



Determinants of capital structure: evidence from Turkish lodging companies

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Abstract

Purpose – The purpose of this paper is to investigate the factors affecting capital structure decisions of Istanbul Stock Exchange (ISE) lodging companies.

Design/methodology/approach – A model based on the trade-off and pecking order theories is specified and implications of both theories are empirically tested. The model is estimated using a dynamic panel data approach for five ISE companies for the period of 1994-2006.

Findings – The findings suggest that effective tax rates, tangibility of assets, and return on assets are related negatively to the debt ratio, while free cash flow, non-debt tax shields, growth opportunities, net commercial credit position, and firm size do not appear to be related to the debt ratio. Although the findings partially support the pecking order theory, neither the trade-off nor the pecking order theory exactly seem to explain the capital structure of Turkish lodging companies.

Research limitations/implications – The data used in this paper are limited to five companies traded in the ISE, since the data on other companies are not available. A more detailed analysis would use data for other companies in the industry.

Practical implications – The findings of the study clearly demonstrate the importance of capital structure decisions for financial sources.

Originality/value – Although the capital structure theory is extensively examined in the finance literature, there are fewer studies covering the tourism industry, particularly Turkey. The paper establishes the determinants of the capital structure of Turkish lodging companies. The research findings should help managers to make optimal capital structure decisions.

Keywords Capital structure, Tourism management, Turkey

Paper type Research paper

Introduction

Capital structure refers to the composition of a firm's liabilities and owners' equity. Capital structure decisions are related to the magnitudes of liabilities and owners' equity. Capital structure decisions are one of the three financing decisions – investment, financing, and dividend decisions – finance managers have to make (Van Horne and Wachowicz, 1995).

Capital structure of a firm determines the weighted average cost of capital (WACC). WACC is the minimum rate of return required on a firm's investments and used as the discount rate in determining the value of a firm. A firm can create value for its shareholders as long as earnings exceed the costs of investments (Damodaran, 2000). A number of theoretical and empirical studies investigated the optimal capital



structure of a firm. These studies pointed out the importance of the relationships among capital structure, cost of capital, capital budgeting decisions, and firm value.

Although capital structure theory is a widely studied topic, there are fewer studies on the capital structure of firms in the tourism industry. Kwansa and Cho (1995) investigated the impact of the trade-off between financial distress costs and tax earnings in the US restaurant industry. They reported a significant bankruptcy cost effect on capital structure and firm value. Upneja and Dalbor (1999) detected a positive relationship between before and after tax rates of US restaurant companies and their leasing activities. Özer and Yamak (2000) examined financial sources used by lodging companies with less than 100 rooms located in Istanbul. They found that lodging companies appear to use internal funds and debt, respectively, in their investment stage, while retained earnings are the major source of funds in the operating stage. Upneja and Dalbor (2001) found that debt ratio is positively related to growth opportunities, firm quality, and share of fixed assets for publicly traded US lodging companies. However, non-debt expenses and debt ratio seemed to be negatively related. Nuri and Archer (2001) found that the debt ratios in the UK lodging industry are higher than the debt ratios in the UK retail industry. They pointed out that the trade-off theory rather than the pecking order theory is more consistent with the lodging and retail industries. Dalbor and Upneja (2002) reported that the long-term debt usage positively relates to risk and firm size in publicly traded US restaurant firms. Furthermore, firm quality and growth opportunities, are found to be related negatively with long-term debt usage. Phillips and Sipahioğlu (2004) presented evidence on the independence of financial performance and capital structure for publicly traded British lodging companies. Moreover, lodging companies appeared to prefer external sources, since capital return is at a low level. Tang and Jang (2007) found that long-term debt level is positively related to fixed-assets level and growth opportunities for the US lodging companies. However, they failed to find evidence on the relationship of leverage ratio to volatility of earnings, firm size, profitability, and free cash flow.

Lodging companies are capital intensive, as they require huge capital at both investment and operating stages. Since assets of lodging companies mostly consist of fixed assets share of long-term debt and owners' equity becomes rather high. Furthermore, because of the structure of the industry, lodging companies are highly sensitive to systematic risks. Therefore, lodging companies face high operating and financial risks (Andrew and Schmidgall, 1993). All these make it important to determine the composition of capital structure and the factors affecting leverage decisions and debt ratio.

The purpose of this study is to investigate the variables that affect capital structure and debt decisions of the ISE lodging companies. Validity of the pecking order and trade-off theories for lodging companies is also tested. We estimate a dynamic fixed effects panel data model using the Arellano-Bond system generalized method of moments (GMM) method for five companies traded in the ISE. For each company, the data set includes 13 annual time series observations for the period from 1994 to 2006. Our findings suggest that effective tax rates, tangibility of assets, and return on assets seem to be negatively related to the capital structure of lodging companies. On the contrary, free cash flow, non-debt tax shields, growth-opportunities, net commercial credit position, and firm size do not appear to be related to the debt ratios of lodging

companies. Although our findings partially support the pecking order theory neither the trade-off nor the pecking order theory exactly seem to explain the capital structures of Turkish lodging companies.

The rest of the paper is organized as follows: Section 2 summarizes the trade-off and pecking order theories. Section 3 explains the data and the methodology. Section 4 provides the empirical results and Section 5 presents the conclusions. Section 6 presents limitations of study and Section 7 presents implications for future studies.

The trade-off and pecking order theories

The relationship between capital structure decisions and firm value has been extensively investigated in the past few decades. Over the years, alternative capital structure theories have been developed in order to determine the factors that affect capital structure decisions. Modigliani and Miller (1958) is a milestone among capital structure studies. In their first proposition, Modigliani and Miller (1958) state that market is fully efficient when there are no taxes. Thus, capital structure and financing decisions affect neither cost of capital nor market value of a firm. In their second proposition, they maintain that interest payments of debt decrease the tax base, thus cost of debt is less than the cost of equity. The tax advantage of debt motivates the optimal capital structure theory, which implies that firms may attain optimal capital structure and increase firm value by altering their capital structures. Bankruptcy and financial distress costs (Myers, 1977) and agency costs (Jensen and Meckling, 1976) constitute the basics of trade-off theory. Trade-off theory asserts that firms set a target debt to value ratio and gradually move towards it. According to this theory, any increase in the level of debt causes an increase in bankruptcy, financial distress and agency costs, and hence decreases firm value. Thus, an optimal capital structure may be reached by establishing equilibrium between advantages (tax advantages) and disadvantages (financial distress and bankruptcy costs) of debt. In order to establish this equilibrium firms should seek debt levels at which the costs of possible financial distress offset the tax advantages of additional debt.

An alternative to the trade-off theory is the pecking order theory (Myers and Majluf, 1984). Myers and Majluf (1984) assume that there is an information asymmetry among investors. Since investors generally have less information than insiders, common-stocks would be undervalued by the market. Moreover, firms do not have target capital structures. The pecking order theory states that firms prefer internal to external financing and debt to equity, if they issue securities. When firms use external funds, they first prefer issuing the safest security, that is debt, then convertible securities, and equity as a last resort. They use external financing only when their internal funds are insufficient.

The trade-off theory underlines taxes, while the pecking order theory emphasizes asymmetric information. Several studies investigated the empirical validity of these theories. In these studies, capital structure of firms is related to factors such as growth opportunities, share of fixed assets (tangibility), effective tax rates, non-debt tax shields, firm size, profitability, free cash flows, and net commercial trade position (interenterprise debt). These factors are briefly explained below.

Growth opportunities: According to the pecking order theory, growth opportunities should be positively related to the debt ratio of a firm (Myers, 1984). This is because there is an asymmetrical information problem across outside investors and firm

managers in the firms that have more growth opportunities than the assets they have (particularly small firms). The pecking order theory implies a positive relationship between growth opportunities and debt level (Benito, 2003; DeAngelo and Masulis, 1980; Hall *et al.*, 2000; Jensen, 1986; Myers, 1984; Myers and Majluf, 1984; Zou and Xiao, 2006). On the other hand, the trade-off theory requires a negative relationship between growth opportunities and debt ratio of a firm (Jensen and Meckling, 1976; Myers, 1977; Stulz, 1990). Since firms having growth opportunities bear more risk, they have higher financial distress costs. Nevertheless, high-growth firms finance growth by equity in order to mitigate idle capacity problem arising from risky debt (Benito, 2003; DeAngelo and Masulis, 1980; Hall *et al.*, 2000; Jensen, 1986; Myers, 1984; Myers and Majluf, 1984; Zou and Xiao, 2006). A number studies on the capital structure, reported a positive relationship between market-to-book ratio and leverage ratio (Dalbor and Upneja, 2002; Tang and Jang, 2007; Zou and Xiao, 2006). On the contrary, Rajan and Zingales (1995) found a negative relationship between growth opportunities and leverage ratio.

Share of fixed assets (tangibility): The trade-off theory suggests a positive relationship between the share of fixed assets and debt ratio, since fixed assets serve as collateral for debt financing. In other words, firm will obtain debt more easily as collateral value of fixed assets rise (Harris and Raviv, 1991; Myers, 1977; Myers and Majluf, 1984; Thornhill *et al.*, 2004; Williamson, 1988). In the pecking order theory, however, firms that own more fixed assets have less asymmetrical information. Therefore, they tend to depend on equity financing. When we consider maturity, the pecking order theory suggests that share of fixed assets is positively related to long-term debt financing and negatively to the short-term debt financing (Feikadis and Rovolis, 2007; Qian *et al.*, 2007). Most of the studies found a positive relationship between the share of fixed assets and leverage ratio (Booth *et al.*, 2001; Chen, 2004; Fattouh *et al.*, 2003; Pandey, 2004; Tang and Jang, 2007; Upneja and Dalbor, 2001; Zou and Xiao, 2006). A few studies reported negative relationship between the two variables (Acaravci, 2004; Sayilgan *et al.*, 2006).

Effective tax rates: According to the trade-off theory, there should be a positive relationship between effective tax rates and debt ratio (DeAngelo and Masulis, 1980; Haugen and Senbet, 1986). This is because deduction of financial expenses from taxable income decreases effective cost of debt. Thus, advantage of debt financing increases along with increases in tax rates (Brigham and Houston, 2004). A positive relationship should, therefore, be expected between effective tax rates and debt level (Qian *et al.*, 2007). On the other hand, the pecking order theory does not specify a certain relationship between effective tax rates and debt level. Empirical studies found that the effective tax rate is an important determinant of capital structure (Bancel and Mittoo, 2004; Kwansa and Cho, 1995; Nuri and Archer, 2001; Upneja and Dalbor, 1999).

Non-debt tax shields: Both the pecking order and trade-off theories imply that non-debt tax shields and leverage ratio are negatively related (DeAngelo and Masulis, 1980; Myers, 1984; Myers and Majluf, 1984). Empirical studies confirm this suggestion (Qian *et al.*, 2007; Sayilgan *et al.*, 2006). Moreover, Erickson and Trevino (1994) reported a negative relationship between non-debt tax shield and leasing usage in US airway companies. Likewise, Upneja and Dalbor (2001) found that non-debt tax shield is negatively associated with leverage ratio in publicly traded US lodging companies.

Firm size: According to the trade-off theory there should be a positive relationship between firm size and debt ratio, because larger firms are better diversified and have a lower probability of experiencing financial distress. Lower bankruptcy costs allow large firms take advantage of leverage (Ang, 1992; Antoniou *et al.*, 2002; Bevan and Danbolt, 2002; Homaifar *et al.*, 1994; Wiwattanakantang, 1999). On the contrary, the pecking order theory implies a negative relationship between firm size and debt ratio, since information asymmetrical is less severe issue in big firms. Thus, big firms' cost of capital should be less than that of small firms (Rajan and Zingales, 1995; Zou and Xiao, 2006). Empirical studies generally found a positive relationship between the two variables, and hence support for the trade-off theory (Dalbor and Upneja, 2002; Gaud *et al.*, 2005; Huang and Song, 2006; Pandey, 2004; Qian *et al.*, 2007; Sayilgan *et al.*, 2006).

Profitability: The pecking order and trade-off theories also have opposite implications about the relationship between profitability and debt ratio. The pecking order theory opts for a negative, while trade-off theory opts for a positive relationship between the two variables (Benito, 2003; Krasker, 1986; Myers, 1984; Myers and Majluf, 1984; Narayanan, 1988; Qian *et al.*, 2007). According to the trade-off theory, high profitability level renders a high level of borrowing capacity. This situation promotes the use tax-shield. Thus, the trade-off theory hypothesizes a positive relationship between profitability and debt level (Frank and Goyal, 2003; Um, 2001). According to the pecking order theory, high-profit firms outperform low-profit firms in terms of using retained earnings in internal financing. As a result, the pecking order theory suggests a negative relationship between profitability and debt level (Myers, 1984; Myers and Majluf, 1984). Nevertheless, empirical studies generally found a negative relationship (Acaravcı, 2004; Allen, 1991; Barton and Gordon, 1988; Chen, 2004; Huang and Song, 2006; Pandey, 2004; Sayilgan *et al.*, 2006; Tong and Green, 2005; Wiwattanakantang, 1999). However, Tang and Jang (2007) did not find any significant relationship between profitability and leverage ratio in lodging companies.

Free cash flows: The trade-off theory suggests a positive relationship between free cash flows and debt ratio, since firms owning big amount of free cash flows are exposed to less risk and borrow more easily in capital market (Benito, 2003; Jensen, 1986; Stulz, 1990). However, a negative relationship is implied by the pecking order theory, since it requires an increase in internal funds arising from free cash flows. These incremental cash flows would be regarded as a financing source (Myers, 1984; Myers and Majluf, 1984). Empirical studies obtained conflicting evidence on the relationship between free cash flows and leverage ratio (Colombo, 2001; Jensen, 1986; Stulz, 1990; Westphalen, 2002).

Commercial trade position (interenterprise debt): In the pecking order theory net commercial trade position is accepted as an internal fund, since commercial trade positions are internal funds that arise from lending and borrowing activities in the firm. In this sense, this theory suggests a negative relationship between net commercial trade position and debt ratio. Consistent with the pecking order theory, Colombo (2001) found a negative relationship between net commercial trade position and leverage ratio.

Data and methodology

We investigate the determinants of capital structure decisions of lodging companies using a panel data on five companies traded in the ISE. Although there are eight

lodging companies traded in the ISE, there of these companies are excluded from the study since these are traded only after 2000 and including would substantially reduce the number of observations. The sample period of the data set spans the period 1994-2006. There are totally 65 observations and all data are expressed in local currency (Turkish lira). We specify a dynamic fixed effects panel data model to investigate the factors that affect the capital structure of lodging companies. Various estimation techniques, including the Arellano-Bond System GMM method, are used for the estimation. In the theoretical model specified to test the capital structure decisions of the lodging companies in Turkey the dependent variable is specified as the debt ratio. The debt ratio is defined as the book value of liabilities divided by the book value of total assets. This variable measures the share of liabilities in total assets of a company and is widely used in capital structure studies. Explanatory variables are specified as follows:

- growth opportunities defined as the market value divided by the book value of the firm, often referred as market-to-book ratio;
- share of fixed assets (tangibility) defined as the net fixed tangible assets divided by total assets;
- effective tax rates defined as the corporate tax divided by taxable income;
- non-debt tax shields defined as the depreciation divided by total assets;
- firm size defined as the net sales adjusted by the inflation rate, where the inflation rate is computed as the annual percentage change in the wholesale price index;
- profitability (return on assets-ROA) calculated by dividing net profit by total assets;
- free cash flows computed by adding interest payments and depreciation to earnings before taxes; and
- net commercial trade position (inter-enterprise debt) defined as the difference between commercial receivables and liabilities divided by total assets.

Using variables defined previously, a dynamic fixed effects panel model in first differences is specified as follows:

$$\Delta DR_{it} = \beta_1 + \beta_2 \Delta GO_{it} + \beta_3 \Delta LMVFL_{it} + \beta_4 \Delta TANG_{it} + \beta_5 \Delta EFT_{it} + \beta_6 \Delta DEP_{it} + \beta_7 \Delta ROA_{it} + \beta_8 \Delta FCF_{it} + \beta_9 \Delta IED_{it} + \beta_{10} \Delta DR_{i,t-1} + \varepsilon_{it}$$

where i stands for the i th firm, t indicates time period, Δ is the first difference operator, and the variables are defined as follows:

- DR_{it} = debt ratio of firm i at time t ,
 GO_{it} = growth opportunities of firm i at time t ,
 $LMVFL_{it}$ = logarithm of the firm size of firm i at time t ,
 $TANG_{it}$ = share of fixed assets of firm i at time t ,
 EFT_{it} = effective tax rate of firm i at time t ,

DEP_{it}	= non-debt tax shields of firm i at time t ,
ROA_{it}	= return on assets of firm i at time t ,
FCF_{it}	= free cash flows of firm i at time t ,
IED_{it}	= net commercial trade position of firm i at time t ,
ε_{it}	= stochastic error term for firm i at time t .

Empirical findings

In this section, we present the various estimation results and discuss the implications of the empirical findings. The specification of the debt ratio equation introduces correlation between the errors and the lagged first-differenced endogenous variable. This correlation is handled using instrumental variables (IVs). Anderson and Hsiao (1982) proposed using lagged past differences or levels of endogenous variables as instruments (Anderson-Hsiao IV approach). These IVs are proposed within the framework of the GMM, since they may not be highly correlated with the first-differenced dependent variable. Alternatively, Arellano and Bond (1991) suggested that first differences of the endogenous variable be instrumented with lags of its own levels. This is known as the Arellano-Bond GMM approach. Blundell and Bond (1998) pointed out that lagged levels are often poor instruments for first differences. They proposed using all information on both endogenous and exogenous variables. This is known as the Arellano and Bond system (Arellano-Bond System GMM approach) method and provides more efficient and unbiased estimates in small samples.

In our implementation of the Arellano-Bond System GMM model, we use first to second lags of all the variables included in the regression as the GMM-style instruments. To make sure all appropriate variables are used as instruments, but to avoid biasing our parameters, we included one instrument for each variable and lag distance rather than one instrument for each variable, time period, and lag distance. This was done because as the number of instruments included becomes large relative to the number of observations, the parameter estimates become biased towards feasible generalized least squares (Blundell and Bond, 1998). Estimates from the various estimation methods are presented in Table I.

We note that the all results obtained from various estimation methods are quite similar. Thus, the estimates are quite robust to the estimation method used and qualitative implications of all results from different estimation methods are analogous. We will use the Arellano-Bond system GMM estimation results in order to draw conclusions due to its better small sample properties and efficiency.

The results presents in Table I suggest that EFT, TANG and ROA are negatively related to debt ratio of ISE lodging companies with significant parameter estimates. On the contrary, FCF, DEP, GO, IED and MFVL have insignificant parameter estimates at the 5 per cent level and do not appear to be related to the debt ratio of lodging companies.

The trade-off theory hypothesizes a positive relationship between EFT and debt level, while the pecking order theory does not specify a well-defined relationship between them. Our results show a negative relationship between these two variables for the ISE lodging companies. This finding contradicts predictions of both theories. Furthermore, the previous empirical studies reported a positive relationship between

	Arellano-Bond GMM **	Arellano-Bond system GMM **	Anderson-Hsiao instrumental variable fixed effects
Constant	0.2650 (0.0000)	0.2307 (0.0000)	0.2973 (0.0000)
ΔGO_{it}	-0.0161 (0.0720)	-0.0207 (0.0190)	-0.0161 (0.0830)
$\Delta TANG_{it}$	-0.1997 (0.0040)	-0.1724 (0.0020)	-0.2090 (0.0060)
ΔEFT_{it}	-0.0152 (0.0456)	-0.0151 (0.0452)	-0.0109 (0.0602)
ΔDEP_{it}	0.6320 (0.0910)	0.6551 (0.0530)	0.6641 (0.1080)
ΔROA_{it}	-0.7064 (0.0000)	-0.7438 (0.0000)	-0.6037 (0.0000)
ΔFCF_{it}	-0.0004 (0.0792)	-0.0007 (0.0645)	-0.0010 (0.0572)
ΔIED_{it}	-0.0741 (0.0795)	-0.0169 (0.0951)	-0.1227 (0.0696)
$\Delta LMVFL_{it}$	0.0145 (0.0900)	0.0117 (0.0167)	0.0061 (0.0615)
$\Delta DR_{i,t-1}$	0.6767 (0.0000)	0.7158 (0.0000)	0.8002 (0.0000)
<i>F</i> or Wald χ^2 -statistic	34.32	204.56	21.77
Hansen's <i>J</i> -statistic or Sargan statistic	8.93	6.44	
Levin-Lin-Chu panel unit root test (<i>t</i> -statistic)	-8.412	-8.412	
Arellano-Bond test of AR(1) in residuals (<i>z</i> -statistic)	-2.84	-2.86	
Arellano-Bond test of AR(2) in residuals (<i>z</i> -statistic)	-0.74	-0.77	

Notes: *Robust standard errors, given in parentheses, are estimated using heteroskedasticity and autocorrelation consistent covariance matrix estimation. Specifications tests were performed that indicated that there was no overall serial correlation in the errors but there was group-wise heteroskedasticity. As a result, we used a specification that considered each firm as “cluster” and allowed a covariance structure where error terms were correlated within cluster, but uncorrelated across clusters. **Hansell *J*-test for Arellano-Bond System GMM method and the Sargan test for the Arellano-Bond GMM method suggest that we cannot reject the null hypothesis that the over-identifying restrictions are valid; that is, we can conclude that the instrumental variables are not correlated with the error term. If the dependent variable is *I*(1), then the lagged endogenous variables are not valid instruments. The results from the panel unit root test indicate that the dependent variable is stationary. Finally, the results are consistent with the Arellano-Bond GMM model assumption of no second-order autocorrelation. First-order autocorrelation is expected and does not signify an improper model specification

Table I.
Results of estimation of
debt-ratio equation*

EFT and debt level (Brigham and Houston, 2004; DeAngelo and Masulis, 1980; Graham, 2003; Qian *et al.*, 2007). Whereas, Upneja and Dalbor (1999) found a weak negative relationship between effective tax rates and debt policy for tourism companies. Our results regarding EFT are in disparity with the previous empirical literature.

About the relationship between TANG and leverage our results do not support the trade-off theory. The pecking order theory specifies a negative relationship between TANG and short-term debt, which is consistent with our findings. A number of previous studies examining emerging markets found a positive relationship between debt and TANG (Booth *et al.*, 2001; Chen, 2004; Fattouh *et al.*, 2003; Pandey, 2004; Zou and Xiao, 2006). Moreover, studies on tourism industry also reported positive coefficients (Tang and Jang, 2007; Upneja and Dalbor, 2001). Nevertheless, some other studies, especially in Turkey, have found negative association between leverage and TANG (Acaravci, 2004; Qian *et al.*, 2007; Sayilgan *et al.*, 2006). We may attribute this finding to insufficient long-term capital sources in Turkey. Thus, excessive use of short-term debt becomes obligatory. This excessive usage of short-term debt may explain the negative relationship between TANG and leverage.

The estimates regarding the ROA suggest that it is negatively related to debt ratio. This result is consistent with the prediction of the pecking order theory. Our results also do not support the prediction of the trade-off theory that the RAO is negatively related to the debt ratio. A number of previous empirical studies also reported similar results (Acaravci, 2004; Barton and Gordon, 1988; Chen, 2004; Huang and Song, 2006; Pandey, 2004; Sayilgan *et al.*, 2006; Tong and Green, 2005; Wiwattanakantang, 1999).

Pecking order theory requires negative association between IED and debt ratio. However, our findings do not confirm this suggestion, since IED is not found to be related with leverage. The estimates of coefficient of IED are significant and negative, which is consistent with the prediction of the pecking order theory.

We do not detect a significant relationship between FCF and debt level. Thus, in regard to FCF and debt level relationship our finding supports neither the pecking order nor the trade-off theory. Likewise, our findings are not in line with the empirical studies that found a positive relationship (Jensen, 1986; Stulz, 1990; Westphalen, 2002) or a negative relationship (Colombo, 2001; Bontempi, 2002) between FCF and debt level. Nevertheless, Tang and Jang (2007) also did not find a significant relationship between FCF and debt level for tourism companies. Thus, our finding supplements the result in Tang and Jang (2007).

Based on the parameter estimates we cannot find a significant relationship between DEP and debt level. This finding contrasts the empirical studies finding a negative relationship (Deesomsak *et al.*, 2004; Fama and French, 2002; Qian *et al.*, 2007; Sayilgan *et al.*, 2006) and positive relationship (Hol and Wijst, 2006; Mallikarjunappa and Goveas, 2007) between DEP and debt level. In regard to the lodging companies, Upneja and Dalbor (2001) reported a negative relationship between these two.

Our estimates did not reveal any significant relationship between GO and debt level. Again, this finding is in contrast to the predictions of the pecking order and trade-off theories. Majority of the empirical studies reported a positive association between GO and debt level (Feikadis and Rovolis, 2007; Sayilgan *et al.*, 2006; Zou and Xiao, 2006). On the other hand, Upneja and Dalbor (2001) and Dalbor and Upneja (2002) found that GO positively relates to debt level for restaurant companies, while Tang and Jang (2007) found a negative relationship for lodging and software companies. Thus, our result regarding the GO variable does not agree with the previous literature.

With regard to the MVFL variable, parameter estimates do not reveal any relationship between MVFL and debt level for ISE lodging companies. As before, neither the prediction of the pecking order theory nor the prediction of the trade-off

theory is supported. Although the previous empirical studies found a positive relationship between firm size and debt level (Chen and Hammes, 1997; Dalbor and Upneja, 2002; Daskalakis and Psillaki, 2008; Deesomsak *et al.*, 2004; Fama and French, 2002; Feikadis and Rovolis, 2007; Gaud *et al.*, 2005; Huang and Song, 2006; Pandey, 2004; Qian *et al.*, 2007; Sayilgan *et al.*, 2006; Zou and Xiao, 2006), we fail to find any significant relationship. Analogously, Barton and Gordon (1988) did not also find a significant relationship between these two variables. Particularly, Upneja and Dalbor (2001) and Tang and Jang (2007) did not find any significant relationship between firm size and leverage for American lodging companies, for which our results are supplementary.

Generally, our findings seem to support predictions of the pecking order theory rather than the trade-off theory. Nevertheless, both the trade-off and the pecking order theory fail to fully explain the capital structure of ISE lodging companies.

Conclusion

Capital structure refers to the composition of a firm's liabilities and owners' equity. Recently, firm managers have been placing increasing importance to capital structure decisions, since many companies have experienced financial distress. Although optimal capital structure is a widely investigated topic for years, no model has been found to fully explain the optimal capital structure of a firm.

Lodging companies invest great amounts in fixed assets, requiring substantial amount of capital, especially in the investment stage. In case of a new hotel, land, building, machine, equipment costs have to be incurred. These expenses would reach 85-90% of fixed assets. Moreover, lodging companies have to make frequent replacement, expansion, and modernization investments in order to meet changing consumer behavior and market competition. Although inflation has recent a downward trend in Turkey, real interest rates are still at a high levels. Therefore, lodging companies cannot borrow at favorable rates. Furthermore, there is the lack of fund supply due to underdeveloped capital markets in Turkey. Thus, provision of financial sources and design of the capital structure becomes important for lodging companies.

The major purpose of this study was to investigate the variables that affect the capital structure and debt decisions of the ISE lodging companies. Validity of the pecking order and trade-off are also empirically tested. Empirical conclusions are drawn from the estimates of a dynamic fixed effects panel data model, which is estimated for five companies traded in the ISE.

The estimation results suggest that effective tax rates, tangibility of assets, and return on assets negatively relate to the debt ratio for lodging companies. On the other hand, free cash flow, non-debt tax shields, growth-opportunities, net commercial credit position, and firm size do not appear to be associated with the debt ratios of lodging companies. Although the findings partially support the pecking order theory, neither the trade-off theory nor the pecking order theory fully explains the capital structures of Turkish lodging companies.

One of the interesting findings of the study is that there is a negative relationship between shares of fixed assets and debt ratios of the ISE lodging companies. The fixed-asset intensive nature of the lodging industry seems to be a much more important factor than some of the "traditional" factors that have been considered in the finance

literature. The trade-off theory suggests a positive relationship between share of fixed assets and debt ratio, whereas the pecking order theory implies a positive relationship. The pecking order theory also predicts a negative relationship between share of fixed assets and short-term debt ratio. Most studies on the emerging markets and lodging companies found a positive relationship between share of fixed assets and debt ratio. The results presented here for the Turkish lodging industry do somewhat differ than those found for the USA lodging industry by Upneja and Dalbor (2001), particularly in regard to the tangibility variable. Most hotel assets are tangible and represent valuable collateral and therefore it may be very likely that the type of investments made by lodging companies are better financed with long term debt because lenders are more comfortable with real estate-type investments and debt capital works better to control any associated agency problems. Nevertheless, possibilities of long-term borrowing with favorable conditions seem to be limited in Turkey. Moreover, economic and political instability in addition to an under-developed capital market may initiate more usage of short-term debt. Thus, share of fixed assets may be related negatively with short-term debt level. Similarly, a negative relationship is observed between return on assets and debt ratio. This may be due to the limitations lodging companies face in obtaining financial sources. Lodging companies may be inclined to use internal sources because of this limitation. Although, further development of the ISE in terms of liquidity has a vital role for Turkish lodging companies in deriving long-term financial sources, only eight lodging companies utilize ISE sources.

Our findings suggest that some of the variables used in the previous studies do not seem to have significant impact on the capital structure of Turkish lodging companies. However, when the limited number of lodging companies traded in the ISE is considered, the findings of this study may change. Unfortunately, data on lodging companies not traded in the ISE is not available. A more detailed analysis would use data on the remaining companies in the industry.

Limitations

There are only eight lodging companies traded in the ISE. Five of these companies (Altinyunus Çeşme, Marmaris Martı, Net Turizm, Petrokent Turizm, Marmaris Martı) have been traded since 1994 and the other three lodging companies (Tek-Art Turizm, Metentur Turizm, Favori Dinlenme İşletmeleri) have been traded in the ISE only since 2000. These three companies are excluded from the study since they would substantially reduce the number of observations in our panel data set due to a few years of data available. Therefore, only the former lodging companies (traded since 1994) are included in the study. The sample period covered, thus, spans from 1994 to 2006. There are 65 observations available in the data set we used. Thus, conclusions drawn from this study is limited to only five lodging-companies. In the future, more general results may be obtained as the number of publicly traded lodging companies increase. Furthermore, access to information of the financing of Turkish lodging companies not traded in the ISE may help to obtain stronger conclusions. However, unwillingness of Turkish lodging companies' owners in sharing financial data limits this option.

In several cases, our results did not show a significant relationship between some variables and the debt ratio. However, some previous studies obtained significant relationships for the same variables, supporting either the pecking order or the

trade-off theory. Our results should, however, be interpreted with caution and not taken as evidence against either the trade-off or the pecking order theory. These results may be unique to Turkish lodging companies due to some peculiarities existing in the lodging industry in Turkey. Although we used estimation methods with good small sample properties, it should be recognized that the data set is relatively small and pertains to a small fraction of companies in the Turkish lodging industry.

Implications for future studies

There exist alternative capital structure theories in the finance literature (trade-off theory, pecking order theory, signaling effect theory, agency cost theory, theories based on product /input market interactions, theories driven by corporate control considerations, capital structure life cycle theory, the legal environment theory and corporate governance theory). The empirical validity of these theories has been quite controversial. The factors affecting the capital structure have been found to vary across different countries, industries, and firms. Empirical studies have generally investigated the extent to which the trade-off and pecking order theories explain companies' capital structures. Thus, other capital structure theories should also be tested empirically. Future studies may also compare capital structure of tourism companies in various countries. In addition, data limitation problem would be overcome by applying survey-based methods to non-publicly traded tourism companies. This will improve the reliability of the findings. This paper has attempted to build upon the previous financial literature by examining the two recent capital structure theories for the capital structure decisions. A striking results found in this study was that the growth opportunity, free cash flow, non-debt tax shields, net commercial credit position, and firm size do not significantly relate to the debt ratios of lodging companies. Although, there are possible explanations of these results future research is needed to supplement these initial findings. Clearly, more research is needed on the capital structure of Turkish lodging companies.

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Further reading

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