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Tourism Industry as a Competitive Advantage of Greece During and After the Economic Crisis: Financial Analysis of Selected Hotel and Shipping Companies

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The tourism industry is very important to the economic prosperity of a country, even in a period of economic crisis. In last decade, tourism industry of Greece, which contributes significantly to the country's economy, faced many problems challenges during the economic crisis. To shed light on this situation, Greek-listed companies in the tourism industry were examined in recent years (during and after the economic crisis) and we tried to draw safe conclusions about their financial performance. Our sample consisted of all Greek listed companies in the tourism industry, i.e., four hotels and four shipping companies, while several univariate statistical tests (*t*-test, Kruskal-Wallis tests) have been applied to their accounting data (financial ratios) for comparison between them, during and post crisis period. The study results underlined that the financial position of all the sample companies was deteriorated during the crisis. This study could be useful for extracting knowledge from the current state of the Greek tourism industry to potential investors, managers, the Greek Ministry of Tourism and Finance or other government authorities, tax policy and related issues in tourism business activities, and the banking system.

Keywords: Hotel, tourism, financial variables, Greece, economic crisis

JEL: L83, M41, Z30

Undoubtedly, tourism is a very big global economic activity, since it not only enhances the host country's reputation and prestige but it also acts as a cultural bridge with an exchange of various elements of cultures and ideals (Cordero and Tzeremes, 2018; Lozic *et al.*, 2016). For many countries it is their main source of income, allowing them to become increasingly competitive. In addition, it greatly affects macroeconomic figures such as the gross domestic product (GDP) of a country helping to positively impact the employment generation of a country's workforce, as well as increases the local and foreign investments in the tourism industry (Chen, 2010; Smeral, 2009). At the same time, the increase in tourism related imports leads to create the foreign exchange resources which in turn leads to economic growth. Furthermore, the contribution to the

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balance of payments is an important influence on a country's economy. In other words, it helps to reduce this deficit, as foreign exchange inflows and outflows of funds between countries are recorded for a certain period of time. For some countries, tourism and hotels' investments are considered as a "heavy industry", as they could be even their main source of income (Gemar *et al.*, 2016; Pan, 2005).

According to the Commission of the European Communities (2001), tourism improves the levels of social prosperity and at the same time the quality of people's lives, leading them to social and economic cohesion. It turns out that tourism is a key pillar of each country's economic prosperity while increasing competition among them. Tourism also benefits other product sectors that are inextricably linked to it, adding value to them (Chen, 2010; Ryu and Jang, 2004). Tourism plays a catalytic role in economies that are facing a protracted economic downturn (as Greece recovers) and gives a new impetus to investment-backed countries.

During an economic crisis, the share of gross domestic product (GDP) that comes from tourism decreases as tourists spend much less money than before the crisis, while tourists may prefer hotel packages such as all-inclusive (Huy, 2018; Pie *et al.*, 2019; Podhorodecka, 2018; Youn and Gu, 2010). Greece, like many other countries, faced an economic crisis from 2010 to 2015 (Almeida and Bremser, 2013; Ritchie *et al.*, 2009; Radwan, 2017). A consequence of the crisis was that hotel companies did not have easy access to external financing, and the loans they received were at high-interest rates (Dzhandzhugazova *et al.*, 2015). The economic crisis was coupled with the immigrants and refugees entered into the country, which has played a decisive role in the decline in tourist flow in Greece, mainly in its islands (Pappas and Papatheodorou, 2017; Stanislav and Stavrinoudis, 2018). The reservations have been reduced hence the revenues of the hotels have been reduced too.

After the financial crisis, the level of liquidity in hotel units has improved, and corporate equities are more dynamic in the stock exchange than in the crisis period. There is an increase in the workforce, and there is more potential for investment in the tourism industry. In other words, in the post-crisis period, there is a recovery and a financial boom in the tourism industry in general and the financial position is improving for most tourism companies (Boukas and Ziakas, 2012).

The purpose of this study is to examine the financial situation of the tourism sector, which acted as a competitive advantage for the Greek economy, during and after the economic crisis by analyzing all listed companies in the sector, to draw some safe conclusions about their financial performance. Thus, our sample consists of all Greek-listed companies in the tourism sector, i.e. four hotels and four shipping companies. They have been examined for the years during the economic crisis (2012-2015) and post-crisis (2016-2018). Several statistical tests have been applied to their accounting data (financial ratios) to compare each other. Our results revealed that in some factors hotel companies are better than shipping companies, and vice-versa.

This study aims to address the question whether the economic crisis affects the tourism industry in Greece and how this industry could act as a competitive advantage for the Greek economy during and after the crisis, by analyzing all listed companies and their financial performance. The study adopted the methodology reported by Ryu and Jang (2004) and Zheng *et al.* (2016). The contribution of the present research is that it provides new empirical evidence for Greek tourism and new knowledge at a practical level. In the first part, the current state of tourism is examined, combining two different fields of research: financial analysis and tourism management, analyzing data related to periods of the financial crisis and outside of them, which, as far as we know, have not been studied together in the past for the Greek market. In more detail, initially, this study compares two different periods, during and after the crisis period, comparing with each other, regarding the interaction of companies with the tourism industry in two different sectors (which include all listed hotel and shipping companies on the Athens Stock Exchange). Secondly, it also presents the financial situation of the tourism industry in a small country in the Eurozone such as Greece, and how this sector was affected throughout the sample years. On a practical level, this study helps tourism industry managers and prospective investors to have a clearer picture of what they should invest in or what they can do to make the industry competitive again.

The structure of the study is as follows: the next section is the literature review followed by the methodology of the research and the examined data. After that, study results, discussion, and conclusion have been reported. Finally, study implications, and limitations and future directions are presented.

LITERATURE REVIEW

Tourism Industry and Economic Activity

The tourism industry is a very important business sector for the economic well-being of a country, moreover, it gives prestige to a geographical area or an entire country and provides a bridge of culture and ideals (Cordero and Tzeremes, 2018; Lozic *et al.*, 2016). For many countries it is their main source of income, allowing them to become increasingly competitive, even in a period of economic crisis. In addition, tourism has a great impact on macroeconomic figures such as unemployment, GDP of a country, etc., as well as increases investment in the tourism industry (Chen, 2010; Smeral, 2009). Furthermore, tourism activity in a country leads to economic growth, creates additional foreign exchange resources, and contributes to the balance of payments. For some countries, tourism and hotel investments are a 'heavy industry' as it could be even their main source of income (Gemar *et al.*, 2016; Pan, 2005).

A majority of studies have examined tourism issues diachronically, from different aspects using several methodologies (Hua Liu *et al.*, 2012; Negrusa *et al.*, 2015; Paraskevas and Altinay, 2013; Peiro-Signes *et al.*, 2015). Also, for the Greek tourism market, there is not a plethora of studies available as for other developed countries (Agaliotou *et al.*, 2019; Pappas and Papatheodorou, 2017; Tzanelli and Korstanje, 2016).

The Tourism Industry in the International Arena

The economic crisis in Greece combined with the large influx of refugees and immigrants create severe problems in the development and evolution of the tourism industry. The Greek islands that house the refugees and immigrants automatically downgraded their image in the eyes of tourists, despite the increased efforts made by the marketing activities (Stanislav and Stavrinoudis, 2018). Stanislav and Stavrinoudis (2018) conducted a survey to investigate the hotels affected by immigrants and refugees. By applying statistical tests e.g., Kruskal-Wallis, they reached strong conclusions in the favor of their hypotheses. It should be emphasized that a drawback in their research was the lack of response from tourism organizations and agencies to complete the questionnaire, leading to conclusions drawn from a small representative sample.

For the US market, Ryu and Jang (2004) used both cash flow ratios and conventional financial indicators to analyze the performance of commercial hotel and casino hotel enterprises over the last five years. Independent sample *t*-tests were employed on the SIC 7011 hotel and motel data extracted from the financial database i.e., Mergent Online. Utilizing operational efficiency, liquidity, and solvency measures, the commercial hotel and casino hotel firms' performance was evaluated. The findings demonstrated that cash flow ratios in liquidity produced different results from financial ratios (on liquidity, solvency, and operational efficiency). It was discovered that casino hotel firms had much greater liquidity ratios than commercial hotel companies, suggesting that the difference may have been brought on by the kind of hotel.

To identify changes in financial structures during the recession period in the US, Zheng *et al*. (2016) used numerous t-tests to compare the average financial ratios between the two hotel segments (hotel segment and casino hotel segment). They compared the weekly stock indices for the hotel segment and the casino hotel segment to the Standard and Poor's (S&P) 500 index using the Autoregressive Integrated Moving Average (ARIMA) with an intervention analysis approach. According to their findings, the recession hit casino hotel businesses first, but it didn't hit hotel businesses or S&P 500 businesses until nine months later.

In Spain, Gemar *et al*. (2016) studied the hotel industry looking at economic and non-economic variables including size, location, type of hotel, management of the financial structure, and year they operated. They used statistical measures such as mean, standard deviation, and the maximum and minimum value to examine study variables. They concluded that the survival of the hotels largely depends on their distance from the airports, their legal form, and their business cycle. Another important issue is that the economic crisis is affecting not only Greece but also other southern European countries such as Spain (Cordero *et al*., 2018). Cordero *et al*. (2018) found increasing labor productivity in hotels located in the Balearic and Canary Islands. They further argued that average hotel labor productivity remained stable during the financial crisis. Furthermore, Deng *et al*. (2019) identified that during the economic crisis, investments in small hotels generated more profits as compared to hotel chains in Spain. It appeared better for hotel chains to invest in hotels of three or fewer stars than in higher star-rated hotels.

Also for Europe, a comparative study was carried out by Lozic *et al*. (2016), on whether large hotel complexes in Croatia were affected due to economic crisis. They analyzed their financial statements, while the sample years are 2010-2014. The instruments used for their research are the liquidity and solvency ratios. They have selected hotel companies listed on the Zagreb Stock Exchange (ZSE). Their research showed that despite the crisis, the Croatian hotel industry has shown strong resistance. This is confirmed by the higher growth rates than other Mediterranean countries, which are inextricably linked to tourism. Last, for another European country in an economic crisis, about the crisis in Cyprus, Boukas and Ziakas (2012) interpreted ways of foreign investment in the tourism industry, the diversification of the tourism product, and quality improvement.

For Russia, Dzhandzhugazova *et al*. (2015) focused on the conditions and development of hotels during the crisis. In their study, they analyze key elements such as demand, supply, and the level of competition. With the help of these data, they concluded about the current situation of hotels in Russia, the problems faced by hotel units, and what prospects there are in the market. They used methodological approaches such as observation and benchmarking. As a result of the investigation, it was found that the current situation in the Russian hotel industry is not considered negative despite the crisis, but future threats should be taken seriously. Also, for the Russian market, Kovaltchuk *et al*. (2016) explain how to ensure an effective assessment of businesses in the tourism sector despite the economic crisis in Russia and make recommendations on how to implement them.

In the Middle East, Masa'deh *et al*. (2018) studied the impact on hotels' performance of the advertising mix and websites during the political and economic crisis in this geographical area. Collecting data using questionnaires from 121 hotel workers and analyzing using correlation and multiple linear regression, they found that advertising and direct sales of hotels were influenced by countries with intense political controversy, while hotel websites had no significant impact.

For South-East Asia, Thai hotel companies were studied by Slisa *et al*. (2014). Thailand is a country that prides itself on high-quality services and helpful staff. Their sample was selected by companies listed on the Stock Exchange of Thailand, as hotel companies have the potential to benefit from the free flow of funds, while investors use several indicators to measure hotel performance. They examined eight companies for the financial years 2010-2012. The financial ratios analyzed were liquidity, activity, and solvency. The study concludes that all hotel companies are performing well in profitability while financial liquidity, solvency, asset management, and operating activities need to be improved. This in turn will boost overall profitability and thus the competitiveness of hotels. Concerning the financial crisis in Bali, Gurtner (2016) studied the tourism industry with issues of unplanned development and host community over-dependence on tourism revenue. Last for another country in South-East Asia i.e., Malaysia, Ghaderi *et al*. (2012) supported that the experience of two separate targeted terrorist attacks on the island reveals several challenges and tangible lessons for disaster management and crisis recovery agencies. Ghaderi *et al*. (2012) claimed that the public sector can mitigate the crisis in Malaysia with a well-organized and formulated management plan for the tourism crisis, to limit potential future damages. Therefore, to address the empirical and theoretical gaps identified in the literature, the following hypotheses are proposed:

H_1: The tourism industry in Greece is not affected by periods of economic crisis.

H_2: The tourism industry can be a competitive advantage for Greece during and after the economic crisis.

METHODOLOGY

Population and Sample

The preliminary aim of this study was to examine all companies related to the tourism industry, especially the majority of hotel companies. In the present study, an attempt was made to find financial data for all tourism businesses in Greece, so that the comparisons could be more complete and the results would be more reliable, as they would be based on a large representative sample that would have all domestic tourism businesses.

However, this was not possible since the Ministry of Tourism and Chamber of Commerce of Greece had no financial data available for every company and was not in our disposal for academic use. Thus, the sample of the survey was limited only to listed companies that publish obligatory available data for their financial position. The sample companies are listed on the Athens Stock Exchange (ASE). It consists of four hotels and four listed shipping companies, as only these are listed on the ASE in the specific sectors selected for examination (available information can be found on the ASE website). The examined period for our sample is the economic crisis period 2012-2015 and the non-crisis period 2016-2018 (year 2019 was excluded because there were national elections in Greece and further, due to the appearance of the covid-2019). In addition, one hotel company was de-listed from the ASE in 2016 while another hotel company in the sample did not have any financial information for financial years 2013 and 2014 as the relative legal framework changed in 2015 (this was the official information provided to us by the accounting department of this hotel). Last, all sample hotels are located in the urban center of Athens and are five-star luxury hotels.

Description of Variables

The variables chosen in this study to examine the specificities of the tourism industry are the financial ratios which will then be tested as quantitative variables. Financial ratios help to make important financial decisions by providing useful information to prospective and current investors. Finally, they are used to compare the company's financial data with those of other companies or with the industry average (Ryu *et al.*, 2004; Zheng *et al.*, 2016). Sixteen financial ratios have been selected to assess the financial position of businesses in the tourism industry, and whether they have improved or deteriorated over time. The ratios of the present study are distinguished by five well-explored categories. First, liquidity ratios, help to better understand a company' s financial position as well as its ability to meet short-term liabilities (Lozic *et al.*, 2016; Slisa *et al.*, 2014). Another category that stands out is the activity ratios, whether a business is using its assets efficiently (Zheng *et al.*, 2016). A third category is the profitability ratios, which measure the profitability of a business at a given time (Dimitrić *et al.*, 2019). The fourth category that stands out is the capital structure ratios (Kulathunga *et al.*, 2017). These ratios examine the ability of the company to meet its long-term liabilities as well as the degree of protection and guarantees that its lender receives (Dutescu *et al.*, 2014). The last category is the investment ratios, which relate to the dividends a company gives to its shareholders, the number, and the market price of its shares (Zheng *et al.*, 2016). The ratios with their calculation and the descriptive statistics for the entire sample are presented in Tables 1 and 2, while a detailed explanation of the ratios used is provided below.

Abbreviation	Financial Ratios	Ratio Analysis
	Liquidity Ratios	
CUR	Current Ratio	Current Assets/Current Liabilities
ATR	Acid-test Ratio	(Current Assets-Inventories)/Current Liabilities
CAR	Cash Ratio	Cash & Marketable Securities/Current Liabilities
	Activity Ratios	
SSL	Short-term Liabilities Turnover	Cost of sales/Current Liabilities
SOR	Receivables Turnover	Net sales/Debtors
AT	Asset Turnover	Net sales/Total Assets
FAR	Fixed Asset Turnover	Sales/Non-Current Assets
	Capital Structure Ratios	
CSR	Capital Structure Ratio	Current Assets/Total Liabilities
DB	Debt Burden	Equity/(Long-term+Short-term Liabilities)
FA	Fixed Assets	Equity/Non-Current Asset
IC	Interest Coverage	Profit or Loss before Tax/Interest Expense
	Profitability Ratios	
ROE	Return on Equity	Profit or Loss before Tax/Total Equity
GPR	Gross Profit Ratio	Gross Profit/Sales
LR	Leverage Ratio	Equity/Total Equity
	Market Ratios	
EPS	Earnings per share	Net Earnings/Number of shares
DPS	Dividend per share	Dividends/Number of shares

Source: Authors' Presentation

Table 1. Financial Ratios

The current ratio indicates the level of liquidity in which a business is located and should be priced > 2. Also, the acid-test ratio shows the ability of a business to respond to current liabilities and it should take a price > 1. The cash ratio indicates whether the business is in a good financial position and should be priced at > 0.5. The higher this ratio, the better the business can meet short-term liabilities (Trent, 2016). The short-term liabilities turnover ratio shows how many times the short-term liabilities are covered by the cost of sales. The higher this ratio, the faster the company responds to its short-term liabilities (Brealey *et al.*, 2022). In addition, the higher the receivables turnover ratio, the faster the business collects its claim against third parties. Correspondingly, the asset turnover ratio, when it is high, means that the business use assets intensively to make sales. On the other hand, when the fixed asset turnover ratio is low it means that the fixed assets are not used effectively in generating sales (Trent, 2016).

Abbreviation	Min	Max	Mean	Std Dev.
CUR	0.07	4.76	1.414	1.231
ATR	0.06	4.67	1.351	1.238
CAR	0.00	3.33	0.472	0.7167
SSL	0.30	6.37	1.964	1.540
SOR	0.29	8.43	2.562	2.099
AT	0.06	0.73	0.2874	0.1532
FAR	0.12	0.61	0.3163	0.1570
CSR	5.02	108.02	30.31	24.71
DB	-0.04	11.85	1.458	1.741
FA	-0.06	1.58	0.639	0.3822
IC	-145.06	16.43	-10.27	29.21
ROE	-4684.9	212.00	-80.70	640.00
GPR	-0.02	0.75	0.2352	0.1391
LR	-0.05	0.92	0.4846	0.2314
EPS	-0.75	1.15	0.0446	0.2641
DPS	0.00	3.00	0.0982	0.4113

Source: Authors' Presentation

Table 2. Descriptive Statistics for the Whole Sample

The first ratio in the following category, the capital structure ratio shows how much the firm's net worth covers all its assets. The lower the price, the easier the entity has access to external financing (Brealey *et al.*, 2022). Moreover, the debt ratio shows how much the business is borrowing. The bigger it is, the greater security is provided to its lenders (Brigham and Ehrhardt, 2019). Two other capital structure ratios, the fixed capital ratio, and the interest coverage ratio are also examined. The first ratio shows that the higher the proportion of fixed assets financed by equity. The second ratio shows that as it grows better it is possible for the business to cover the interest on the loans it receives (Brealey *et al.*, 2022; Trent, 2016).

Furthermore, the return on equity ratio shows whether the business rationalizes its equity based on profits (Brigham and Ehrhardt, 2019). Also, the gross profit ratio indicates that the larger sales, the better the company's position in terms of profits. When the leverage ratio is > 1 then the effect of foreign capital is positive in the company's earnings. When it is < 1 then the effect is negative and the business is borrowing on unfavorable terms. In case this ratio = 1, then the effect of foreign capital is neutral (Chen, 2010; Hall, 2010). Finally, the profitability of a business share increases as the earnings per share investment ratio increases. Last, the amount of dividend a company will distribute to shareholders depends on the dividend investment rate per share. The higher the ratio, the greater the dividend (Trent, 2016).

Data Analysis Techniques

In this study, following the methodology of Ryu and Jang (2004) and Zheng *et al*. (2016) several statistical tests, univariate and multivariate, were employed and their selection is associated with the size of the data for analysis. First, comparisons were made between hotel companies before and after the crisis, which reveals the impact of the financial crisis on the financial position of the sample companies: two independent samples mean t-tests were applied to the ratios and also, the mean, standard deviation, and p-value are presented (Ryu and Jang, 2004). Similarly, comparisons were made between shipping companies during and after the crisis and their *t*-test statistical results help us understand the current situation in the shipping industry (Ryu and Jang, 2004; Zheng *et al*., 2016).

Then, multiple comparisons using rank values with the Kruskal-Wallis test were applied as we compared the median of shipping and hotel companies and proceed to the analysis of the examined ratios. Accordingly, comparisons were made between all the companies, but in this case, sample companies were divided into two sub-samples: during crisis and post-crisis periods (Zheng *et al*., 2016). In this way, we can study and draw useful conclusions about how much the crisis has affected shipping and hotel companies.

Finally, by also applying the Kruskal-Wallis test, we computed and compared the median weighted relative change of shipping and hotel companies before and after the crisis, to isolate the impact in every sector of the tourism industry (Ryu and Jang, 2004; Lois *et al*., 2021). Again, in this case, at significance level $p < 0.1$, our sample companies were analyzed and commented on the improvement or not of the ratios in the financial years which were primarily selected. The weighted relative change of each ratio equals as:

$$\Delta \text{Ratio}_i = [(\text{Ratio}_{i,2016}+\text{Ratio}_{i,2017}+\text{Ratio}_{i,2018}) / 3] - [(\text{Ratio}_{i,2012}+\text{Ratio}_{i,2013}+\text{Ratio}_{i,2014}+\text{Ratio}_{i,2015}) / 4]$$

where,

Δ: is the weighted relative difference in every ratio and

Ratio_i: is one of the examined financial ratios.

RESULTS

Table 3 shows the average of the ratios for the sample hotels in and after the crisis, the standard deviation, the t-value, the p-value, and 95 percent confidence interval (CI). For the cash ratio (CAR), the price shows a statistically significant change ($p < 0.01$), which means that companies are better at meeting their short-term liabilities in the post-crisis period, the capital structure ratio - CSR ($p < 0.1$) indicating that businesses have easier access to post-crisis external financing and Return on Equity (ROE) presents also a statistically significant change ($p < 0.1$), where it is evident that sample companies use their funds more efficiently and more rationally after the crisis. Nur Shahila (2018) also claimed that the company's performance is affected by the risks and the financial environment in which it is located. Finally, the earnings per share (EPS) ratio ($p < 0.05$) shows that after the crisis the stock market capability of companies increased compared to the crisis period.

Table 4 presents comparisons of ratios for in-crisis and post-crisis shipping companies, also reporting the average, standard deviation, t-value, p-value, and 95 percent confidence interval. For the gross profit margin ratio (GPR), the significance level ($p < 0.05$) improved compared to the in-crisis period, indicating that shipping companies were better off in the non-crisis period (after the economic crisis). Also, the earnings per share ratio (EPS) is given a pivotal value ($p < 0.05$), which indicates that maritime stocks have greater potential in their shares during the non-crisis period.

Table 5 compares hotel and shipping companies using the Kruskal-Wallis test. The qualitative variable in the sample is the section of the tourism industry (shipping and hotel companies), while the quantitative variables are the ratios. In the table the shipping and hotel medians and the p-values are given. Concerning the received results, the short-term liabilities (SSL) ratio (p < 0.05) indicates that hotels can respond better to shipping on their short-term liabilities, and the receivables turnover - SOR (p < 0.05) indicates that have a higher median value. Also, the fixed asset turnover (FAR) ratio (p < 0.05) shows that maritime companies are using their assets better and more effectively to generate sales. The capital structure (CSR) ratio (p < 0.01) shows lower value across hotels which means that they have easier access to external financing. In addition, the significant loan exposure (DB) ratio (p < 0.01) indicates that hotel units provide greater security to their lenders against shipping, while the fixed assets (FA) ratio (p < 0.01) indicates that hotel equity is funded greater than their fixed assets against shipping. Last, Slisa and Punthumadee (2014) for listed companies in Thailand,

Ratios	**Mean Hotel co. In-crisis: years 2012-15**	**Mean Hotel co. Post-crisis: years 2016-18**	***p*-value**	**Confidence Interval (95% CI)**
CUR	1.47	1.62	0.789	(-1.329; 1.022)
ATR	1.34	1.54	0.732	(-1.386; 0.989)
CAR	0.189	1.29	0.006**	(-1.820; -0.385)
SSL	2.61	2.51	0.881	(-1.294; 1.499)
SOR	3.59	3.25	0.712	(-1.554; 2.237)
AT	0.257	0.294	0.579	(-0.173; 0.099)
FAR	0.229	0.317	0.136	(-0.208; 0.030)
CSR	15.3	31.5	0.100†	(-35.76; 3.49)
DB	1.73	1.87	0.755	(-1.034; 0.760)
FA	0.846	0.743	0.502	(-0.210; 0.416)
IC	15.5	30.3	0.358	(-47.9; 18.2)
ROE	0.32	3.45	0.066†	(-6.49; 0.22)
GPR	0.241	0.325	0.218	(-0.220; 0.053)
LR	0.584	0.602	0.759	(-0.1451; 0.1072
EPS	0.02	0.27	0.040*	(-0.488; -0.012)
DPS	0.083	0.068	0.752	(-0.0796; 0.1086)

Source: Authors' Estimation
†p <.10; *p <.05; **p <.01

Table 3. Comparisons of Hotel Companies In-crisis and Post-crisis

studied their liquidity, activity, and solvency ratios, supported that all hotel units performed well in profitability while financial liquidity, solvency, and asset management needs to be improved.

Concerning the interest coverage (IC) ratio (p < 0.05), the median of the hotels is larger, which means that they are easier and better able to cover the interest on the loans they receive against shipping companies. In terms of profits, it is slightly better for hotel companies to have a gross margin - GPR (p < 0.1), while according to financial leverage - FL (p < 0.01) the effect of foreign capital on profits is slightly better in hotels than in shipping companies. In conclusion, the earnings per share (EPS) ratio (p < 0.05) shows that hotel units have more profitable stocks than the sample shipping companies.

Ratios	**Mean Shipping co. In-crisis: years 2012-15**	**Mean Shipping co. Post-crisis: years 2016-18**	***p*-value**	**Confidence Interval (95% CI)**
CUR	1.18	1.464	0.446	(-1.057; 0.480)
ATR	1.16	1.428	0.473	(-1.041; 0.497)
CAR	0.194	0.354	0.202	(-0.414; 0.094)
SSL	1.22	1.66	0.338	(-1.377; 0.493)
SOR	1.41	2.20	0.206	(-2.043; 0.468)
AT	0.303	0.295	0.886	(-0.1081; 0.1243)
FAR	0.364	0.354	0.880	(-0.1211; 0.1403)
CSR	33.7	42.1	0.385	(-28.17; 11.30)
DB	0.658	1.80	0.249	(-3.199; 0.922)
FA	0.451	0.534	0.509	(-0.342; 0.175)
IC	-1.74	0.23	0.137	(-4.63; 0.68)
ROE	-299.00	32.00	0.277	(-957; 294)
GPR	0.1644	0.2325	0.012*	(-0.1196; -0.0167)
LR	0.347	0.435	0.389	(-0.297; 0.121)
EPS	-0.105	0.0475	0.026*	(-0.2847; -0.0203)
DPS	0.0056	0.269	0.311	(-0.81; 0.283)

Source: Authors' Estimation
*p <.05

Table 4. Comparisons of Shipping Companies In-crisis and Post-crisis

Ratios	**Median Shipping co.**	**Median Hotel co.**	***p*-value**
CUR	1.105	1.11	0.749
ATR	1.025	0.855	0.917
CAR	0.09	0.28	0.212
SSL	0.73	2.27	0.015*
SOR	0.91	3.56	0.011*
AT	0.33	0.175	0.640
FAR	0.37	0.19	0.049*
CSR	29.88	12.79	0.001**
DB	0.90	1.51	0.000**
FA	0.580	0.795	0.010**
IC	0.17	0.93	0.016*
ROE	0.735	0.50	0.703
GPR	0.20	0.235	0.093†
LR	0.47	0.60	0.000**
EPS	0.01	0.11	0.012*
DPS	0.00	0.00	0.179

Source: Authors' Estimation
†p <.10; *p <.05; **p <.01

Table 5. Comparisons of Shipping and Hotel Companies

Table 6 compares the medians of all sample companies for in-crisis years and post-crisis years. Qualitative variables in the sample are the in-crisis and post-crisis period for all companies, hotel companies, and shipping companies. Our results show that the cash ratio - CAR ($p < 0.01$) improves for all companies in the sample after the crisis period, while the interest coverage (IC) ratio ($p < 0.05$) is better for companies after the crisis. Return on Equity (ROE) ratio ($p < 0.05$) shows that all sample companies use their funds more efficiently in the post-crisis period (2016-2018). Different results found by Pie *et al.* (2019) showed that luxury hotels can cover their fixed assets with their share capital. More specifically, according to Pie *et al.* (2019), the financial crisis in Spain has not had a direct impact on luxury hotels, but on the contrary, they continue to increase their success, thanks to the best continuous strategies. Furthermore, Almeida and Bremser (2013) argued that hotels focusing on high quality, brand image, and loyal customer base are better equipped to face the crisis: they were not affected by it, nor did they harm their performance. In addition, the gross profitability (GPR) ratio ($p < 0.01$) is higher than the median for all companies in the post-crisis period, which means that companies are in a better financial position. Finally, the earnings per share (EPS) ratio ($p < 0.01$) was improved after the crisis, where the shares of each company show greater potential than in the crisis period (2012-1015).

Ratios	Median All co. In-crisis: years 2012-15	Median All co. Post-crisis: years 2016-18	*p*-value
CUR	0.72	1.395	0.361
ATR	0.57	1.32	0.313
CAR	0.085	0.485	0.001**
SSL	1.555	1.960	0.542
SOR	1.730	2.725	0.514
AT	0.305	0.305	0.408
FAR	0.315	0.335	0.206
CSR	17.66	35.45	0.109
DB	0.985	1.36	0.180
FA	0.585	0.685	0.536
IC	0.145	0.535	0.025*
ROE	0.055	1.135	0.015*
GPR	0.160	0.245	0.004**
LR	0.495	0.580	0.177
EPS	0.010	0.060	0.005**
DPS	0.00	0.005	0.328

Source: Authors' Estimation
*p <.05; **p <.10;

Table 6. In-crisis and Post-crisis Comparisons

Last Table 7 compares the relative weighted change across shipping and hotel units regarding the crisis using the Kruskal-Wallis test. The fixed asset turnover (FAR) ratio ($p < 0.1$) indicates that hotels use their assets more effectively in terms of sales than shipping and the interest coverage (IC) ratio ($p < 0.1$) indicates that hotels are better to cover the interest on loans than they do on shipping companies.

Regarding the research hypotheses that were earlier developed to address the empirical and theoretical gaps in the literature, the first hypothesis is rejected because companies in the tourism industry are impacted by the economic crisis and their performance varies both during and after crisis periods, presenting various particularities for the hotel and shipping industries. The second hypothesis, that Greece's tourism sector can

Ratios	Median weighted relative change in and post crisis of Shipping co.	Median weighted relative change in and post crisis of Hotel co.	*p*-value
CUR	0.48375	0.08458	1.000
ATR	0.4750	0.1588	1.000
CAR	0.1437	1.0296	0.248
SSL	0.5941	-0.0258	0.773
SOR	0.8183	-0.8075	0.248
AT	0.0220	0.0225	0.773
FAR	0.0125	0.0537	0.083†
CSR	6.090	7.000	0.564
DB	0.1683	-0.1300	0.149
FA	0.0437	0.0245	0.773
IC	0.555	6.0662	0.083†
ROE	7.095	2.135	0.564
GPR	0.0537	0.0921	0.386
LR	0.0370	-0.0320	0.248
EPS	0.1425	0.2179	0.564
DPS	0.0300	0.00	0.139

Source: Authors' Estimation
†p <.10

Table 7. Comparisons of Weighted Relative Change within and after Crisis of Shipping and Hotel Companies

give the country a competitive edge both during and after the economic crisis, is rejected since significant improvements in business performance only occur after the crisis has passed.

DISCUSSION

Tourism contributes significantly to the economic prosperity of a country, as it creates additional foreign exchange resources and contributes to the balance of payments, and has a great impact on several macroeconomic figures such as unemployment, GDP of a country etc. as well as increases investment in the tourism industry (Chen, 2010; Gemar *et al*., 2016; Pan, 2005; Smeral, 2009). The tourism industry can boost their competitiveness and perpetually could provide for some countries their main source of income, even in a period of economic crisis (Cordero and Tzeremes, 2018; Lozic *et al*., 2016). This study, by examining the situation in the tourism industry of the Greek economy during and after the economic crisis and analyzing all listed companies, maintains some safe conclusions about their financial performance. The sample that consists of all Greek listed companies in the tourism industry has been examined for the years during the Greek economic crisis (2012-2015) and after the crisis (2016-2018).

The average of the hotels in and after the crisis show better results after crisis in solvency (cash ratio), capital structure (capital structure ratio), and profitability (earnings per share). Thus, the examined hotel companies are better at meeting their short-term liabilities in the post-crisis period, have easier access to post-crisis external financing and equity returns, and companies as they were affected by the crisis, use their funds more efficiently and more rationally after the crisis (Nur Shahila, 2018). Similar better results were revealed for shipping companies in the post-crisis era, regarding their profitability (gross profit margin ratio and earnings per share).

By comparing the two industries sectors to see which presents better results in some factors hotel companies are better than shipping companies, and vice versa. Concerning eight financial indicators (short-term liabilities ratio, receivables turnover, loan exposure, fixed assets ratio, coverage ratio, gross margin, financial leverage, and earnings per share), hotels achieved significantly better performance than shipping companies. Shipping companies only in two ratios (fixed asset turnover, capital structure) have better performance than hotel companies.

Regarding the in-crisis years and post-crisis years comparisons of all sample companies, results for all sampled companies (hotel companies and shipping companies) investigated in this study show that five ratios (cash ratio, interest coverage, equity returns, gross profitability ratio, earnings per share) are improved in the post-crisis period (2016-2018) than the crisis period (2012-1015). Different results found by Pie *et al*. (2019) showed that luxury hotels can cover their fixed assets with their share capital. According to Almeida and Bremser (2013), hotels that prioritize excellent quality, brand recognition, and a devoted clientele are better prepared to handle the crisis since they were neither negatively impacted by it nor did they harm their performance.

Last, comparing with another metric the performance of the two sectors (shipping and hotel companies) in the tourism industry (the relative weighted change) regarding the Greek economic crisis period, the fixed asset turnover ratio, and the interest coverage ratio indicate that hotels use their assets more effectively in terms of sales and are better cover interest on loans than they do on shipping companies.

CONCLUSION

The benefits of tourism to a country may be endless. First of all, the country's economy grows as new jobs are created (Chen, 2010; Smeral, 2009). In addition, infrastructure works such as roads, ports, and airports are improved which makes it easier for tourists and locals alike (Gemar *et al*., 2016; Pan, 2005). Even with tourism, people with different cultures and habits get in touch and get to know each other. Finally, the country and its culture are projected, while its history and the role it has played in the creation of world culture are made known (Cordero and Tzeremes, 2018; Lozic *et al*., 2016).

The present study attempts to analyze the tourism industry i.e., the hotel and shipping industry in Greece through financial ratios during the years of crisis i.e., 2012-2015 and after the crisis period i.e., 2016-2018. These are very important sectors on which the economic development and prosperity of Greece are based (Stanislav and Stavrinoudis, 2018). In other words, they contribute to the country's GDP growth, labor force, and investment creation (Lee *et al*., 2013; Min *et al*., 2009). Sixteen ratios were employed in the financial status of both hotel and shipping companies.

Our results suggest that the financial position of all the sample companies deteriorated during the crisis. Similar results in crisis periods for Spain were found by Cordero *et al*. (2018), but different for the Russian market as claimed by Dzhandzhugazova *et al*. (2015). In the present study, the liquidity level of the companies is reported as limited and at the same time, they cannot meet their short-term liabilities. Similar results to the present study are provided by Slisa *et al*. (2014) for the hotel industry in Thailand, while different results concluded in a study conducted by Lozic *et al*. (2016), for the Croatian market. Also, in times of crisis, they cannot quickly collect their claims against third parties while their assets are not used effectively to generate sales.

In addition, sample companies do not have easy access to external financing in the financial years 2012-2015. Companies cannot cover the interest on their loans effectively during the recession because they did not use their funds rationally. Finally, even in some cases, there is no negative impact on profitability in the crisis periods (Slisa *et al*., 2014), however, this study claims that during the crisis the profitability of corporate stocks declined and no dividends were paid to the sample companies' shareholders.

IMPLICATIONS

Our work contributes by providing new empirical evidence for Greek tourism, while also providing several practical implications. The status of tourism is examined in Greece during the period of economic crisis and in the post-crisis era, combining two disciplines that have not been studied in the past. This comparison of two different periods between them reveals the companies' interaction with the tourism industry in two different sectors. By the analysis and evaluation of the financial situation of hotel and shipping companies, this study presents the current financial situation of the tourism industry which acts as a competitive advantage for a small country in the Eurozone such as Greece, and how this sector was affected throughout the examined years.

On a practical level, this study helps in many dimensions to several people involved in Greece in the tourism industry. More analytically, this research could be useful to banks, which see the difficulties faced by the tourism industry in lending to tourism businesses with low-interest rate loans and generally more favorable repayment terms. At the same time, the Ministry of Tourism will have a better picture of the situation of the tourism industry in Greece. With the right prerequisites to take the necessary steps, giving mainly financial incentives and tax exemptions to businesses make them as competitive as those of other countries. The prospective investors will also be able to receive important information on the overall situation in the tourism industry, which will be able to identify the threats and risks that exist in tourism businesses through financial ratios and if they are ultimately worth taking the risk of such an investment.

LIMITATIONS AND FUTURE DIRECTIONS

Even if this study has attempted to examine all tourism businesses in Greece, so that its conclusion is more adequate, there is difficulty in finding financial data for all companies in the tourism sector. Thus, our results rely on a small sample and could be more reliable if they were based on a large representative sample at the country level. Another limitation arose from the fact that no data were provided by the Hellenic Ministry of Tourism and the Hellenic Chamber of Commerce. Thus, the sample of the survey was limited only to listed companies. These companies are obliged to publish financial data and any relevant to investors' financial information about their status. Last, another limitation is the examined time period for our sample which is the economic crisis period 2012-2015 and the non-crisis period 2016-2018 (Anderson, 2006; Brent *et al.*, 2009; Carlsen and Liburd, 2008).

For future research, this study could be modified in terms of some variables or parameters, such as the sample for the financial years of the research could be different. Also, another element for future research is to select hotel units from islands rather than the urban center, as happened in the present research. Another element that differentiates the sample of companies is the selection of hotel companies listed and not listed on the Athens Stock Exchange (ASE) and a comparison between them. Categorizing Boutique City Hotel and Resort Hotel is a good criterion for comparing each other, as well as separating winter and summer interest hotel units. Elements such as comfort, luxury, and aesthetics of space are inextricably linked to five stars hotels. So, a comparison could be made with four stars hotels or three stars hotels and what actions they could take to improve their image and attract more customers such as luxury hotels. From all the above comparisons one can draw useful conclusions about the different hotel categories and how they all give the tourism industry strong competition.

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