

Is timeshare good for firm value and profitability? Evidence from segment reporting

Firm value and profitability

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Abstract

Purpose – This study aims to take advantage of segment reporting to provide empirical evidence on the impacts of increasing the share of revenue generated from the timeshare segment in companies' portfolios for firm value and profitability.

Design/methodology/approach – This paper examines data from five publicly traded hospitality companies that have a timeshare component and carries out different regression analysis using 69 observations ranging from 1998 to 2016.

Findings – The findings support the idea of an inverted U-shaped relationship between the degree of timeshare business (DOT) and firm value and profitability. However, for positive values of DOT, an increase of DOT consistently has a negative impact on firm value and accounting profitability.

Research limitations/implications – This study adds to previous findings through the addition of new variables and contemporary accounting practices. Though sufficient for the analyses conducted, the limited number of observations raises generalizability issues. Further research with larger data sets is advised.

Practical implications – This study implies that timeshare may continue to grow, but not as a segment in the lodging sector; rather as an industry mainly composed of timeshare-dedicated companies. As firms consider diversification or consolidation, this study may inform decisions related to potential firm value.

Originality/value – This study provides evidence to support previous literature related to spin-off activity in the lodging sector. Perhaps more importantly, this study adds value to research on firm value and profitability by extending traditional models and by developing a new “degree of business” variable using segment reporting.

Keywords Lodging, Firm value, Timeshare, Segment reporting, Accounting profitability, SFAS No. 131

Paper type Research paper

Introduction

Timeshare, nowadays known as vacation ownership, represents one of the major and most rapidly growing segments in the hospitality industry (Gregory and Weinland, 2016; Redditt *et al.*, 2017). Given the growth in the industry, some studies have attempted to better explain this concept, as well as its constant growth (Barreda *et al.*, 2016). However, only

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Nabawanuka and Lee (2009) analyzed the impacts of its operations on firm value and accounting performance in publicly traded US hotels. As a result, an important research gap was found at three levels.

First, according to Nabawanuka and Lee (2009), the company's timeshare operations should reside within an optimum threshold, 4-5 per cent of total operations, as, after this optimal point, the companies' firm value is negatively affected by this business. Such results were based on data from 1993 to 2006, which means only the first years of timeshare as an operational segment. Thus, further research is needed to verify if such impacts are maintained over the long term, not only because operations' experience may play a moderating role in performance (Koh *et al.*, 2009), but also because the outlook for this industry is positive, indicating that it will continue to grow (ARDA, 2016).

Second, Nabawanuka and Lee (2009) utilize the number of properties to measure the degree of timeshare operations. However, in accounting and financial literature, as well as in other contexts in the hospitality literature, the measurement commonly used to estimate the relative importance of a segment or business is based on segment revenue (Cereola *et al.*, 2017; Lail *et al.*, 2015). Hence, this paper will take advantage of contemporary reported segment data under SFAS No. 131 to develop a new proxy to estimate the degree of timeshare business based on segment revenue (DOTr).

Third, important variables and controlling factors have been neglected: timeshare operations experience (EXPt), as the entrance in the timeshare market may have a dissimilar impact when comparing with a more constant presence of this segment; dividend payout (DIV), known by influencing performance (Choi *et al.*, 2011; Kang and Lee, 2014); and the degree of franchising business (DOF) that has showed a significantly association with firm value (as measured by Tobin's Q) in the lodging industry (Choi *et al.*, 2011; Kang and Lee, 2014; Koh *et al.*, 2009).

Hence, this paper contributes to the literature by extending previous research using a larger timeframe that spans over 18 years of timeshare as a segment in the lodging sector (from 1998 to 2016), by adding to the literature a new proxy for the degree of timeshare business consistent with current literature, by bringing attention to other factors that influence the impacts of timeshare operations in the companies' firm value and accounting profitability and lastly, by highlighting the relevance of the data that are shared on the disclosure about segments in the hospitality context, specifically for a segment in such a need for research.

The findings of this research indicate that lodging companies are negatively affected in terms of firm value and accounting profitability, if they add timeshare as a segment in their portfolio. Contrary to the previous research, which suggests an optimum point of timeshare operations, the present study suggests that lodging companies should not have a timeshare segment. Rather, if big hotel chains aim to enter the timeshare business, a timeshare-dedicated company should be created.

The paper is organized as follows: after this introduction, the framework of this study will be presented, by introducing the timeshare segment, the firm performance measures used in the hospitality industry, the literature on the disclosure about segments and the hypothesis development. Then, the methodology is explained, and it is followed by the results. Lastly, the conclusion constitutes the last section before the references.

Literature review

Background on the timeshare industry

The timeshare concept had its beginnings in Europe in 1967. The concept rapidly came to America, as a response to the economic recession and the downturn in the housing market

during the 1970s. Although the timeshare concept has been a success since its inception (based upon increasing sales volumes, customer counts and resort development), it has suffered from an unsavory reputation in the early years, largely due to high pressure and misleading sales tactics used by unethical developers (Upchurch and Gruber, 2002).

The industry has renamed itself, and is now known as vacation ownership, one of the fastest-growing segments of the hospitality industry (Redditt *et al.*, 2017). According to Penela *et al.* (2019), this industry has experienced uncommon growth rates and has not shown signs of slowing down. Because of the potential of this industry, some of the world's largest hospitality companies have entered this market, including Marriott, Hilton, Four Seasons, Hyatt, Westin and Disney. Adding to the expansion in growth, the big hotel chains' entrances have also contributed to boost the credibility of this industry (Upchurch and Gruber, 2002).

Nevertheless, not everything in this industry is positive. For example, this industry is also facing a lot of external pressure from new market entrants such as Airbnb. These new forms of sharing economy have emerged in the past few years, and they have showed to decrease hotel revenues (Zervas *et al.*, 2013). Further, the Airbnb supply is unpredictable as a new Airbnb host can arise at a simple click, unlike hotel and timeshare investments which can take years to build and can cost millions of dollars (Gibbs *et al.*, 2018). Adding to that, according to Nabawanuka and Lee (2009), companies can benefit from having timeshare products in their portfolio in an initial stage, but the benefits may disappear after a certain optimum level of timeshare operations. The author found an inverted U-shaped relationship between timeshare operations and firm's value (measured by Tobin's Q). Finally, different lodging companies have spun-off their timeshare business in the past few years (De La Merced, 2015). According to De La Merced (2015), one of the reasons behind it is the need to slim down the firm's operations and to improve stock prices.

Firm performance measures in the hospitality industry

For every publicly traded firm, performance is imperative. The measurement of firm performance depends on the context, as it is possible to come across studies using a wide array of measures. First, from an accounting perspective, researchers have been using the following measures: sales growth (Kim and Kim, 2005; Lee *et al.*, 2015), profit margin (Sohn *et al.*, 2013) and firm profitability with ROA, ROE, ROS (Kang and Lee, 2014; Lee *et al.*, 2015). This view assumes that profitability represents the firm's ability to generate earnings and to grow. Nevertheless, researchers have been criticizing the use of accounting measures of performance. For example, Koh *et al.* (2009) mention that measures such as ROA can be affected by the increased expenses that can occur in the short term (e.g. consulting fees) which could lead to misrepresentation of the market values. Additionally, Lee *et al.* (2015) explain that none of them represents the value of the firm, as they do not represent what investors would pay to buy the firm.

Henceforward, another viewpoint is suggested in the finance literature, where stock market measures are believed to better represent the value of a firm, that is, the value investors are willing to pay for the firm (Lee *et al.*, 2015). Examples are: market-to-book value (Ozdemir and Kizildag, 2017) and price-earnings ratio (PER). However, Tobin's Q is the most commonly used measure in extensive research, as researchers consider it a combination of both viewpoints (Kang *et al.*, 2010; Koh *et al.*, 2009; Sohn *et al.*, 2013). Even though, there are authors who disagree with the use of Tobin's Q to measure performance, such as Dybvig and Warachka (2011), who argue its ambiguity when evaluating corporate governance, Tobin's Q is still believed to be a measure that reflects what the market perceives about the firm performance (Khanna, 2014). Additionally, it uses readily available

balance sheet information, making it appropriate for research (Chung and Pruitt, 1994). Given the prominence of its use in extant research, the desire to extend current findings and the lack of a prolific alternative, for the purposes of this paper, Tobin's Q was chosen as the proxy of firm value.

Additionally, and in consistency with existing research (Kang *et al.*, 2010; Park and Jang, 2012), accounting measures were also included in this research to test for accounting profitability. The authors believe both dimensions measure different things. On one side, profitability means the short-term performance of a firm that is based on a previous accounting period, while firm value refers to a long-term value represented by the expected future economic benefits (Kang *et al.*, 2010). Profitability can be measured in different ways. The most common are return on the assets (ROA), return on stockholders' equity (ROE) and return on sales (ROS) (Kim and Kim, 2005). For the purposes of this research, ROE and ROA were chosen. ROE because, according to Nabawanuka and Lee (2009), it is a relevant measure in this context, and then ROA, because, according to Oak and Dalbor (2008), for lodging firms, it is important to have high ROA for operating and managerial efficiency, as this business is characterized by having both business and real estate components. ROS was not considered, as according to Kim and Kim (2005), the results could be misleading due to its dependency on the management ability of a firm instead of the level of direct earnings from customers or buyers. Research demonstrates that, while profitability and value are acceptable measures of firm performance, a standard measurement for the degree of the firms' involvement in a segment is still in development. Thus, the next section will discuss the importance of an imperative component of this research – segment reporting.

Segment reporting: SFAS No. 131

An important research topic in financial accounting is segment reporting (Bens, Monahan and Steele, 2016). Investors tend to consider firms with multiple segments to be less transparent and more complex. Thus, segment performance data are being considered as the most useful data for investment decisions (Chen and Liao, 2015).

Prior to 1997, firms had to report their segment data under *Statement of Financial Accounting Standards No. 14* (SFAS No. 14) (FASB, 1975). Accordingly, firms were required to report line-of-business segment information based on the *industry* segments (Bens *et al.*, 2016). However, this statement was typically criticized, mostly because of the wide definition of *industry* that allowed companies to report only a broadly single segment. Therefore, different improvements were desired by users and listed by the American Institute of Certified Public Accountants (AICPA) which included:

[...] greater number of segments for some enterprises, more information about segments, segmentation that corresponds to internal management reports, and consistency of segment information with other parts of an annual report (Street *et al.*, 2000).

As a response to these requests, in June 1997, the FASB issued SFAS No. 131, *Disclosure about Segments of an Enterprise and Related Information* (FASB, 1997). Mainly, this statement requires firms to report their segments consistently with the management organization of business and to report accounting items essential to assess segment performance (Nichols *et al.*, 2013). This method is called the *management* approach, and it aims to reflect the firm's internal reporting structure (Bens *et al.*, 2016).

In the hospitality industry, prior to SFAS No. 131, companies reported mainly the geographical segments or reported only one segment. After SFAS No. 131, companies had to report the segments according to their management structure. As a result, timeshare started to appear as a separate segment with all the relevant accounting data disclosed. For the

purposes of this paper, this segmentation was critical as the new “Segmental information” section of annual reports allowed to manually collect the timeshare-only revenues and compare them with the companies’ total revenues. The next section will develop the research questions and hypotheses of this research by giving examples of similar research using segment data.

Related literature and hypothesis development

The purpose of this study is to take advantage of segment reporting to provide empirical evidence on the impacts of increasing the share of revenue generated from the timeshare segment in companies’ portfolios for firm value and profitability. Among the literature referring to the timeshare segment, to the best of our knowledge, only Nabawanuka and Lee (2009) have focused on the impacts of this operational segment. In their study, they used the number of properties to estimate the degree of timeshare business, that is, the relative importance of this segment in companies’ portfolio. The higher the number of timeshare properties on the total of properties, the higher the percentage of operations of timeshare compared to total operations. However, this measurement is not consistent with what has been applied in contemporary accounting and financial literature (Cereola *et al.*, 2017; Lail *et al.*, 2015) and in other contexts in the hospitality literature (Choi *et al.*, 2011; Kang and Lee (2014). To estimate the relative importance of a segment or business, the measurement most commonly used is based on segment revenue, using for that the reported segment data. Specifically, most studies divide the segment revenues by the total revenues of the firm to assess the degree of importance of that segment. Thus, this study is proposed to add to the timeshare literature an explanatory variable that serves as a proxy for the degree of timeshare business (DOTr), using the reported segment information.

Furthermore, Nabawanuka and Lee’s (2009) study has not included controlling factors that may influence the intrinsic relationship between the degree of timeshare business and firm value/accounting profitability. Thus, this study will also test the possible confounding effects of three new variables as a sensitivity analysis. The first variable is DIV. According to various authors (Choi *et al.*, 2011; Kang and Lee, 2014), the dividend payout data contain information about the future investments and expected cash flows of the firms, which can influence firm performance (as measured by Tobin’s Q). For example, an increase in dividend payout can point out a positive sign about future cash flows of the firm, which can increase firm value (Choi *et al.*, 2011). Thus, this variable can be a confounding factor in this study, and therefore, it needs to be controlled.

The second factor is EXPt. The number of years of experience in operations of a certain business may have an impact on performance (Koh *et al.*, 2009). For example, in the early years of certain business, the company may have advantages because of improved economies of scale, which may help the company to grow. On contrary, if high start-up costs are needed, negative impacts on performance are expected, which can later be dissipated if benefits exceed costs. Thus, in the case of timeshare business, an inverted or a U-shaped relationship can be expected if the entrance in the timeshare market has a dissimilar impact when comparing with a more constant presence of this segment in the company’s portfolio, not only in regard to firm value, but also concerning accounting profitability. In other words, timeshare operations experience may confound the pure relationship between DOTr and firm value/accounting profitability.

Finally, the last factor to be included is the DOF. In different industries, franchising has been adopted as a key business strategy (Hsu and Jang, 2009). The lodging industry is no exception. Different research has focused on why firms adopt franchising and its effects on performance (Choi *et al.*, 2011; Kang and Lee, 2014; Koh *et al.*, 2009). However, there are no

conclusive findings regarding its direction (Ozdemir and Kizildag, 2017). According to Srinivasan (2006), DOF can have either a positive or a negative impact depending on firm characteristics. Nevertheless, according to the literature, it is expected that DOF has a significant association with either Tobin' Q and ROE/ROA (Aliouche *et al.*, 2012; Choi *et al.*, 2011; Moon and Sharma, 2014; Ozdemir and Kizildag, 2017; Sohn *et al.*, 2013). Therefore, to find reliable and valid results regarding the impact of timeshare operations on performance, it is crucial to control for the impact of franchising on performance.

With this in mind and based on the relationships tested by Nabawanuka and Lee (2009), the following research question and subsequent hypotheses arise:

- RQ1.* Does an increase in the percentage of timeshare business affect firm value and accounting profitability?
- H1.* There is an inverted U-shaped relationship between the degree of timeshare business and firm value as measured by Tobin's Q.
- H2.* There is an inverted U-shaped relationship between the degree of timeshare business and accounting profitability as measured by ROA.
- H3.* There is an inverted U-shaped relationship between the degree of timeshare business and accounting profitability as measured by ROE.

The suggested inverted U-shaped relationship between the variables is mainly explained by the diversification theory (Park and Jang, 2012). That is, in a first stage, the firm becomes more diversified, and performance may improve. However, in a second stage, the firm can become ill-diversified, that is, the percentage of timeshare business becomes higher and takes attention from the main business (Choi *et al.*, 2011; Koh *et al.*, 2009; Lee *et al.*, 2014). Additionally, some authors have showed that diversification strategies have also a positive and significant effect on profitability in the short run, which turned negative and significant in the long run (Lee *et al.*, 2014; Moon and Sharma, 2014). This is consistent with the recent spin-off announcements of the timeshare segment in which firms indicate that aim to concentrate on the lodging business and to create a new company only focused in developing the vacation ownership business.

Methodology

Data collection

The data were retrieved from the *COMPUSTAT* database provided through the Wharton Research Data Service, on the companies that are listed on the New York Stock Exchange (NYSE), or National Association of Securities Dealers Automated Quotation (NASDAQ) or American Stock Exchange (AMEX), under one of the following Standard Industrial Classification (SIC) codes: 7011 – *Hotels and Motels*; 6531 – *Real Estate Agents and Managers*.

To get to these two codes, we used the SIC System Search of US Department of Labor – Occupational Safety and Health Administration that allows us to examine the 1987 version of SIC manual structure, as well as to perform a keyword search. As it can be drawn from the literature, the timeshare business can be associated either with the lodging or with real estate industry (Penela *et al.*, 2019). Therefore, we looked for the divisions/major groups in which these industries should be included, reaching Major Group 70: *Hotels, Rooming Houses, Camps, And Other Lodging Places* (Division I) and Major Group 65: *Real Estate* (Division H). The drilldown details of Major Group 70 allowed us to identify the SIC code 7011 – *Hotels and Motels*, that most researchers have been using when studying the lodging

industry (Kim *et al.*, 2013; Moon and Sharma, 2014; Sohn *et al.*, 2013). And, the SIC code 6531 – *Real Estate Agents and Managers*, in which the establishments that engage in *time-sharing real estate: sales, leasing, and rentals* are included. For this analysis, we excluded REIT establishments (SIC code 6798).

Then, it was necessary to manually identify the companies under these SIC codes that are involved with timeshare business. To select the companies, the SEC Electronic Data Gathering and Retrieval (EDGAR) system was used to download the companies' 10-K and to conduct a keyword search for words related to timeshare. Only 12 companies satisfied the four criteria:

- (1) being under one of the two SIC codes;
- (2) having filled the 10-K reports to SEC;
- (3) being on stock market and having information available on COMPUSTAT; and
- (4) being involved in the timeshare business. However, for our analysis, not all companies could be considered.

First, companies with only one segment of timeshare business were excluded from this research, as it is not possible to perform the regression analysis with no variance in the main independent variable (DOTr = 100 per cent). Additionally, not all companies identify timeshare as an operating segment, and as a result, the revenue data are not disclosed. Thus, only five companies were considered for this research: MAR, HLT, HOT, WYN and BXG (Table I). Data spanned from 1998 to 2016, as segmental data were only available after FASB issued SFAS No. 131. In total, 69 yearly observations were considered for analysis. However, the database is unbalanced, due to the fact that, for some companies, in some years, there is no information available for particular variables. For example, Hilton was out of the stock market from 2009 to 2012, and Wyndham only went public in 2006.

Finally, even though most accounting data were retrieved from the COMPUSTAT, the 10-K reports were also searched manually for the information on the disclosure about segments necessary to estimate DOTr in each firm.

Model

This study begins by exploring the three hypothesized relationships using the new proxy for the DOTr. *H1* analyzes a quadratic relationship between DOTr and Tobin's Q, and *H2*

Company name	NYSE/NASDAQ	SIC code	Observation
<i>Marriott Corporation</i>	MAR	7011	<i>Included</i>
Marriott Vacations Worldwide	VAC	6531	Only-timeshare
<i>Hilton Worldwide Holdings</i>	HLT	7011	<i>Included</i>
Hilton Grand Vacations Inc.	HGV	7011	Only-timeshare
<i>Starwood Hotels and Resorts Worldwide</i>	HOT	7011	<i>Included</i>
Vistana Signature Experiences, Inc.	VSE	7011	Only-timeshare
<i>Wyndham Worldwide Corporation</i>	WYN	7011	<i>Included</i>
Diamond Resorts International, Inc.	DRII	7011	Only-timeshare
Hyatt	H	7011	No revenue data
Intercontinental Hotels Group PLC	IHG	7011	No revenue data
Interval Leisure Group, Inc.	NASDAQ: ILG	6531	Only-timeshare
<i>Bluegreen Corporation</i>	BXG	6531	<i>Included</i>

Table I.
List of companies identified as having timeshare business

and *H3* a quadratic relationship between the degree of timeshare business and the firm's accounting profitability as measured by ROA and ROE:

$$Q = \alpha_0 + \alpha_1 \text{DOTr} + \alpha_2 \text{DOTr}^2 + \alpha_3 \text{SIZE} + \alpha_4 \text{LEVERAGE} + \alpha_5 \text{TREND}$$

$$\text{ROA (ROE)} = \alpha_0 + \alpha_1 \text{DOTr} + \alpha_2 \text{DOTr}^2 + \alpha_3 \text{SIZE} + \alpha_4 \text{LEVERAGE} + \alpha_5 \text{TREND}$$

where Q represents the proxy of firm value using the approximate Tobin's Q suggested by [Chung and Pruitt \(1994\)](#). ROE and ROA represent the accounting profitability as measured by the ROE and ROA, respectively. DOTr represents the degree of timeshare business measured by dividing the revenues of timeshare by the total revenues. DOTr² represents the quadratic form of the DOTr. SIZE represents firm size, measured by the log of sales. LEVERAGE represents the firm's capital structure, estimated by the debt-to-asset ratio. And lastly, TREND controls for a time trend.

In terms of estimation method, this study faces an important challenge – the firm-specific effects. These effects refer to an unobservable heterogeneity in each firm's behavior that affects the panel estimation. To overcome the heterogeneity problems and to avoid heteroscedasticity, the fixed-effects estimation with heteroskedastic-robust standard errors is commonly used, as it controls the variation in error terms between heterogeneous firms ([Park and Jang, 2012](#)).

Variables and measures

One of the dependent variables of this research is the firm value of a company. To measure it, the approximate Tobin's Q suggested by [Chung and Pruitt \(1994\)](#) was chosen, as data collection is facilitated because of its computational simplicity, and it has been used in the timeshare context ([Nabawanuka and Lee, 2009](#)). The approximate Tobin's Q is:

$$\text{Approximate Tobin's Q} = (\text{MVE} + \text{PS} + \text{DEBT})/\text{TA},$$

where MVE represents the product between firm's stock price and the number of common shares outstanding; PS represents the liquidating value of outstanding preferred stock; DEBT represents the value of short-term liabilities net of short-term assets plus the book value of long-term debt and TA represents the book value of total assets.

Additionally, two other dependent variables will be used, ROA and ROE serving as proxies for the short-term performance. To measure ROA, this study uses the ratio between EBITDA and total assets. For ROE, it will be used the ratio between EBITDA and stockholders' equity.

With regards the independent variables, DOTr serves as a proxy for the DOTr, and it is measured by dividing the revenue of timeshare segment by total revenues. The square form of DOTr will be also included in the model (DOTr²) to study the curvilinear relationship already found by [Nabawanuka and Lee \(2009\)](#). As proposed in the literature, this variable was computed using two steps ([Koh et al., 2009](#)). First, the differences between the mean value of DOTr and the DOTr were calculated, and then, these differences were squared. This process is advised as it alleviates a multicollinearity problem that can be found using the variance inflation factor (VIF) to test this issue. The variables used in the research

conducted by Nabawanuka and Lee (2009) will be also computed (DOTp and DOTp^2) to compare the results with the new proxy.

Similar to previous studies, control variables were also included in the estimated models. First, the firm size (SIZE), estimated by the log of sales. This is a common practice in the literature, and according to diverse authors (Choi *et al.*, 2011; Kang *et al.*, 2010), this variable controls for the effect of larger firms performing better than small ones. Thus, a positive relationship is expected between firm size and performance. Additionally, the logarithmic transformation of this variable is advised as it smooths the distribution (Koh *et al.*, 2009). Second, this study uses LEVERAGE, estimated by the debt-to-asset ratio, to control for any systematic effect of changes in the capital structure in the firm's performance (Nabawanuka and Lee, 2009). And third, a time trend because, with a large T (number of years of observation), it does not make sense to include time dummies for each year, as low degrees of freedom can block the calculations of some statistic tests, such as F -test, and also because long panel data are better suited to time-series analysis that commonly apply linear time trends and/or quadratic time trends (Baltagi, 2008).

Moreover, this research is proposed to examine other factors that can influence the relationship of firm value/accounting profitability and DOT. The first factor is the DIV. This variable will take the form of a dummy variable that takes the value of 1 if dividend payments exist, and 0 otherwise. The second factor is EXPt, meaning the number of years with timeshare operations. Similar to the study performed by Koh *et al.* (2009), the present study will control for the likely effect of timeshare experience on the relationship between the DOTr and Q/ROA/ROE. The natural log figure is used because the logarithmic transformation smooths the distribution, and it has become a common practice (Koh *et al.*, 2009). Finally, the last factor to be included is the DOF. This variable is estimated by dividing the number of franchised properties by the number of total properties. Table II summarizes all the information regarding the main variables in this study.

Results

Descriptive analysis

This research is comprised of five publicly traded hospitality companies that have a timeshare component: Marriott, Starwood, Hilton, Wyndham and Bluegreen. In terms of observations, 69 observations were considered for the majority of the analysis. However, when analyzing the variable DOF, the observations of the firm *Bluegreen Corp* had to be dropped, as no data were available. The main reason for the size of the data set is the limited number of public companies in the stock market with timeshare business. Additionally, the information provided regarding timeshare revenues is also limited because such information began to be reported only after the issuance of SFAS No. 131. With regards to the descriptive statistics of the data, they can be found in Table III.

Before performing further analysis, the Pearson's correlation test was also conducted to determine the presence of correlations between the variables, as well as to examine the possible existence of multicollinearity. The findings indicate that DOTr and DOTr^2 have a significant and negative correlation with Q (proxy for firm value) at the 0.05 significance level and 0.01 significance level, respectively. Regarding the correlations with the dependent variable ROA, only the quadratic form of DOTr and LEVERAGE have a significant and negative correlation at the 0.05 significance level. The dependent variable ROE and the independent variable dividend (DIV) do not show any significant correlations with the other variables. As the results show some correlations between the independent variables, VIF was calculated before conducting the regression analysis to test for multicollinearity. All VIFs were below the acceptable cutoff value of 10 (Ott and Longnecker, 2001).

Table II.
Variables
information
summary

Variable name	Variable label	Measurement	Research supporting it
Tobin's Q	Q	(MVE + PS + DEBT)/TA	Chung and Pruitt (1994) Nabawanuka and Lee (2009) Kang <i>et al.</i> (2010) Sohn <i>et al.</i> (2013)
Return on assets	ROA	EBITDA divided by total assets	Oak and Dalbor (2008) Kang <i>et al.</i> (2010)
Return on equity	ROE	EBITDA divided by stockholders' equity	Nabawanuka and Lee (2009) Kang <i>et al.</i> (2010)
Degree of timeshare business	DOTr	Revenues from timeshare segment divided by total revenues	Choi <i>et al.</i> (2011) Dong <i>et al.</i> (2014) Lail <i>et al.</i> (2015) Cereola <i>et al.</i> (2017)
Degree of timeshare business	DOTp	Number of timeshare properties divided by total properties	Nabawanuka and Lee (2009)
Firm size	SIZE	Log of sales	Nabawanuka and Lee (2009) Kang <i>et al.</i> (2010) Choi <i>et al.</i> (2011)
Leverage	LEVERAGE	Debt-to-asset ratio	Nabawanuka and Lee (2009) Kang <i>et al.</i> (2010)
Dividend payout	DIV	Dummy variable that takes the value of 1 if dividend payments exist, and 0 otherwise	Kang <i>et al.</i> (2010) Choi <i>et al.</i> (2011) Kang and Lee (2014)
Timeshare business experience	EXPt	Log of the number of years of timeshare experience	Koh <i>et al.</i> (2009)
Degree of franchising business	DOF	Number of franchised properties divided by number of total properties	Choi <i>et al.</i> (2011) Kang and Lee (2014)

Table III.
Descriptive statistics

Variables	N	Mean	Sd.	Min	Max
Tobinq	69	1.1833	0.4185	0.4666	2.2838
ROA	69	0.0344	0.0334	-0.1122	0.1124
ROE	69	0.1349	0.1858	-0.4586	0.8557
DOTr	69	0.3008	0.2478	0	0.8112
SIZE	69	8.1346	1.2058	5.5121	9.4719
LEVERAGE	69	0.3983	0.1213	0.1529	0.6586
DIV	69	0.7391	0.4423	0	1
EXPt	69	15.2319	6.8495	1	28
DOF	52	0.6899	0.2041	0.3900	0.9791

Regression analysis

As previously mentioned, to test the hypotheses of this study, different regression analyses were carried out. The fixed-effects estimation was performed individually for both DOTr and DOTp as independent variables, and for Q, ROA and ROE as dependent variables, including SIZE, LEVERAGE and the TREND as control variables (Table IV). Regarding DOTr as an independent variable, the results indicate that both DOTr and DOTr² have a negative and significant impact on Q. These findings suggest an inverted U-shape relationship between the degree of timeshare business and the firm value. That is, from a certain point on, an increase in the DOT negatively impacts the companies' firm value. The

Variables	Tobin's Q			ROA			ROE		
	Coefficient	SE		Coefficient	SE		Coefficient	SE	
DOTr	-1.6750**	(0.5782)		0.0579	(0.1350)		-0.0884	(0.6194)	
DOTr ²	-0.0018**	(0.0005)		-0.0003	(0.0001)		-0.0011*	(0.0005)	
DOTp			15.6508*			3.8449***			18.9323**
DOTp ²			-0.0000**			-0.0000			-0.0000
SIZE	-0.0390	(0.1637)	-0.1889	0.0056	(0.0191)	-0.0234	0.0932	(0.1155)	-0.0411
LEVERAGE	-0.6866	(0.4525)	-1.3071*	-0.0903	(0.0627)	-0.2129***	0.2767	(0.5067)	-0.2027
t	0.0524***	(0.0074)	0.0624***	0.0009	(0.0018)	0.0044***	0.0101	(0.0143)	0.0266***
Constant	1.8742	(1.3135)	2.9245*	0.0182	(0.1431)	0.2470	-0.7278	(0.9278)	0.2022
Observations				69		54	69		54
R-squared			0.5033			0.2017	0.1482		0.2954

Notes:

$TobinQ = \alpha_0 + \alpha_1 DOTr + \alpha_2 DOTr^2 + \alpha_3 SIZE + \alpha_4 LEVERAGE + \alpha_5 TREND$ and

$TobinQ = \alpha_0 + \alpha_1 DOTp + \alpha_2 DOTp^2 + \alpha_3 SIZE + \alpha_4 LEVERAGE + \alpha_5 TREND$

$ROA = \alpha_0 + \alpha_1 DOTr + \alpha_2 DOTr^2 + \alpha_3 SIZE + \alpha_4 LEVERAGE + \alpha_5 TREND$ and

$ROA = \alpha_0 + \alpha_1 DOTp + \alpha_2 DOTp^2 + \alpha_3 SIZE + \alpha_4 LEVERAGE + \alpha_5 TREND$

$ROE = \alpha_0 + \alpha_1 DOTr + \alpha_2 DOTr^2 + \alpha_3 SIZE + \alpha_4 LEVERAGE + \alpha_5 TREND$ and

$ROE = \alpha_0 + \alpha_1 DOTp + \alpha_2 DOTp^2 + \alpha_3 SIZE + \alpha_4 LEVERAGE + \alpha_5 TREND$

Table IV.
Regression analysis on Q, ROA and ROE for both DOTr and DOTp as independent variables

variable time trend shows a positive and significant impact on Q at the 0.01 significance level. These results were expected, as, in long panel models, either a positive or negative tendency is usually present (Arbelo-Pérez *et al.*, 2017; Ruggiero and Lehkonen, 2017; Shi *et al.*, 2018). In this case, Q tends to increase 0.0524 per year. Finally, concerning both SIZE and LEVERAGE, a negative and non-significant impact was found. For SIZE, these results are contrary to what was expected, as firms with higher sales are expected to perform better. However, these findings are similar to what was found in Nabawanuka and Lee (2009). On the other hand, the negative impact of LEVERAGE was already expected.

With respect to the second model used to test H2, in which ROA is used as a dependent variable, the results do not show any significant relationships. Nevertheless, DOTr² has a negative sign, which also indicates a potential inverted U-shape relationship. Finally, the last model, addressing H3, uses ROE as a dependent variable. In this case, the DOTr² has a negative and significant impact at 0.1 significance level. Again, an inverted U-shape relationship was expected. These results are consistent with the findings of Nabawanuka and Lee (2009).

As previously mentioned, the same analysis was performed using the variable degree of timeshare business measured as in Nabawanuka and Lee (2009) study – DOTp. The analysis reveals the same pattern, that is, an inverted U-shape relationship between DOTp and the three dependent variables: Tobin Q, ROA and ROE. However, ROA and ROE do not show significant relationships with DOTp². On the contrary, in all three models, DOTp exhibits a positive and significant relationship. However, these relationships can be misleading, as current literature suggests the proportion of revenues is a better measure for the relative importance of a segment (Cereola *et al.*, 2017; Dong *et al.*, 2014; Lail *et al.*, 2015).

Sensitivity analysis

Further examination was conducted to verify whether the impact of DOTr on Q, ROA and ROE varies if additional control variables are included. First, the additional control variables were included in the firm value model (Q) to control for the possible confounding effects. Table V presents the results. The main analysis model (Model 1) is compared with three other models in which one type of independent variable is added at the time. First, it includes DIV as independent variable (Model 2), then the EXPt and EXPt² (Model 3) and third the DOF (Model 4).

The results show that the inverted U-shape relationship is maintained, that is, variable DOTr² presents a negative sign in all models. However, the significance of some coefficients changes after each iteration. Therefore, these findings support the idea that these control variables should be added to the model, to find reliable results. For example, the introduction of EXPt and EXPt² in Model 3 appears to be relevant, as a negative and significant impact on Q was found. This suggests that a relationship between the timeshare experience and the firm value exists, and an increase in the experience of timeshare negatively impacts Tobin's Q from a certain point on. In Model 4, the relationship between DOF and Q is showed to be negative and significant, which it is contrary to some studies (Kang and Lee, 2014). Nevertheless, according to Srinivasan (2006), the degree of franchising increases for some firms and decreases for others when some firm characteristics are present. One notable finding on Table V is the impact of adding DOF as a control variable on the relationship between DOTr and DOTr² and Q. Although a significant and negative relationship at 0.1 significance level is maintained, the impact is not more significant at a 0.05 significance level (Model 1). Lastly, the variable DIV exhibits negative and significant impact on Q, at 0.01 significance level, showing to be relevant as control variable, and the negative impact of LEVERAGE becomes also significant at the 0.1 significance level.

Variables	Model 1		Model 2		Model 3		Model 4	
	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE
DOTr	-1.6750**	(0.5782)	-1.6759**	(0.5943)	-2.0247**	(0.6802)	-2.8454*	(1.1617)
DOTr2	-0.0018**	(0.0005)	-0.0018**	(0.0005)	-0.0013	(0.0006)	-0.0071*	(0.0024)
SIZE	-0.0390	(0.1637)	-0.0396	(0.1698)	0.0940	(0.1241)	-0.1544	(0.2276)
LEVERAGE	-0.6866	(0.4525)	-0.6864	(0.4624)	-1.1343*	(0.5034)	-1.6379*	(0.5804)
t	0.0524***	(0.0074)	0.0524***	(0.0082)	0.1452***	(0.0277)	0.1617**	(0.0437)
DIV			-0.0026	(0.0647)	-0.1980**	(0.0601)	-0.2737***	(0.0262)
EXPt					-1.1000**	(0.2734)	-1.0181	(0.5214)
EXPt2					-0.3242**	(0.0731)	-0.2581	(0.2072)
DOF							-3.6112**	(0.6740)
Constant	1.8742	(1.3135)	1.8807	(1.3633)	3.2031***	(0.6094)	8.0929***	(0.8103)
Observations	69		69		69		52	
R2	0.4604		0.4604		0.5184		0.5578	

Notes: Robust standard errors in parentheses. *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$

$$Model1: Q = \alpha_0 + \alpha_1 DOTr + \alpha_2 DOTr^2 + \alpha_3 SIZE + \alpha_4 LEVERAGE + \alpha_5 TREND$$

$$Model2: Q = \alpha_0 + \alpha_1 DOTr + \alpha_2 DOTr^2 + \alpha_3 SIZE + \alpha_4 LEVERAGE + \alpha_5 TREND + \alpha_6 DIV$$

$$Model3: Q = \alpha_0 + \alpha_1 DOTr + \alpha_2 DOTr^2 + \alpha_3 SIZE + \alpha_4 LEVERAGE + \alpha_5 TREND$$

$$+ \alpha_6 DIV + \alpha_7 EXPt + \alpha_8 EXPt^2$$

$$Model4: Q = \alpha_0 + \alpha_1 DOTr + \alpha_2 DOTr^2 + \alpha_3 SIZE + \alpha_4 LEVERAGE + \alpha_5 TREND$$

$$+ \alpha_6 DIV + \alpha_7 EXPt + \alpha_8 EXPt^2 + \alpha_9 DOF$$

Table V.
Regression analysis on Q with additional control factors

Following the same logic, this analysis was also performed for the relationship between DOTr and accounting profitability as measured by ROA and ROE. Again, the results indicate that the inclusion of the control variables DIV, EXPt, EXPt² and DOF shows to be relevant, as coefficients and significances have changed. First, in the case of ROA, no significant relationships were found in Model 1; however, after including all the variables, the DOTr and DOTr² were found to have a significant and negative impact on ROA at the 0.1 significance level (Table VI). These results are consistent with what is expected, as an increase on timeshare business can indicate an increase in assets, which can reduce ROA from a certain point on. The variable DOF also shows a significant and negative relationship with ROA at the 0.1 significance level. Lastly, LEVERAGE was also significant at the 0.05 significance level, which is consistent with previous research (Kang et al., 2010).

Regarding ROE, the results indicate that there is no evidence of significant relationships between the study variables. Nevertheless, the DOTr² showed a negative sign, similar to the models of firm value and ROA. This supports the notion that an increase in the timeshare business impacts negatively the companies' firm value and accounting profitability from a certain point on.

Discussion and conclusions

Main conclusion

The goal of this study is to evaluate the impacts of timeshare business in the lodging companies' firm value and accounting profitability. The results support the inverted

Variables	Model 1		Model 2		Model 3		Model 4	
	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE
DOTr	0.0579	(0.1350)	0.0645	(0.1269)	-0.0982	(0.1068)	-0.2207*	(0.0739)
DOTr2	-0.0003	(0.0001)	-0.0003	(0.0001)	-0.0001	(0.0001)	-0.0010*	(0.0003)
SIZE	0.0056	(0.0191)	0.0102	(0.0159)	0.0321**	(0.0110)	-0.0169	(0.0175)
LEVERAGE	-0.0903	(0.0627)	-0.0926	(0.0570)	-0.1078*	(0.0434)	-0.1174**	(0.0231)
t	0.0009	(0.0018)	0.0006	(0.0018)	0.0084	(0.0073)	0.0071	(0.0048)
DIV			0.0203	(0.0110)	0.0007	(0.0149)	-0.0079	(0.0194)
EXPt					-0.0948	(0.0659)	-0.0334	(0.0290)
EXPt2					-0.0411*	(0.0170)	-0.0155	(0.0074)
DOF							-0.5239*	(0.1844)
Constant	0.0182	(0.1431)	-0.0327	(0.1136)	0.0274	(0.1170)	0.7152*	(0.2615)
Observations	69		69		69		52	
R2	0.2017		0.2153		0.3081		0.2791	

Notes: Robust standard errors in parentheses. *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$

$$Model\ 1: ROA = \alpha_0 + \alpha_1 DOTr + \alpha_2 DOTr^2 + \alpha_3 SIZE + \alpha_4 LEVERAGE + \alpha_5 TREND$$

$$Model\ 2: ROA = \alpha_0 + \alpha_1 DOTr + \alpha_2 DOTr^2 + \alpha_3 SIZE + \alpha_4 LEVERAGE + \alpha_5 TREND + \alpha_6 DIV$$

$$Model\ 3: ROA = \alpha_0 + \alpha_1 DOTr + \alpha_2 DOTr^2 + \alpha_3 SIZE + \alpha_4 LEVERAGE + \alpha_5 TREND$$

$$+ \alpha_6 DIV + \alpha_7 EXPt + \alpha_8 EXPt^2$$

$$Model\ 4: ROA = \alpha_0 + \alpha_1 DOTr + \alpha_2 DOTr^2 + \alpha_3 SIZE + \alpha_4 LEVERAGE + \alpha_5 TREND$$

$$+ \alpha_6 DIV + \alpha_7 EXPt + \alpha_8 EXPt^2 + \alpha_9 DOF$$

Table VI.
Regression analysis
on ROA with
additional control
factors

U-shape relationship between DOT and firm value found by Nabawanuka and Lee (2009). However, they do not support the notion that firm value improves with an increase in a firm's timeshare operations. In fact, a negative and significant relationship between DOT and firm value was found, contrary to the positive and non-significant relation previously suggested. Thus, Figure 1 proposes that the maximum point is in the negative side of the x -axis, which means the impact of DOT on firm value will always be negative for positive values of DOT. In other words, the market does not perceive positively an entrance of lodging firms in the timeshare business.

These findings support extant current literature, as according to the diversification theory, it is known that investors can perceive negatively an increase in the share of timeshare revenues in total revenues, as they can consider the firm to become ill-diversified (Koh et al., 2009). However, in the case of timeshare that happened right from the beginning, which brings up attention to Kim et al. (2012) argument that, if a particular business experiences high growth rates, as is the case of timeshare, there is high probability of increased competition in the future, which leads investors to downgrade their expectations for the firm's stock, resulting in lower market value. Finally, the low reputation of timeshare, mostly due to high pressure and misleading sales tactics used by some developers (Upchurch and Gruber, 2002), can also be a factor influencing these relationships.

Theoretical implications

This paper presents important academic implications, when comparing with previous research in this area. First, this study identifies ROA as a significant dependent variable that should be considered when analyzing the impacts of timeshare business. Nabawanuka and Lee (2009) only considered ROE as a proxy for accounting profitability, but the fact that timeshare developments imply high investments in fixed assets emphasizes the importance of analysis on the impact of DOT on ROA. Second, the inclusion of DIV, EXPt, EXPt² and DOF was shown to be crucial to find significant relationships between Q/ROA/ROE and DOT. And third, the proxy for the degree of timeshare business used by Nabawanuka and Lee (2009) may not be the most appropriate one, as indicated by contemporary literature (Cereola *et al.*, 2017; Lail *et al.*, 2015; Kang and Lee, 2014). As a result, this study proposes that DOT should be measured using segmental revenue.

Practical implications

In addition to the academic research implications, the findings of this study may provide meaningful implications to practitioners, mainly regarding future trends in the lodging and timeshare industry. According to Kim *et al.* (2012), publicly traded hospitality firms aim to maximize the value of the firm. However, the results of this study indicate that, if companies get involved in the timeshare business by adding an operational segment, their firm value and accounting profitability may likely be negatively affected right from the beginning. The more they increase their percentage of timeshare business, the more negative the impact may be. As a result, it is expected that lodging firms with a timeshare segment will remove this business from their portfolio, and lodging firms without this segment will not be prone to invest in it – at least not heavily. Such findings are consistent with current decisions being made in the hospitality industry. That is, different lodging companies have spun-off their timeshare business in the past few years (De La Merced, 2015) and created timeshare-dedicated companies. This is an exit option that is known to increase firm value (Prezas and Simonyan, 2015).

Additionally, it is also consistent with current literature that suggests that lodging firms have been shifting their business strategy to a more “asset-light” strategy. That is, they are decreasing fixed-asset intensity, as it has been seen to have a positive impact upon firm value (Sohn *et al.*, 2013). Thus, a strategy, such as timeshare investments, that decreases the ROA will not be expected. In line with these results, it becomes clear that the timeshare business may continue to grow, but not as a segment in the lodging industry, but rather an industry mainly composed of timeshare-dedicated companies.

Limitations and future research

Although this study brings relevant contributions to the literature, it is not free from limitations. The first being a limited number of observations, as this study is limited, first, to

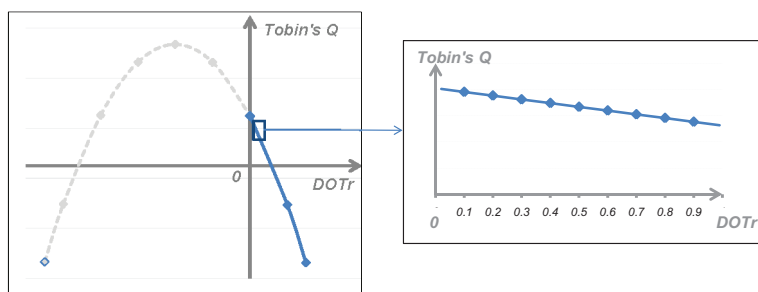


Figure 1.
Relationship between
Tobin's Q and DOTr

the companies in the COMPUSTAT database, second, to the companies that have timeshare business and third, to the companies that identify timeshare as an operating segment. Companies such as *Hyatt* and *Intercontinental Hotels Group* also have timeshare business, but they do not identify it as a segment. Therefore, no detailed information on the revenues is provided. Additionally, there are companies that have timeshare business, but are either independent developers (Gregory and Weinland, 2016) or private companies, such as Four Seasons. Thus, data are not publicly available for research. As a result, this research can only be generalized for companies in the stock market, as the characteristics of those companies can differ from non-publicly traded companies. Thus, further research is encouraged on the companies outside of this study data set, as well as beyond the timeshare segment.

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Further reading

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