Consequently, younger firms are more dependent on debt (Myers, 1984; Myers and Majluf, 1984; Bhaird and Lucey, 2010). Ramalho and Silva (2013) and Vieira and Novo (2010) found a negative relationship between the variables, with older Portuguese firms generating sufficient internal resources and not being as dependent on debt as younger firms. However, Vieira et al. (2013) found no evidence that age is statistically significant, concluding that debt is not related with corporate maturity.

In short, younger companies are more dependent on debt, while older companies depend on their ability to generate profits and, consequently, are less dependent on debt, following the Pecking Order theory (Bhaird and Lucey, 2010). Based on these assumptions, we state the following hypothesis:

H5: Older companies have lower debt.

2.3.6 Asset tangibility

Tangibility is, according to Trade-off theory, positively related with debt. Companies with higher tangible asset value provide higher guarantees reducing agency costs and information asymmetry (Jensen and Meckling, 1976). By the Pecking Order theory, it is suggested a positive association, because companies with higher collateral induce a lower risk for creditors who will lend more at lower costs (Myers and Majluf, 1984). Vieira et al. (2013) show that the asset value positively influences debt, concluding that the higher the asset value, the higher the credit granted. Thus, since the assets are accepted as collateral, it is expected a positive relationship between asset tangibility and debt (Pacheco and Tavares, 2017). However, Mueller and Sensini (2021) find no significant relationship between asset tangibility and debt, while Serrasqueiro and Nunes (2011) and Vieira and Novo (2010) evidence a negative relationship between tangibility and debt. Thus, we establish the following hypothesis:

H6: Asset tangibility positively affects debt of Portuguese hotel companies.

2.3.7 Financial and economic crises

Portugal, like other countries around the world, has already experienced periods of economic and financial crisis. One of the most recent was the 2008 world financial crisis, with a greater impact in Portugal between 2011 and

2014. Nowadays, the new pandemic COVID-19 have impact on country national economy which led to an economic crisis. In comparison with other crises, COVID-19 highlights the unexpected nature of the shock.

The biggest difference is that the COVID-19 influence the entire economy in general, leading to the closure of many institutions and stores, which negatively impact on demand for many services and products, particularly in tourism and hotel industry. However, the financial crisis had a greater focus on financial creditors, which had an impact on the liquidity of the financial system. With the credit crunch and the sovereign debt crisis, Portugal requested a financial rescue from European Union, International Monetary Fund and European Central Bank. Ribeiro (2016) studied 393 companies in the Portuguese hotel industry and concluded that debt increased between 2010 and 2014.

The present COVID-19 pandemic induced governments worldwide to close a large part of their economies with the aim of containing the spread of virus, which could lead to a liquidity crisis for most companies (Acharya and Steffen, 2020). Many companies were forced to stop operating for some time, or operating with various tight safety rules imposed by the government, which also led to layoffs of their workers. Also, the hospitality industry seems to be one of the most affected by this pandemic. Since the borders between countries were closed and the circulation between municipalities was restricted because the risk of virus transmission, travels was restricted and travel agencies, restaurants, hotels, and other activities linked to the industry had to close temporarily or have restricted activities.

The increase of demand volatility in these periods induce an increase in corporate risk, which may lead to decrease debt because higher probability of bankruptcy and default. However, it is also expected the companies increase its debt because of governmental programs that facilitates loans to support the lower operational activity of companies.

World Tourism Organization report a great decrease of 74% in the number of international tourists and estimated not only a loss of USD 1.3 trillion in revenues, but also more than 100 million tourism jobs near unemployment (UNWTO, 2021). In Portugal, the number of international tourists to global destinations decreased a lot compared to the previous year (INE, 2020 and 2021). The overnight stays in tourist accommodation between March 2019 and March 2020 decreased about 58,5% (Daniel and Fernandes, 2020). Based on these observations, it is studied the impact of these crisis periods on the hotel company's debt by analysing the following research hypothesis:

H7: The debt of hotel companies increases in periods of crisis.

3. Methodology and data

The main objective of this study is to analyse the determinants of debt in Portuguese hotels companies, with a particular emphasis in periods of economic and financial crisis.

About Portuguese companies in the hotel industry were collected from SABI database for 16 years, from 2005 to 2020. The companies selected are the one classified under the Economic Activity Code 551, which can include hotels, apartment-hotels, and guesthouses. The time horizon allows a broader analysis, including the 2008 financial crisis and COVID-19 economic crisis.

The work follows a multivariate linear regression analysis with the Ordinary Least Squares (OLS) methodology to study the impact of financial variables on debt. Since there is a need to control our results by the number of hotels managed or controlled by each company, we use the variable NHOTEL. Our final database have 9842 observations from 1.005 companies with 1.050 hotels on year 2020 (1.149 hotels in 2019). With the variables are defined in Table 1, regression model is specified as follows:

$$DEBT_{i,t} = \beta_{0i,t} + \beta_1.NHOTEL_{i,t} + \beta_2.ROA_{i,t} + \beta_3.SIZE_{i,t} + \beta_4.AGE_{i,t} + \beta_5.RISK_{i,t} + \beta_6.GROWTH_{i,t} + \beta_7.TANG_{i,t} + \beta_8.CRISIS_{i,t} + \mu_{i,t} \quad [1]$$

Table 1: Variable definitions

Variable	Description	Source
DEBT _{i,t}	Ratio between total debt and total net assets of company _i in period _t .	SABI

Variable	Description	Source
ROA _{i,t}	Ratio of operating income by total net assets of company _i in period _t .	SABI
SIZE _{i,t}	Logarithm of company _i sales in period _t .	SABI
AGE _{i,t}	Logarithm of the number of years from the beginning to company _i in period _t .	SABI
RISK _{i,t}	Standard deviation of historical operating income of company _i in the last three years prior to period _t (based on Matemilola et al., 2018).	SABI
GROWTH _{i,t}	Growth rate of company _i sales in period _t (based on Mueller, et al., 2021).	SABI
TANG _{i,t}	Ratio between fixed assets and total net assets of company _i in period _t (based on Mueller, et al., 2021).	SABI
CRISIS _{i,t}	Dummy variable that takes the value 1 in the years related to the financial crisis (years 2011 to 2014) and to the economic crisis (year 2020), and 0 otherwise.	Authors' calculations
NHOTEL _{i,t}	Average number of hotels owned by company _i in period _t .	National Tourism Register (RNT)

4. Analysis and discussion

This section analyse the data in order to obtain empirical evidence on the financial issues that affect corporate debt in the hotel industry.

4.1 Descriptive statistics

The analysis starts with descriptive statistics. Table 2 shows that on average each company operates 1.28 hotels, and the maximum number of hotels operated by a company is 26. It is also noted that 36.1% of the observations refer to periods of economic and financial crisis.

Table 2: Descriptive statistics

Variable	Mean	Median	Standard deviation	Min.	Max.
DEBT	53,4	55,1	26,7	0	100
CRISIS	0,361	0	0,48	0	1
ROA	0,0401	0,0245	0,129	-1,07	1,97
RISK	5,46	1,3	29,2	0	1070
SIZE	5,88	5,87	0,677	2,15	8,03
AGE	26	22	17,2	1	124
GROWTH	1,11	0,0382	44,6	-1	3100
TANG	0,608	0,678	0,299	0	1
NHOTEL	1,28	1	1,43	1	26

Source: Authors' elaboration.

Note: Variables defined in Table 1.

Operating profitability averages 4.01% of net assets and has a standard deviation of 12.9%. The results show that the average debt ratio is 53.4% with a standard deviation of 26.7%, which suggests a high company debt. The companies' risk is, on average, 5.46, that is relatively low. The standard deviation of risk is high, showing a fluctuation of 29.2 between companies, underlining the existence of outliers. The average size is 5.88. The companies average age is 26 years, the oldest with 124 and the youngest with only 1 year of activity. Sales growth has an average of 1.11 and a standard deviation of 44.6. The maximum value seems that growth is being influenced by some companies with relatively extreme values. Finally, the mean of fixed assets variable is about 60.8% of total net assets, with a standard deviation of 29.9%.

4.2 Correlation matrix

The correlation matrix is presented in Table 3. The correlation between the financial variables isn't very strong, with the strongest correlation of 32,1% between size and number of hotels as expected. The next strongest correlation is 17,3% between asset tangibility and debt.

Table 3: Correlation matrix

DEBT	CRISIS	NHOTEL	ROA	RISK	SIZE	AGE	GROWTH	TANG	
1	0,031	0,020	-0,17	0,015	0,067	-0,267	0,026	0,173	DEBT
	1	-0,006	-0,191	0,002	-0,099	0,018	0,002	0,011	CRISIS
		1	0,004	-0,004	0,321	0,011	-0,002	-0,079	NHOTEL
			1	0,006	0,143	-0,043	-0,004	-0,248	ROA
				1	-0,021	-0,036	0,003	0,003	RISK
					1	0,094	0,015	-0,013	SIZE
						1	-0,007	-0,049	AGE
							1	0,005	GROWTH
								1	TANG

Source: Authors' elaboration.

Note: Variables defined in Table 1.

4.3 Multivariate analysis

Based on a sample of 9840 observations, Ordinary Least Squares (OLS) regressions were estimated, whose heteroskedasticity-adjusted results are presented in Table 4. The coefficients show that the variables used explain about 14% of the hotel company's debt. The results allow us to understand the impact of financial factors in the debt of the Portuguese hotel companies.

Based only on the statistically significant coefficients of Table 3, the results in model (1) evidence that ROA is negatively related to debt, as the results of Mueller et al. (2021), Pacheco and Tavares (2017) and Matias et al. (2018). Because it isn't statistically significant, risk isn't a relevant factor to determine corporate debt.

The variable size is positively related with debt, as expected, and support studies like Matias et al. (2018), Matemilola et al. (2018), Daskalakis et al. (2008), Vieira et al. (2013), Serrasqueiro and Nunes (2014), and Vieira and Novo (2010). In this sense, there is statistical evidence that the larger the size of a hotel company, the higher its level of debt. Additionally, the variable AGE relates negatively with debt, which support the results of Mueller et al. (2021), Pacheco and Tavares (2017), Matias et al. (2018), and Vieira et al. (2010). There is statistical evidence to state that the older the company, the lower its level of debt.

Table 4: Debt determinants of hotel companies

	(1)	(2)
Constant	55,537 ***	54,584 ***
	(2,518)	(2,544)
ROA	-30,337 ***	-30,542 ***
	(1,801)	-(1,855)
RISK	0,0122	-0,013
	(0,009)	-(0,010)
SIZE	4,339 ***	4,472 ***
	(0,401)	-(0,402)
AGE	-10,657 ***	-10,716 ***
	(0,329)	-(0,330)
GROWTH	0,0125 ***	0,013 ***

	(1)	(2)
	(0,003)	-(0,003)
TANG	9,997 ***	9,898 ***
	(0,877)	-(0,874)
NHOTEL	-0,071	-0,093
	(0,153)	(0,151)
CRISIS		1,257 **
		(0,525)
n	9842	9842
Adjusted R ²	0,141	0,142
F(n,k)	231,383	204,994
F(p-value)	<0,010	<0,010

Source: Authors' elaboration.

Note: This table presents the results of the OLS estimation corrected by the heteroscedasticity detected through White's test. The dependent variable is Debt. The coefficients are in the same line of variable name and in brackets are the standard deviation of the coefficient estimation. Variables defined in Table 1. ***, ** and * are statistical significance at 1%, 5% and 10%, respectively.

The GROWTH variable is, as expected, statistically positively related with debt, which corroborates the study of Mueller et al. (2021). There is statistical evidence that the higher the growth opportunities for Portuguese hotel companies, the higher their level of debt. Then, the TANG variable is positively related with debt, which is in line with the results of Matias et al. (2018) and Matemilola et al. (2018). Thus, it is evidenced that the higher the asset tangibility of hotel companies in Portugal, the higher their level of debt.

In model (2) the variable CRISIS is introduced to analyse the impact of financial crisis and economic crisis periods. The result shows a positive relationship between periods of crisis and debt of the hotel companies in Portugal. Thus, in periods of financial and economic crisis, companies in this industry increase debt. Although no other studies were found on the statistical impact of crisis periods on the corporate debt of hotel industry, the result is in line with the expectations. Thus, in periods of financial and economic crisis in Portugal corporate debt is higher. The results for the financial determinants remain similar in terms of behaviour in relation to the initial model.

4.4 Discussion of results

Regarding the research hypotheses proposed in this study, the first research hypothesis suggested a negative relationship between profitability and debt, which was corroborated. Therefore, companies with higher profitability is expected to have a lower debt. The second research hypothesis suggests a negative relationship between risk and debt, which wasn't validated. Regarding the third research hypothesis, which proposed a positive relationship between the company size and debt, it was found statistical evidence that validates the statement. In this sense, it is possible to state that larger companies have higher level of debt.

The fourth research hypothesis suggests a positive relationship between growth opportunities and debt, which was statistically validated. Hence, it is suggested that hotel companies with higher growth opportunities have more debt. The fifth research hypothesis suggests was validated. We evidence statistically negative relationship between company age and debt. In this sense, it is possible to state that younger companies have more debt. About the positive relationship between asset tangibility and debt, the sixth research hypothesis is confirmed. We find statistical evidence that asset tangibility has a positive impact on company debt. In general, our results are in accordance with the Pecking Order theory, which suggests that Portuguese hotel companies prefer self-financing to external financing.

Finally, the last research hypothesis about the importance of financial and economic crisis periods, the results statistically evidence a positive influence on debt. Therefore, in periods of crisis the debt of Portuguese hotel companies increases.

5. Conclusion

The main objective of this study was to analyse the determinants that most contribute to the debt of Portuguese companies in the hotel industry. The study also aimed to understand the impact of financial and economic crisis period on the debt.

Based on data collected between 2005 and 2020 for companies in hotel industry, the results show that the factors that most contribute to debt are profitability, size, age, growth opportunities and tangibility of the asset. The results suggest that more profitable hotel companies prefer to use profits rather than loans to finance investments since there is a negative relationship between profitability and debt. Company size shows a positive and significant relationship with debt, confirming the tendency of larger hotel businesses to take on more debt. Age shows a negative and significant relationship with total debt, suggesting that young firms have greater difficulties in accessing credit. The results concerning growth opportunities show a significant positive impact of revenue growth rate on debt, suggesting that firms with higher revenue growth are more likely to finance growth with debt. Finally, asset tangibility is statistically significant, suggesting that firms with a high level of tangible fixed assets tend to have easier access to financing. Thus, they can provide greater guarantees to creditors and, therefore, reduce adverse selection problems and information asymmetries. However, business risk in Portuguese companies in the hotel industry is not relevant. In general, the results of this study allow to validate the application of the Pecking Order theory in the companies of this industry, prioritizing the choice of financing methods. The main conclusion is that the periods of financial and economic crisis in Portugal affect significantly, and positively, the debt of hotel companies. It seems that crisis periods have an impact on financial markets and lenders adjust their risk analysis in response to crisis, rather than company performance to deal with it. Therefore, lenders adjust their financial and economic analysis of companies based on their expectations of the impact of crisis on companies.

Finally, considering the COVID-19, the results may support national authorities in the definition of any financial support policies suited to the specificities of hotel businesses. For future work we suggest to analyse zombie companies in Portugal and their level of debt as well as the impact at a national level. Additionally, future work would be to use corporate governance factors to explain the level of debt in hotel companies.

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