

# Journal of Hospitality Financial Management

The Professional Refereed Journal of the International Association of Hospitality Financial Management Educators

---

Volume 19 | Issue 1

Article 4

---

4-13-2011

## Financial Structure and Profitability Analysis of Greek Hotels

MIHAIL N. DIAKOMIHALIS

*Technological Educational Institute of Epirus, Greece*

Follow this and additional works at: <https://scholarworks.umass.edu/jhfm>

---

### Recommended Citation

DIAKOMIHALIS, MIHAIL N. (2011) "Financial Structure and Profitability Analysis of Greek Hotels," *Journal of Hospitality Financial Management*: Vol. 19 : Iss. 1 , Article 4.

Available at: <https://scholarworks.umass.edu/jhfm/vol19/iss1/4>

This Refereed Article is brought to you for free and open access by ScholarWorks@UMass Amherst. It has been accepted for inclusion in Journal of Hospitality Financial Management by an authorized editor of ScholarWorks@UMass Amherst. For more information, please contact [scholarworks@library.umass.edu](mailto:scholarworks@library.umass.edu).

---

## Financial Structure and Profitability Analysis of Greek Hotels

### Cover Page Footnote

(1) Category C tax books: kept by SAs, limited partnerships, general partnerships, and limited liability companies

# **Financial Structure and Profitability Analysis of Greek Hotels**

## **Introduction**

Financial accounting is especially useful to illustrate the strengths and weaknesses of an enterprise, as well as for showing its development potential through financial analysis. Information about an economic unit is significant to those interested such as the state, credit organizations and investors, and may be used by its executives in financial decision making.

The picture of prosperity and financial robustness that every enterprise reflects in today's economic environment is affected by the estimation of its position formed by investors, creditors and stakeholders (Lazaridis and Papadopoulos 2002: 422). Consequently, the role of the financial analyst should not be limited to verifying the accounting data of an enterprise but it should extend to determining the real dynamics and prospects of the enterprise through the necessary financial analysis. The implementation and interpretation of the financial ratios is a significant tool in the frame of modern financial management (Papadopoulos, 1986:167-168). A significant advantage of the use of financial ratios is realized by the fact that the analysis can provide condensed information about the economic conditions of each enterprise (Palepu-Healy-Bernard, 2004). Also, the use of the financial ratios contributes to the determination of the strategy an enterprise should follow to estimate alternative investment options, even in the cases of evaluating the managerial executives related to the growth of the enterprise (Chew 1997: 183). Moreover, through financial analysis it is possible to estimate the precognition for the potential economic failure of enterprises (Vranas A. 1991: 431).

The hotel sector participates in tourist activity by producing and offering some of the most fundamental tourist products. The rapid development of hotels during the past decades has constituted a significant economic and social phenomenon on a global scale. The significance of the services sector is indisputable and confirmed by its accounting for 70 percent of the global GDP and employment.

The planning of hotel enterprises aiming to achieve their objectives presupposes the conscience of their strengths and weaknesses, provided through financial analysis of their accounting statements. Information arising from financial statements may illustrate the strengths and weaknesses of each hotel enterprise, which are influenced and shaped jointly by characteristics such as the size of the hotel, the locality, category, season of operation, clientele, etc.

The present research deals with the financial statement analysis of hotels, aiming to reveal the differences between hotels of different categories as well as their fluctuation for the three-year period of 2005-2007, which was selected because it follows the exceptional increase of all sizes in 2004 after the Olympic Games in Greece and ends with the economic crisis that began in 2008 when "Greece starts to crack the Eurozone" (*The Telegraph*, December 10, 2008). The study aims to answer the question of how much the financial structure and profitability of hotel enterprises are influenced by the hotel's category.

The results should contribute more thorough information about whether and to what extent the economic robustness of hotel enterprises is influenced by their categorization, as it is expressed by the solvency and profitability analysis.

The limitation of the research for a complete picture lies in the requirement of the evaluation of other factors as well, such as the size of hotels and their geographic location, the estimation of which may lead to accurate decisions of hotel enterprises' management and to the determination of an effective policy in the sector.

## **Literature Review**

Financial ratios are used extensively and diachronically by investors, creditors and managerial executives to estimate the financial operation of enterprises (Kisang, Shawn, 2004). Their analysis contributes more significant information from the financial statements than a simple review of the absolute figures recorded in the accounts (Andrew & Schmidgall, 1993). From their initial appearance as short-term techniques of credit analysis, financial ratios have been used systematically since the end of the 19<sup>th</sup> century. Since then, analysts have developed ratios that have been used widely by professionals and academics (Giacomino & Mielke, 1993). Brinker (1992) investigated the maintenance of an economic organization's financial viability and the satisfaction of client demands which presuppose the coordination of the total activities in the frame of the cost system field.

Solvency ratios are used to evaluate an enterprise's ability to meet to its long-term liabilities. Creditors, investors and lending estimators are puzzled especially by the potential of an enterprise to cover its operational liabilities. The ratios of cash flows are useful to measuring the potential of an enterprise (Mills & Yamamura, 1998). Traditionally, accounting-based figures such as profitability have been used to measure hotel business performance (Phillips, 1996). Profitability continues to be a reliable way to evaluate business strategies (Burgess et al., 1995).

Strategic management accounting is referred to as "accounting for strategic management" (Ward, 1992) where strategic management is an integrated management approach that draws together all the individual elements involved in planning, implementing and controlling business strategy (Collier and Gregory, 1995). Doyle (1994: 78) argues that "the ingredients of strategic success, as well as their measurement in the form of profitability, appear to lack 'robustness,' considering marketing and product strength, and brand management, alongside financial measures, in order to understand the status, viability and potential for success of any firm." In any case, general and department managers are using management accounting systems (MAS) for both short- and long-term decisions (Mia and Patier, 2001).

Decision makers may benefit from strategic management accounting through the use of information provided by financial analysis for alternative strategies. Bromwich and Bhimani (1994) highlight the importance of strategic management accounting, considering today's increasing competition in business. Therefore, the hotel sector is a significant target since the competition is intense and overcapacity exists, too, since the product offered is relatively homogenous. Hotels have some unusual characteristics as enterprises such as the double nature of their activities, including ownership and management, the fact that they are capital intensive enterprises with fixed assets of long duration requiring a wide horizon of investment planning, and that they are a main component of the significant and broad sector of hospitality and tourism (Collier and Gregory, 1995).

Research conducted in the hotel sector that examined the thematic field of management accounting dealt with accounting issues on one hand and issues of tourist management on the other (Pavlatos and Paggios, 2009). Most of this research focused on the hotel sector (Harris

and Brown, 1998). Collier and Gregory (1995) highlight the usefulness of strategic management accounting in the hotel sector through investigating hotel chains in Great Britain. Pavlatos and Paggios (2009: 269) found that management decisions in the Greek hotel sector are related with cost system design and the degree of the use of cost data to plan. Cooper and Kaplan (1991) found that the analysis and evaluation of the necessary systems related to product pricing, product design, budgeting, process improvements is significant, along with meeting traditional performance measurement and evaluation needs that provide significant information on strategic and operational decision-making.

The development and continually increasing use of technology has improved and accelerated accounting operations, making many of them automated and routine. This fact has added to accounting the additional role of data processing and the drafting of reports, as well as the analysis and planning, the target of economic management (Burgess, 2006).

Recently, an increasing interest in the hotel sector and tourism in general has been observed for hospitality management and management accounting practices (Harris and Brown, 1998). Moreover, much significant empirical research on management accounting for the hotel sector and the tourism industry has appeared recently in international literature (Harris and Mongiello, 2006; Burgess C., 2006; Chan, W., Wong, K., 2007). This does not mean that the collection and use of economic information entirely covers the management of the hotel sector since non-economic data such as percentages of hotel complement are considered equally important and crucial.

The perception for the research field focusing on the service sector's industries is significantly limited in relation to other sectors, and even less where management accounting in hotel companies and its contribution to hotel management is concerned. This contributed to the choice of the hotel sector as the focus of the present paper. At the same time, the choice of the hotel sector is linked with the undisputed interest of the state in the level of tourist development since tourism holds a protagonist place in the GDP and the country's employment. On the contrary, its application in strategic management accounting in Greece is little developed, while its application in the hotel sector is considered in its infancy since the information on its use and implementation by the sector's experts is limited.

Various researchers have raised questions in literature about the influence on financial ratios by factors such as hotels category. Min et al., in their study, "Evaluating the financial performances of Korean luxury hotels using data envelopment analysis," (2009) suggest that "multiple outputs and different categories of hotels" should be pursued in future studies. Pavlatos and Paggios (2009) included in the sample of their research hotels with five, four and three stars from six geographical areas of Greece. The role of hotel category in "financial support to small and medium hotel companies in Serbia" is stressed by D. Barjaktarovic and L. Barjaktarovic (2010) as one of the factors determining "the exact amount of investment costs," since "hotels with higher category achieve higher price and better occupancy rate" (pp. 9-10).

## **Methodology**

Common types of financial analysis methods used are:

- 1) Stratified or vertical analysis or common size analysis
- 2) Comparative or diachronic analysis
- 3) Diachronic ratio analysis

Apart from the data published on financial reports such as balance-sheets and profit & loss statements that provide information about the economic position of hotels, financial ratio

analysis contributes significantly to the drawing of conclusions and development programming of hotel enterprises.

The objective of this paper is to point out the variations in the financial ratios caused by the categorization differences among the Greek hotel enterprises that keep tax books of category C<sup>1</sup> according to the Code of Tax Books and Records. Specifically, the aim of the study is to evaluate the fluctuation of the financial structure and profitability the hotel sector has achieved during the three years following the 2004 Olympics Games and just before the economic crisis that began in Greece in 2008.

According to the objectives of this paper, every hotel in the country that keeps tax books of category C is defined as the sample frame. The selection of financial statements for every year under investigation (2005, 2006, and 2007) took place by random stratification sampling in which approximately three hotels from every prefecture of the country were selected. In total, 438 financial statements, 146 for every year, were processed. The segmentation by category of the 146 private owned hotels included in the sample is: 21 percent of five star hotels, 20 percent of four star, 35 percent of three star and 25 percent of two star hotels respectively.

In order to study the balance-sheets and the profit and loss statements of the hotels, a diachronic ratio analysis was conducted, expressing the relationships between the different data of the financial statements. Ratios were set up for the financial structure and profitability of hotels from the processing of these data. Ratios were evaluated on average basis among the total firms and on a per-period basis.

Solvency ratios are used to estimate the hotels' long-term capacity to satisfy their liabilities and indicate the creditors' protection degree. Profitability ratios were used to measure the efficiency and profit potential of the hotels.

Afterward, the relationship of the ratios' means for the four hotel categories was examined in order to conclude whether there are differences in the results and how they are related to the categorization of the hotels. The statistical method of fluctuation analysis used for the control of the means' differences is the analysis of fluctuation of one way variance, or one-way ANOVA.

## **Results and Discussions**

### ***Solvency Ratios***

Solvency ratios try to estimate the long-term course of the enterprise. In order for this to happen, the hotel's capital structure, or the distribution of capital among the net worth and the borrowed capital, should be studied. The excellent structure of capital depends on many factors and it will be the one finally to maximize the enterprise's profits with the least possible cost of capital and correlation between risk and apodosis (Bragg, 2002).

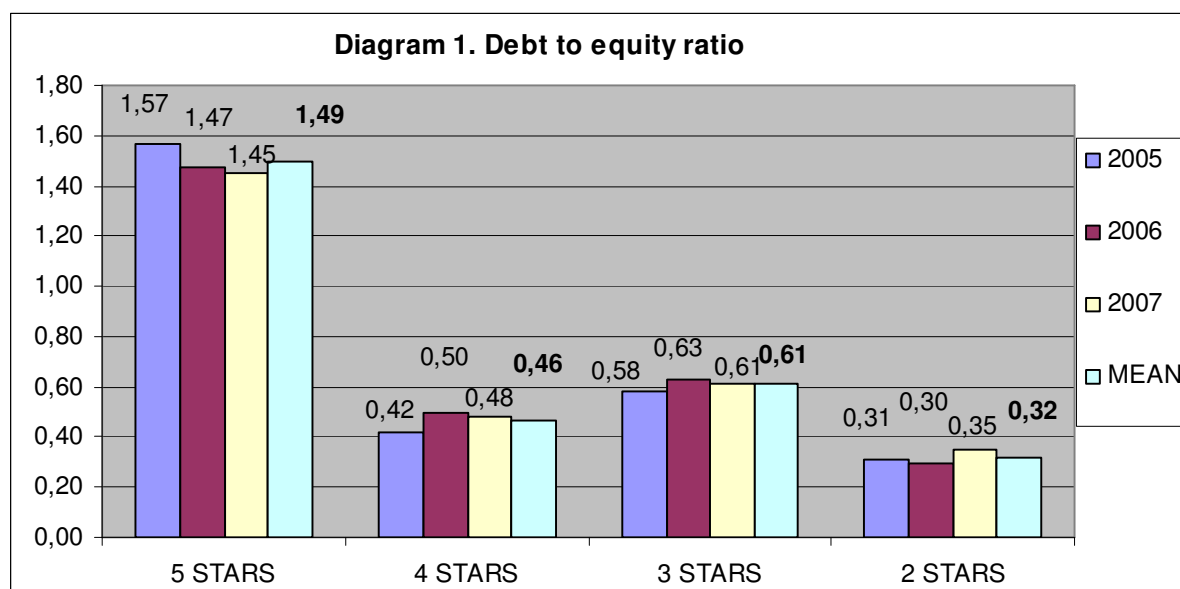
The most significant ratios attempting to estimate the long-term viability and capital structure of the enterprise are the following:

1. Debt to equity ratio estimates the relationship of the enterprises' net worth with liabilities, and consequently it is a significant indication of its capital structure. When the index increases it means that the total liabilities exceed the shareholders' equity, making the enterprise insolvent (Walsh, 1996). This index is a useful tool for the hotel to determine the amount of capital it wishes to borrow in the future. The course of the index for 2005-2007 and for each hotel category is present in Diagram 1, from which we can conclude that the

---

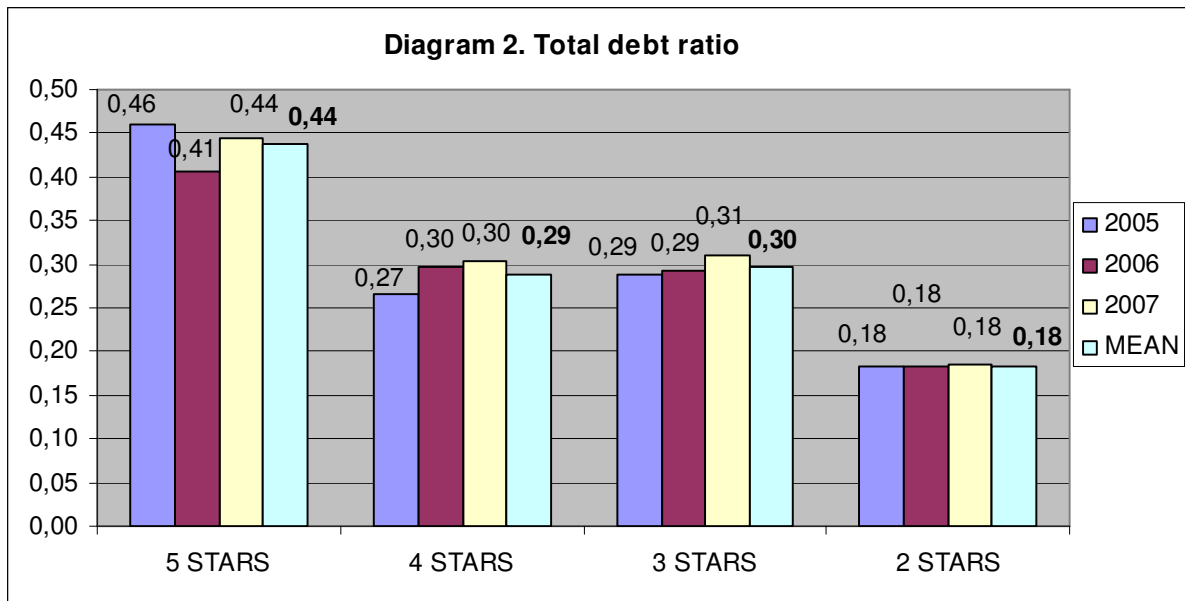
<sup>1</sup> Category C tax books: kept by SAs, limited partnerships, general partnerships, and limited liability companies.

differences in the three years examined are negligible for the same category of hotels. On the contrary, the differences in the indicator per category of hotels are obvious, mainly in the five star that present roughly 1.5 times higher total liabilities from total equity. The situation is better for hotels with three stars, since their total liabilities correspond to 60 percent of their total equity. The percentage for the four star hotels is smaller, less than 50 percent, while the smallest indicator appears in the two star hotels, with total liabilities just above the 30 percent of their total equity. In essence, the greater the index, the more analogously the creditors and suppliers participate in the capital of the enterprise (Sutton, 1979).

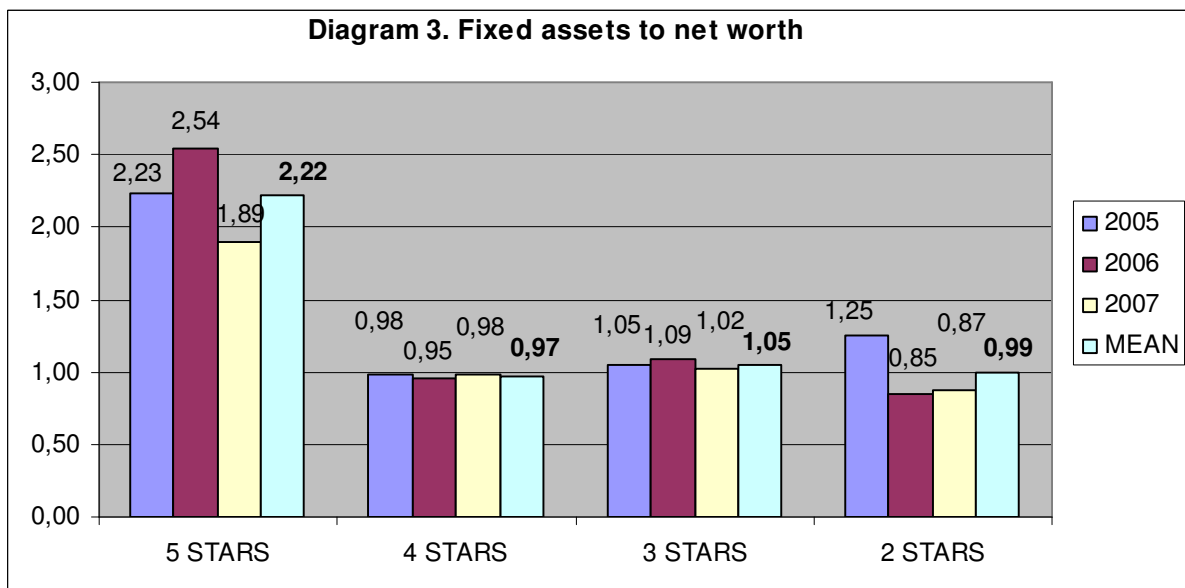


**2. Total debt ratio:** The total liabilities to total assets safety ratio estimates the percentage of liabilities that exist in the total assets. The lower the ratio is, the easier creditors proceed to further credits because the liabilities—third parties' participation in the total assets of an enterprise—is small, which means that the enterprise's debts are small. Consequently, the smaller the ratio, the more the potential of full discharge of all the enterprise's liabilities (Arsenos and Kaldis, 2008). The course of the ratio is presented in Diagram 2.

However, in general terms, what should be noted is that if the liabilities of the hotel are much less than its net worth, then the current marketing situation of the enterprise is positive. To the contrary, the over-borrowing makes the hotel indebted to third parties and if the circumstances allow it, the creditors may take advantage of it and place the hotel in a state of bankruptcy. Despite that, the proportion of equity and liabilities is a complex issue and varies proportionately for each activity sector (Artikis, 2003).



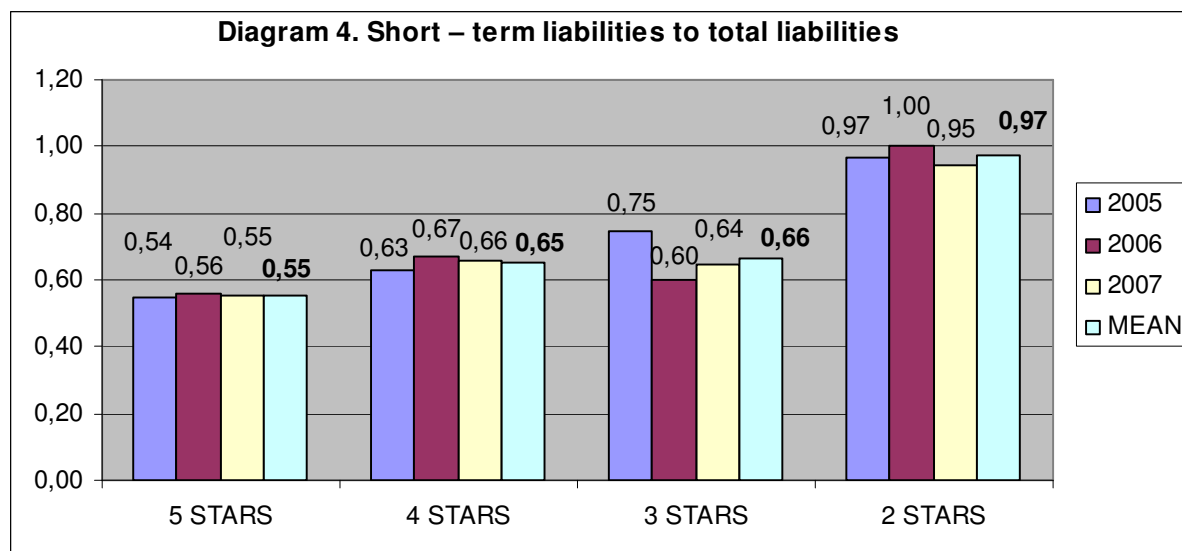
3. Fixed assets to net worth: This ratio estimates the security that an enterprise offers its clients. The value of the hotel's fixed assets and whether they can cover liabilities is estimated. The course of the ratio in question is presented in Diagram 3, from which one can conclude that the essential safety for stakeholders is higher with five star hotels because of the high fixed assets while the rest of the hotels are on about the same low levels.



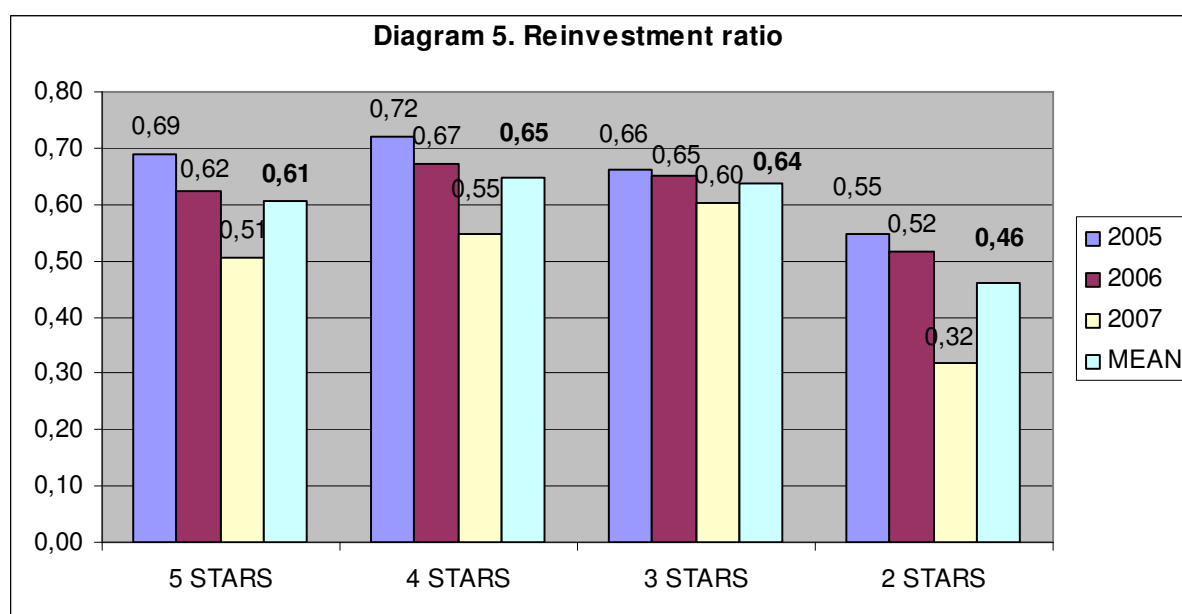
4. Short-term liabilities to total liabilities: The debt structure ratio estimates the relationship between short-term liabilities and total liabilities. As the ratio increases, the enterprise's position deteriorates. The course of the debt structure ratio for 2005-2007 is presented in Diagram 4.

We can observe that a hotel's short-term liabilities comprise a big part of their total liabilities. This rate ranges from approximately 55 per cent to 100 per cent for the three years under investigation, with the proportion of short-term to total liabilities increasing as the hotel category decreases. The high total liabilities are due to a great extent to the seasonal operation of the majority of most hotels.



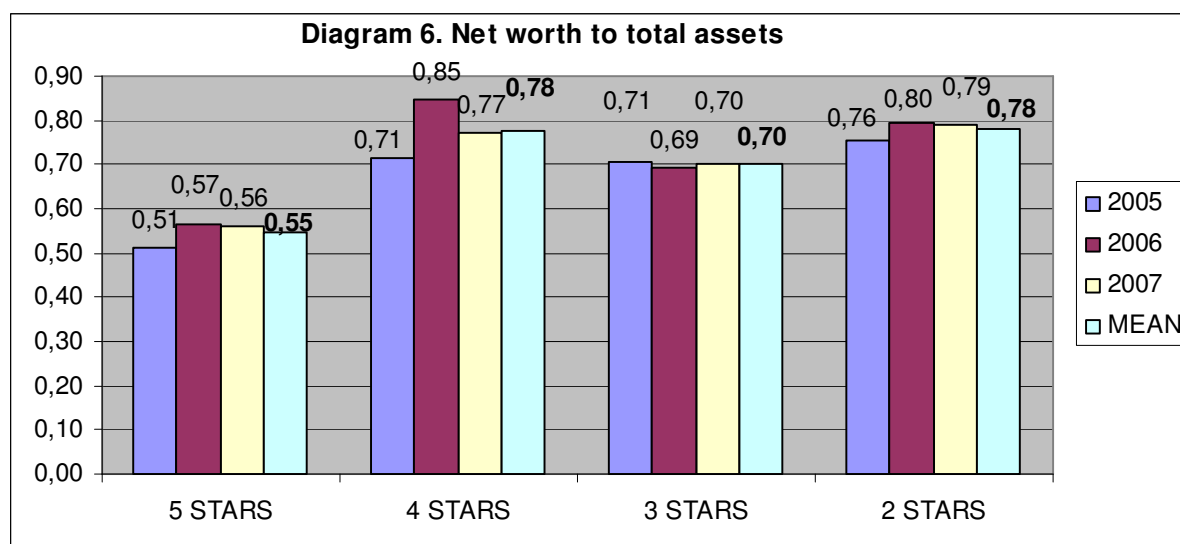


**5. Reinvestment ratio:** The ratio is derived from the difference of one minus dividends to distributed earnings and depends directly on the dividend policy of each enterprise determining the distributed earnings and reinvestment funds. The course of this ratio for the hotel sector is presented in Diagram 5, which shows that a significant percentage of net profit is utilised on new investment propositions. The downward course of the specific ratio is characteristic. It is derived from an increase in the dividends and consequently a decrease in the funds for investment purposes.



**6. Net worth to total assets:** The ownership ratio reflects what percentages of the total assets comprise the enterprise's net worth. This ratio is quite significant because it estimates the enterprise's ability to pay off its liabilities on a long-term basis. Moreover, the extent of the economic independence of an enterprise from its creditors and its borrowing **capability** is evaluated by this index. In short, a high ratio implies great economic independence and management autonomy. On the contrary, a low ratio means that the enterprise depends, to a great extent, on its creditors (Arsenos and Kaldis, 2008). For the hotel enterprises under examination, the ratio course is presented in Diagram 6.

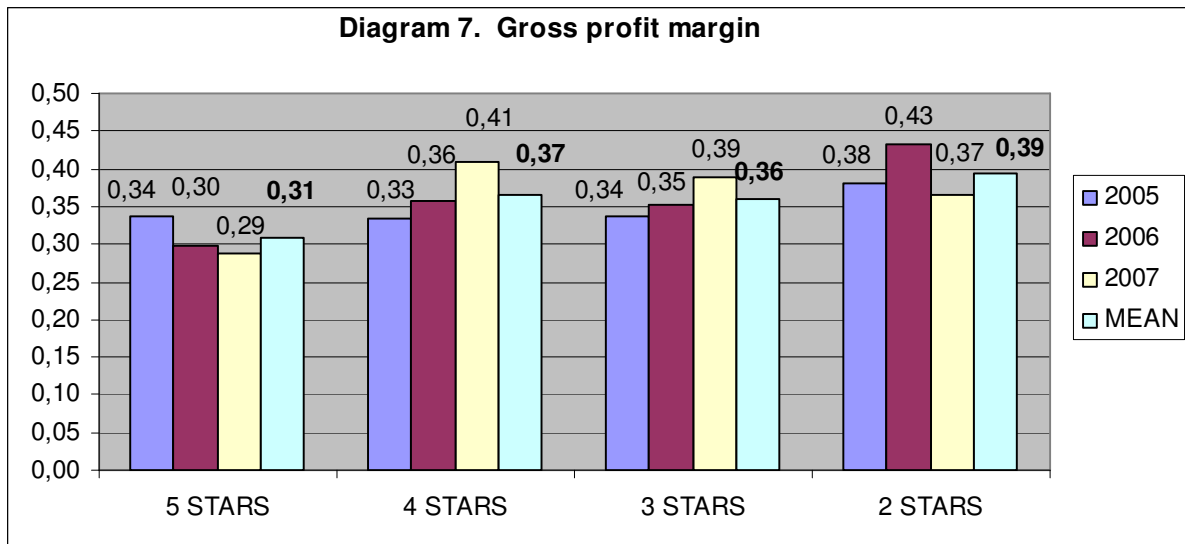
The mean of the ratio for five star hotels and for 2005-2007 is at 0.55, which means that in every 1 euro of the total capital, 55 cents come from the net worth. Respectively, for four star hotels the rate is at 0.78, 0.70 for three star hotels, and 0.78 for two star hotels. The lowest ratio is found in five star hotels, a fact which is yet another indication that in the specific category the investments and involvement of third parties in these enterprises remains high in all three years under examination.



### ***Profitability analysis***

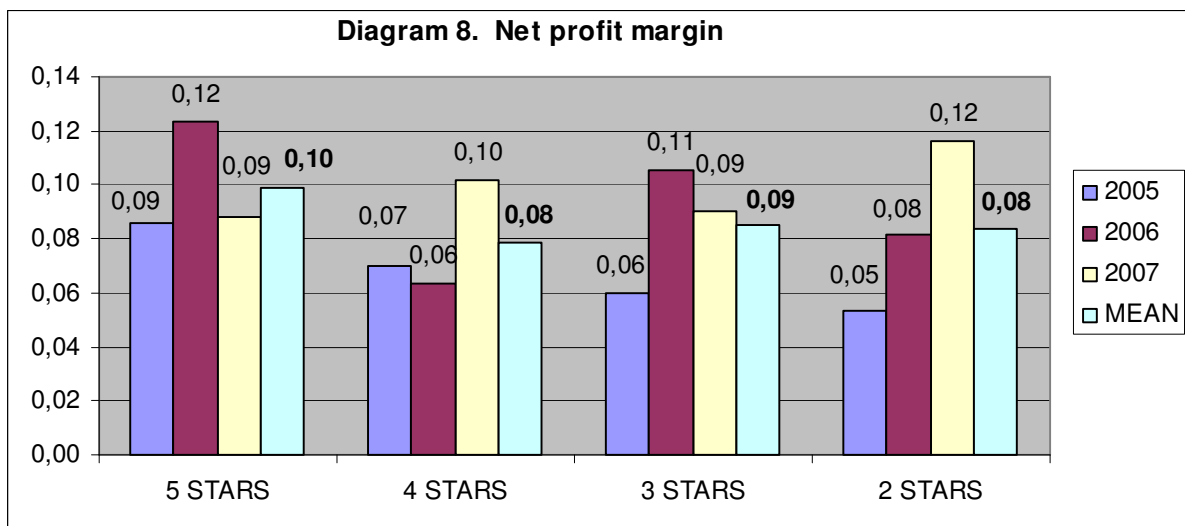
For most enterprises, especially hotels, management efficiency is usually evaluated according to the indicators of profitability or other indicators of business efficiency (Geller, 1985). Payments to stakeholders and creditors for the capital they have invested are directly related to the enterprise's ability to make a profit, which is its main reason of operation. The measurement of the enterprise's ability is pursued through the establishment of profitability indices that demonstrate the profit relationships between the capital invested and sales profits (Thomsett, 2006). These indices express the hotel's ability to make profits, depict how effectively the hotel operates and whether or not these profits were satisfactory. The course of the most significant profitability indices in 2005-2007 for the hotels keeping tax books of category C is presented below.

7. The gross profit margin ratio is significant because apart from studying the relationship of gross profit and sales, it depicts the operational effectiveness of the hotel and its pricing policy. When the ratio is high, the hotel management is in a position to buy low inexpensive and sell high. On the contrary, when the ratio is low, it means that the hotel makes investments that do not keep pace with its sales volumes (Schoenebeck, 2001). These are decisions of a problematic management in the department of purchases and sales which lead to a decrease in profitability for an enterprise (Artikis, 2003). The gross profit margin ratio is presented in Diagram 7.

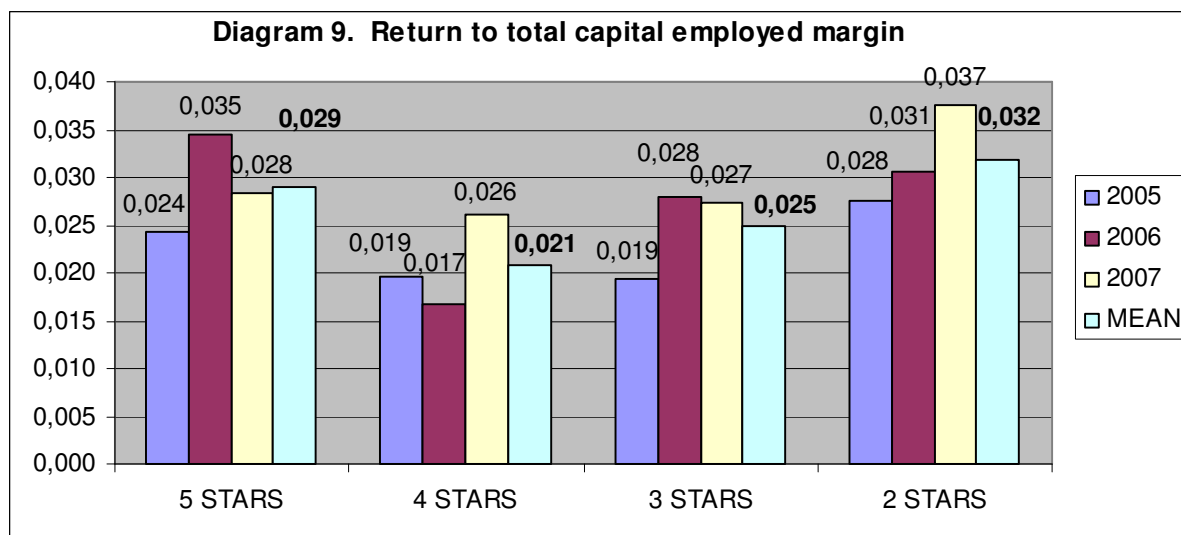


The mean ratio for five-star hotels and for 2005-2007 implies that for every sale of goods or service provided at the value of a monetary unit, the enterprise's gross profit corresponds to 0.31 monetary units. The corresponding rate for four-star hotels is 0.37, 0.36 for three-star hotels and 0.39 for two-star hotels.

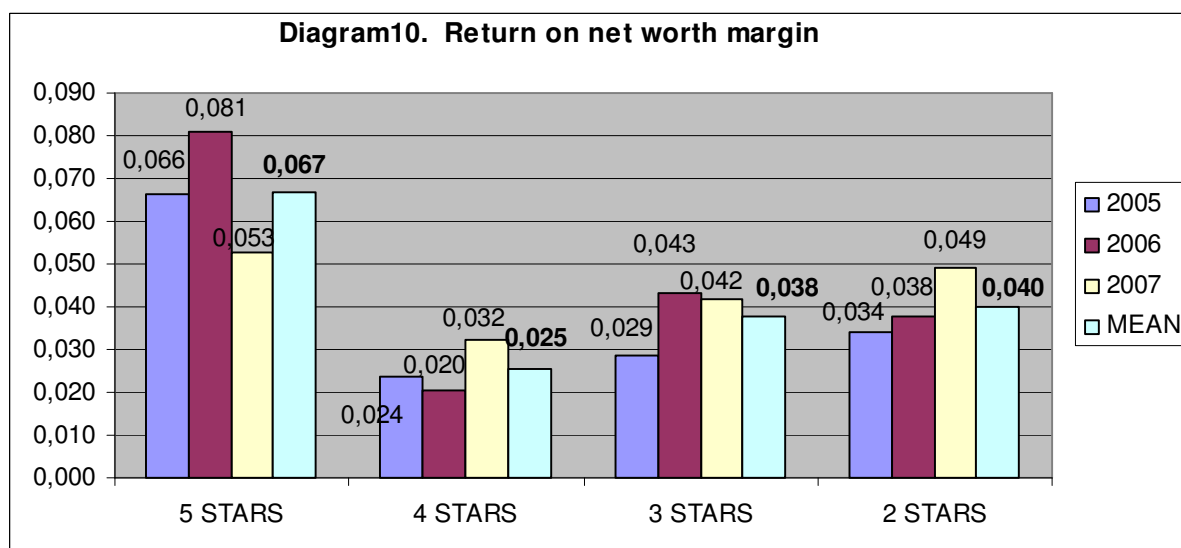
8. The net profit margin ratio shows “the profit percentage which stays in the enterprise after the subtraction of sales cost and current expenses, from the net sales” (Niarchos, 1984: 84). As the ratio increases, the more profitable the hotel becomes. In combination with the study of the gross profit ratio, the approach to the internal operations of the hotel is more complete. Diagram 8 shows the course of the net profit ratio. In 2005 and 2006 the differences were quite significant, something not true for 2007.



9. The return to total capital employed margin ratio studies the profitability of the enterprise independently from the origin of its capital. It estimates its ability to make profits while it evaluates the management's ability to manage the net worth and liabilities satisfactorily. Diagram 9 presents the course of the ratio.

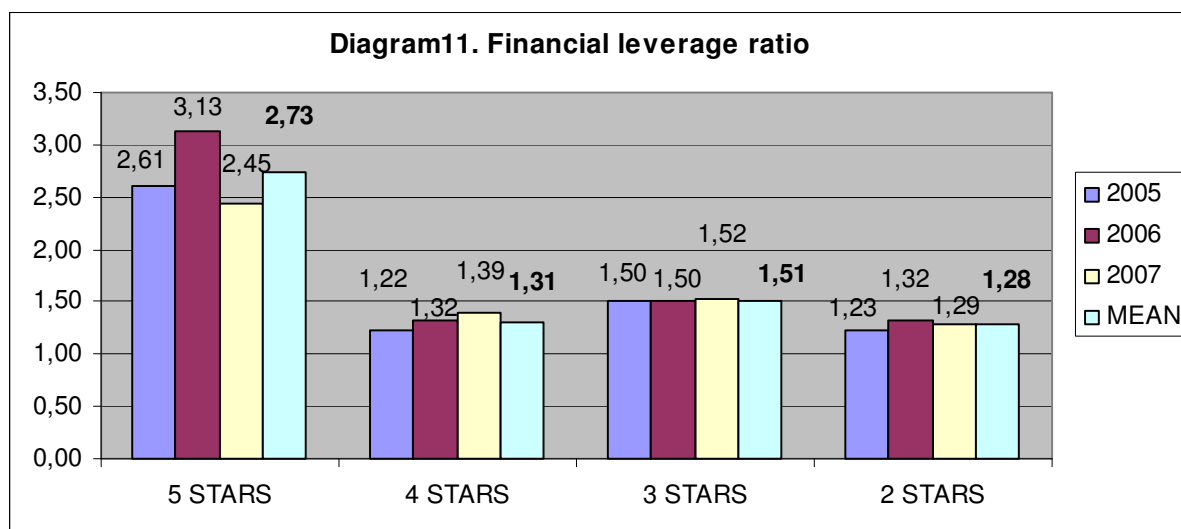


10. The return on net worth margin ratio estimates the effectiveness by which the net worth is used in the hotel. The ratio is significant because it depicts the hotel's potential to make profits. When the ratio is low, it indicates the enterprise's bad course. In contrast, a high ratio is characteristic of successful management. Diagram 10 presents the course of the ratio for the enterprises in the hotel sector for 2005-2007.



11. From the combination of the two ratios above, we arrive at the financial leverage ratio. The term leverage means the operation of an economic unit through lending capital. When a hotel borrows at an interest rate of 12 per cent, for instance, and then uses the capital it has borrowed to achieve profitability of 20 per cent, it makes a significant profit. The ratio depicts the percentage of variation of the net operational profits when it modified the net profits before taxes by 1 per cent (Athanasopoulos et al., 2008). When the ratio of financial leverage is more than one, then the use of borrowing capital is constructive and profitable. When the ratio is lower than one, then the use of lending capital affects the hotel negatively. Finally, when the ratio equals one, then there is no effect of the lending capital on the hotel. The course of the ratio is presented in Diagram 11, which shows that for all three years under examination the profitability of net worth is higher than the profitability of the total capital; therefore, the impact of the use of liabilities is positive and profitable. The course of the ratio follows an upward course for 2006, while in 2007 it was approximately at the same level as

2005. The ratio of the five-star hotels stands out from the rest of the sector's hotels, a fact that makes the liabilities inflow more profitable for high class hotels.



Then, the differences in the ratios' means are examined in all classes of hotels. Using ANOVA fluctuation analysis, according to Siomkos and Vasilikopoulou (2005), the cases under examination are:

H<sub>0</sub>: The means of the groups under examination (ratios' means) are equal (the differences are due to random factors).

H<sub>1</sub>: The means of the groups under examination are different (the difference is due to the influence of the independent variable).

The cases under examination for the total of the ratios through the ANOVA control are:

H<sub>0</sub>: Mean of five star hotels=mean of four star hotels=mean of three star hotels=mean of two star hotels.

H<sub>1</sub>: The means of solvency and profitability ratios of hotels of all four categories differ. This examination imposes the following prerequisites:

- A. The variable data must not present extreme rates, that is, their distribution should approach the normal distribution.
- B. The sample must be representative and should be derived from a random sampling. Based on the hypothetical theoretical framework, this is in effect because all the hotels have common characteristics concerning the books of the Code of Tax Books and Records they keep and because their grouping takes place according to the stars of the category to which they belong. This hypothesis is considered for the analysis of the rest of the indices as well. Consequently we can make some generalizations in relation to the interpretation of the results. This hypothesis is considered for all the hotel categories.
- C. The fluctuations of the groups of the different hotel categories should be equal. This prerequisite is satisfied by conducting a homogeneity test. More analytically, the Levene's test examines the hypothesis that the fluctuation is the same among all four hotel categories. "If the Levene's test is significant on a statistically significance of 0.05 or smaller, then the zero hypothesis must be rejected" (Siomkos and Vasilikopoulou 2005, p. 237). This means that the hypothesis that all the hotel

categories have the same fluctuations will be rejected. The test results are presented in Table 1.

**Table 1**  
**Aggregate table of Levene's test to assess variance homogeneity**

	Levene Statistic	df1	df2	Sig.
Debt to equity ratio	16,623	3	169	,000
Total debt ratio	6,114	3	169	,001
Fixed assets to net worth	9,340	3	169	,000
Short-term liabilities to total liabilities	1,247	3	169	,295*
Reinvestment ratio	2,078	3	118	,107*
Net worth to total assets	2,863	3	169	,038
Gross profit margin	1,082	3	169	,358*
Net profit margin	2,975	3	169	,033
Return to total capital employed margin	2,186	3	169	,091*
Return on net worth margin	4,549	3	169	,004

\* $p > 0.05$ , an approximately equal variance between groups

The homogeneity test above shows that  $p$  is greater than the .05 statistical significance level for the gross profit margin, return to total capital employed margin, short-term liabilities to total liabilities ratio and reinvestment ratio. Therefore, the fluctuations of these indices among the hotel categories are similar or homogenous while the rest of the hotel indices have a significance of  $p < 0.05$  are differentiated depending on the star category and are not homogenous as to the fluctuation.

**Table 2**  
**Aggregate table of the ANOVA test**

		Sum of Squares	df	Mean Square	F	Sig.
Debt to equity ratio	Between Groups	30,594	3	10,198	20,690	,000*
	Within Groups	83,299	169	,493		
	Total	113,893	172			
Total debt ratio	Between Groups	1,554	3	,518	16,306	,000*
	Within Groups	5,370	169	,032		
	Total	6,924	172			
Fixed assets to net worth	Between Groups	75,190	3	25,063	12,108	,000*
	Within Groups	349,826	169	2,070		
	Total	425,017	172			
Short-term liabilities to total liabilities	Between Groups	5,944	3	1,981	9,216	,000*
	Within Groups	36,335	169	,215		
	Total	42,279	172			
Reinvestment ratio	Between Groups	1,474	3	,491	3,430	,019*
	Within Groups	16,910	118	,143		
	Total	18,384	121			
Net worth to total assets	Between Groups	1,963	3	,654	13,961	,000*
	Within Groups	7,919	169	,047		

	Total	9,881	172			
Gross profit margin	Between Groups	,116	3	,039	,526	,665
	Within Groups	12,455	169	,074		
	Total	12,571	172			
Net profit margin	Between Groups	,037	3	,012	,624	,601
	Within Groups	3,338	169	,020		
	Total	3,375	172			
Return to total capital employed margin	Between Groups	,031	3	,010	5,411	,001*
	Within Groups	,322	169	,002		
	Total	,353	172			
Return on net worth margin	Between Groups	,112	3	,037	8,597	,000*
	Within Groups	,737	169	,004		
	Total	,849	172			
Financial leverage ratio	Between Groups	71,850	3	23,950	6,796	,000*
	Within Groups	419,385	119	3,524		
	Total	491,235	122			

\* Sig <0.05. There is a significant difference between the groups' mean scores.  $H_1$  is verified.

Observing Table 2 we can see that the rate of F has a significance level of  $p < 0.05$  for the debt to net worth margin, total liabilities to total assets, fixed assets to net worth, short-term liabilities to total liabilities, reinvestment ratio, and also net worth to total assets, return to total capital employed margin, return on net worth margin and the financial leverage ratio. Consequently, since the possibility rate is smaller than the crucial limit of 0.05, it implies that there is a statistically significant difference among the compared means. Thus,  $H_1$  is verified.

The respective rate of F for the gross profit margin and net worth margin indices has a level of significance at  $p = 0.0665$  and  $0.601$ , respectively. Since this rate is higher than the crucial limit of  $p = 0.05$ , there is no statistically significant difference among the compared means. Consequently, the hypothesis  $H_0$  is verified.

## Conclusions

The creation of ratios is a very useful tool for management, so they can take prompt and appropriate measures. They not only express the relationship between financial statements but it also studies the extent of correlation in given numerical data. At this point it would be useful to present the results from the process of financial statements. Relative to the financial structure and solvency ratios the following could be noted for the three-years examined by this study:

The debt to net worth margin ratio shows the high degree of loans by five star hotels in relation to the rest of the categories for the years under investigation. This explains to an extent the high rate of the short-term liabilities to total liabilities ratio in five star hotels from the rest of the hotel categories. Moreover, the fixed asset to net worth ratio is significantly different for five star hotels, which does not apply to the rest of the hotel categories. In relation to the short-term liabilities to total liabilities ratio, as the hotel category increases the short-term liabilities decrease during all three years. Where the reinvestment ratio is concerned, it is estimated that its downward course for all the hotel categories in 2005-2007 is

derived from the increase in dividends and consequently the decrease in the funds for investment purposes.

Considering the results of the ANOVA test, this paper concludes that among all the means of the ratios investigated, with the exception of the gross profit margin and the net profit margin, the difference is statistically significant.

The study of the profitability ratios for 2005-2007 led to the following conclusions:

- The gross profit margin ratio does not present differences among the hotel categories except for 2006 and 2007 when a high rate in two star and four star hotels respectively is depicted.
- In the net profit ratio a significant non-uniformity for 2005 and 2006 is observed, which is nearly eliminated in 2007.
- The higher ratio of the return to total capital employed margin is achieved by five and two star hotels, while the highest ratio of return on net worth margin was recorded by five star hotels. The lowest values in both ratios were depicted in four star hotels.
- Five star hotels demonstrate a great difference in the abilities of better management and consequently the realization of profits. The other hotel categories follow without especially significant deviations, with the exception of four star hotels which have a higher operational cost than two or three star hotels. The difference in the gross profit margin for four star hotels is evident, contrary to the net profit margin which increases from the last place in 2005 to the same level as the other categories in 2007.
- The best profitability for the return to capital employed margin was achieved by two star hotels followed by five hotels, while the best return on net worth margin was achieved by five star hotels and the worst by four star hotels. The rest of the hotels ranged between the levels of the five and four star hotels.
- The examination of the financial leverage ratio concluded that the investment of lending capital does not affect hotels significantly, with the exception of five star hotels where the lending capital inflow is especially profitable and useful.

In summary, the differences between the ratios of the hotels included in the sample are owed mainly to the hotels' different categorization. The research, for the homogeneity reasons that were explained previously, included financial data for only three years. Also, it should not be overlooked that no other factors were addressed in the present research, which might have influenced the results of research to some degree.

As stated in the introduction, this study contains some limitations. One factor that may affect the research's findings is the non-inclusion in the financial analysis of other ratios such as liquidity and activity, because they might influence the differences and their causes between hotels of various categories substantially. The evaluation of other factors beyond hotel categorization, such as the size of hotels, their geographic location, seasonality etc., along with the elaboration of financial data for a longer period should be investigated in future research for a complete illustration of hotels' financial strengths and weaknesses.



## References

- Andrew, W. P., & Schmidgall, R. S. (1993). *Financial Management for the Hospitality Industry*. Lansing, MI: Educational Institute of the American Hotel & Lodging Association
- Arsenos P., Kaldis P. (2008). *Applied Business Finance*. Athens. Patakis editions (in Greek)
- Artikis G. (2003). *Financial Management, Analysis and Programming*. Athens: Interbooks (Greek).
- Athanasopoulos K., Georgopoulos A., Mpellas A. (2008). *Financial Statements' Analysis*. Department of Business Administration. University of Patras. (Greek)
- Barjaktarovic, D., Barjaktarovic L. (2010). Possibilities of Financial Support to Small and Medium Hotel Companies in Serbia. *Journal of Economics*, Vol. 1 (1), pp. 1-11.
- Bragg, S. (2002). *Business Ratios and Formulas a Comprehensive Guide*. New Jersey: John Wiley & Sons
- Brinker, B. (1992). From the Editor: The State of Cost Management. *Journal of Cost Management* 4, pp. 3–4.
- Bromwich, M. and Bhimani, A., *Pathways to Progress*, Chartered Institute of Management Accounts, London, 1994.
- Burgess, C., Hampton, A., Price, L. and Roper, A. (1995). International Hotel Groups: What Makes Them Successful? *International Journal of Contemporary Hospitality Management*, Vol. 7 No. 2/3, pp. 74-80
- Burgess, C. (2006). Hotel Unit Financial Management—Does it Have a Future? In: Harris, P., Mongiello, M. (Eds.), *Accounting and Financial Management: Developments in the International Hospitality Industry*. Butterworth-Heinemann, pp. 282–298.
- Chan, W. and Wong, K. (2007). Towards a More Comprehensive Accounting Framework for Hotels in China. *International Journal of Contemporary Hospitality Management*. Vol. 19 (7), pp. 546–559.
- Chew, D. H. (1997). *Studies in International Corporate Finance and Governance Systems*. New York, Oxford: Oxford University Press
- Collier, P. and Gregory, A. (1995). Strategic Management Accounting: a UK Hotel Sector Case Study. *International Journal of Contemporary Hospitality Management*, Vol. 7 No. 1, pp. 16-21.
- Cooper, R., Kaplan, R.S. (1991). Profit Priorities from Activity-Based Costing. *Harvard Business Review* May–June, 130–135.
- Doyle, P. (1994). Setting Business Objectives and Measuring Performance. *European Management Journal*, Vol. 12 No. 2, pp. 123-32.
- Emmanuel, C., Otley, D., Merchant, K. (1990). *Accounting for Management Control*. London: Chapman & Hall
- Geller, N.A. (1985). The Current State of Hotel Information System. *The Cornell Hotel and Restaurant Administration Quarterly*. 26(1):14-17.
- Giacomino D. E., Mielke D.E. (1993). Cash flows: Another Approach to Ratio Analysis. *Journal of Accountancy*, 175 (3), 55-58

- Harris, P., Mongiello, M. (2006). *Accounting and Financial Management: Developments in the International Hospitality Industry*. Butterworth-Heinemann, Oxford.
- Harris, P., Brown, B. (1998). Research and Development in Hospitality Accounting and Financial Management. *International Journal of Hospitality Management*, Vol. 17 (1), pp.161–181.
- Kisang R, Shawn J. (2004). Performance Measurement through Cash Flow Ratios and Traditional Ratios: A Comparison of Commercial and Casino Hotel Companies, *Journal of Hospitality Financial Management*, Vol. 12 (1), pp. 15-25
- Kotas, R. (1999). *Management Accounting for Hospitality and Tourism*. Surrey: International Thomson Business Press.
- Lazaridis G., Papadopoulos D. (2002). *Financial Management, Volume B*. Thessaloniki Lazaridis – Papadopoulos Editions
- Mia, L., Patier, A. (2001). The Use of Management Accounting Systems in Hotels: An Exploratory Study. *International Journal of Hospitality Management* 20 (2), 111–128.
- Mills, J. R. and Yamamura, J. H. (1998). The Power of Cash Flow Ratios. *Journal of Accountancy*, 186 (4), pp. 53-62.
- Min, Ho., Min, Hy., Joo, S.J., Kim, J. (2009). Evaluating the financial performances of Korean luxury hotels using data envelopment analysis, *The Service Industries Journal*, Vol. 29(6), pp.835-845
- Mpozos D. (2007). *Solvency Indicators*. Technologistiki S.A. (Greek).
- Niarhos N. (1984). *Economic Analysis of Financial Statements: Theory and Practice*. Athens, Sakoulas Ed. (in Greek).
- Palepu K., Healy P., Bernard V. (2004), *Business Analysis & Valuation - Using Financial Statements*. Thomson.
- Papadopoulos D. (1986). *Business Financial Statements Analysis. 2<sup>nd</sup> Edition. Vol. A & B*. Thessaloniki, Paratiritis Ed. (Greek).
- Pavlatos O., Paggios I. (2009). A Survey of Factors Influencing the Cost System Design in Hotels. *International Journal of Hospitality Management* Vol. 28, pp. 263–271
- Phillips Paul A. (1996). Strategic Planning and Business Performance in the Quoted UK Hotel Sector: Results of an Exploratory Study. *International Journal of Hospitality Management* Vol. 15 No. 4, pp. 347- 362
- Schoenebeck, K. (2001). *Interpreting and Analyzing Financial Statements*. New Jersey: Prentice Hall.
- Siomkos G., Vasilikopoulou A. (2005). *Applications of Methods' Analysis in Market Research*. Athens: Stamoulis ed.
- Sutton, D. (1979). *Financial Management in Hotel And Catering Operations*. London: Heinemann.
- Thomsett, M. (2006). *Getting Started in Fundamental Analysis*. New Jersey: John Wiley & Sons
- Vranas A. (1991). Models of Probability for the Forecast of Economic Failure of Greek Industrial Enterprises. *SPOUDAI*, Vol. 41 (4), pp.431, University of Piraeus (in Greek).

Walsh, C. (1996). *Key Management Ratios: How to Analyze, Compare and Control the Figures that Drive Company Value*. London: Pitman Publications.

Ward, K. (1992). *Strategic Management Accounting*, Butterworth-Heinemann, Oxford

---

Mihail N. Diakomihalis is a lecturer in the Department of Accounting, Technological Educational Institute of Epirus, Greece.