View metadata, citation and similar papers at core.ac.uk

brought to you by CORE

provided by WestminsterResearch

UNIVERSITY OF
FORWARD
THINKING
WESTMINSTER

WestminsterResearch
http://www.westminster.ac.uk/westminsterresearch

The value effects of changes in leverage: Evidence from the Travel and Leisure sector

Van Dellen, S., Sivaprasad, S. and Bas, T.

This is an electronic version of a paper presented at the *22nd Annual Conference of the Multinational Finance Society,* Halkidiki, Greece, 28 June to 01 July 2015 .

The WestminsterResearch online digital archive at the University of Westminster aims to make the research output of the University available to a wider audience. Copyright and Moral Rights remain with the authors and/or copyright owners.

Whilst further distribution of specific materials from within this archive is forbidden, you may freely distribute the URL of WestminsterResearch: ((http://westminsterresearch.wmin.ac.uk/).

In case of abuse or copyright appearing without permission e-mail repository@westminster.ac.uk

The Value Effects of Changes in Leverage: Evidence from the Travel and Leisure Sector

Roberta Adami [a]
(R.Adami@westminster.ac.uk)

Tugba Bas [a]
(T.Bas@westminster.ac.uk)

Gulnur Muradoglu [b]
(Y.G.Muradoglu@qmul.ac.uk)

Sheeja Sivaprasad [*a]
(S.Sivaprasad@westminster.ac.uk)

Stefan van Dellen [a]
(S.Vandellen@westminster.ac.uk)

Affiliations:

[a] Department of Accounting, Finance and Governance, Westminster Business School, University of Westminster, 35 Marylebone Road, London NW1 5LS, United Kingdom.

[b] School of Business and Management, Queen Mary, University of London, Mile End Road, London E1 4NS, United Kingdom.

This Version: 15th December 2014

ABSTRACT

It is well documented that the Travel and Leisure sector is capital intensive when compared to other sectors due to the high level of capital required for fixed assets. Given this, this paper examines the relation between changes in leverage and stock returns of firms in this sector, in addition to examining whether changes in leverage have any significant effect on a sector basis. Using a final sample of 173 firms over the period between 1993 and 2012, we find that leverage only acts as a significant determinant of returns in the case of highly levered firms, as would be the case in the Travel and Leisure sector.

JEL Code: D22; G11; G28; G32
Keywords: Travel and Leisure Sector; Changes in Leverage; Capital Structure

[*] **Corresponding Author:** Dr. Sheeja Sivaprasad; Department of Accounting, Finance and Governance, Westminster Business School, University of Westminster; Tel: +44 (0) 203 506 6508; Email: S.Sivaprasad@westminster.ac.uk.

1. INTRODUCTION

The primary aim of this paper is to examine whether changes in financial leverage are value relevant in the Travel and Leisure (T&L) sector. This is particularly important given that it is well documented that the T&L sector is capital intensive when compared to other industries (Lee and Jang, 2007; Muradoglu and Sivaprasad, 2014). This is a result of the fact that companies in this sector require a relatively high level of capital for their fixed asset components, such as airplanes (for airline companies), buildings, operating systems, furniture, and restaurant equipment, where the acquisition of these assets ordinarily involves the securing of external financing.

Given this sector characteristic, this paper addresses an important question regarding the relation between changes in leverage and their subsequent effect on the stock returns of firms in the T&L sector, in addition to examining whether changes in leverage have any significant effect on sector basis, following the argument the nature of the sector is crucial when studying the leverage-return relation. Dimitrov and Jain (2008) examine changes in leverage across all firms and find a negative relation between stock returns and changes in leverage. They argue that changes in leverage are an important variable in examining the value relevance of firms. This being said, Arditi (1967), Melicher (1974), and Muradoglu and Sivaprasad (2012a) argue that the true nature of the leverage-return relation can be disclosed only by testing this relation within industries as the financing needs differ within industries. Firms within the T&L sector deserves a specific sector-level analysis about the relation between leverage and financial performance due to their sector specific characteristics, such as management contracts in hotels and franchising in hotels and restaurants (Madanoglu, *et al.*, 2011; Hsu and Jang, 2009; Srinivasan, 2006; Combs and Ketchen, 1999). Borde (1998), Gu and Kim (2002), Kim, *et al.* (2007), Lee and Jang (2007) and Muradoglu and Sivaprasad (2014) all find that leverage is an important risk factor that has a particular effect on T&L firms.

The primary objective of this study is to test the hypothesis as to whether changes in leverage have an impact on stock returns in the T&L sector. Consistent with our prediction, we document that changes in leverage do indeed have an impact on the stock returns of firms belonging to this sector. Our results are also robust to controlling for risk measures, as given by the book-to-market, size and beta factors. In our analysis, we employ panel data regressions as well as the Fama-French plus Carhart Four Factor model (Fama and French,

1993; Carhart, 1997). Overall, the change in financial leverage is found to be an important variable from the perspective of value relevance.

The paper is organised as follows: Section 2 provides a background to the theory of capital structure, while, in Section 3, we describe the rationale behind our sample-selection procedure, as well as the variables and method we apply. We present our results in Section 4 and Section 5 concludes.

2. PRIOR WORK

The degree of leverage in a firm's capital structure plays a key role in the determination of the firm's performance (Decloure and Dickens, 2005; Mandelker and Rhee, 1984). This relationship is particularly important given the fact that the T&L sector is particularly capital intensive (Muradoglu and Sivaprasad, 2014; Lee and Jang, 2007) and is highly reliant on external financing to fund activities (BHA Report, 2010). Indeed, previous studies find that leverage is an important risk factor that particularly affects the T&L sector (Borde, 1998; Gu and Kim, 2002; Kim, *et al.*, 2002). Examining the impact of the degree of leverage on cumulative average abnormal returns (CAARs) on hospitality firms in the UK, Muradoglu and Sivaprasad (2014) find that CAARs are highest when investing in medium leverage firms.

2.1 THEORY OF CAPITAL STRUCTURE

Proposition II in the seminal paper by Modigliani and Miller (1958) argues that the expected yield on a share is equal to the sum of the appropriate capitalisation ratio and a financial risk premium, which is related to the debt-equity ratio. This would imply that share returns should increase as the level of leverage increases so as to provide compensation for the increased level of risk attached to debt. Modigliani and Miller's (1958) findings support this in that they find that the relation between leverage and returns is positive in the oil and gas industry.

This proposition has been a source of academic debate in that while Hamada (1972) and Bhandari (1988) support this proposition, in that they also find that returns increase with the level of leverage, a stream of academic literature (Hall and Weiss, 1967; Baker, 1973; Dimitrov and Jain, 2008; Kortweg, 2010; Gomes and Schmid, 2010; Muradoglu and Sivaprasad, 2012a, 2012b) find that returns decrease with an increase in the level of leverage. This being said, one thing that the academics do agree upon is that the level of leverage can

explain returns. Dimitrov and Jain (2008), in particular, argued that stock returns depend not only on the current level of leverage but also depend on changes in leverage; hence as a firm changed its level of leverage, this would result in a change in the associated returns. This followed the theoretical work by Myers (1984) and Miller and Rock (1985) who hypothesised that changes in financial leverage contain economic performance information and are therefore value-relevant. We extend this argument by examining the value effects of leverage on stock returns in the capital intensive and highly levered T&L sector.

The fact that we are examining these value effects in a particular sector is crucial in that if the analysis of value relevance is conducted across a cross-section of all firms, any findings may be misleading given the differences in capital structure between industries. As an example, the capital structure of financial companies, such as banks and insurance firms, is very different to that for non-financial firms. Supporting this argument, Muradoglu and Sivaprasad (2012a) report that abnormal returns decrease in an inverse relation to firm leverage, with the exception of the utilities sector where this is due to the capital intensive nature of this regulated sector. This is particularly relevant in that Dimitrov and Jain (2008) utilised a sample comprised of all firms listed on the New York Stock Exchange (NYSE), the American Stock Exchange (AMEX) and the National Association of Securities Dealers Automated Quotations (NASDAQ) stock markets, and therefore did not differentiate by sector.

2.2 RISK AND RETURN IN THE TRAVEL AND LEISURE SECTOR

The majority of the literature on the T&L sector has focused on issues relating to the demand-side of tourism (see for example Nowman and Van Dellen, 2012), with comparatively less academic interest on the factors determining the profitability of this sector profitability compared to other industries. Although there have been some exceptions (see Cave, *et al.*, 2009; Chen, *et al.*, 2005; Chen, 2007), there has been a relative dearth of literature on the nature of the relation between risk and return, and even less on the importance of the effects of the capital structure on returns, in the T&L sector (Muradoglu and Sivaprasad, 2014).

Cave, *et al.* (2009) in their cross-national study of the risk-return relation in the T&L sector highlight the importance of the flow of investment funds in the capital market. They argue that cash flows tend to be directed towards investments with the highest expected return for a given level of risk, with an important subsequent impact on employment and

growth in the T&L sector. Their results further suggest that there is a possibility of over-capitalisation in the T&L sector infrastructure in the case of some countries in Europe, in that the T&L sector in these countries tends to be characterised by high market fluctuations, i.e. risk, but low returns. In similar studies, Chen, *et al.* (2005) and Chen (2007), when investigating the relationship between macro risk and Taiwanese and Chinese hotel returns, respectively, find that although general macro factors do affect stock returns, the results for non-macro factors was somewhat indecisive.

Focusing more on financial factors, Jeon, *et al.* (2004), when analysing the relation between abnormal earnings and the book value of equity and earnings in hotel and manufacturing companies, find that while the persistence of abnormal earnings does affect the book value of equity, it greater for hotels than for manufacturing companies. Finally, Jeon, *et al.* (2006) examine the relation between the persistence of the abnormal earnings and systematic risk of Korean hotel firms and find that the persistence of abnormal earnings is systematically linked to book value of equity and earnings, in additional to a systematic risk, while external (market) factors have an important effect on the profitability of hotel firms.

This debate lends credence to Skalpe (2003), Newell and Seabrook (2006) and Chathoth and Olsen's (2007) argument that financial factors have an important effect on profitability in the T&L sector. This being said, these studies do not directly the effect of leverage on stock returns. We extend this debate by arguing that leverage is an important risk factor in that it has an impact on the performance of firms in the T&L sector, given their reliance on external finance for their investments in fixed assets and that it is a particularly capital intensive sector.

2.3 THE IMPACT OF LEVERAGE IN THE TRAVEL AND LEISURE SECTOR

The impact of leverage on firms in the T&L sector is particularly relevant given that this sector is remarkably capital intensive when compared to other industries (Lee and Jang, 2007; Muradoglu and Sivaprasad, 2014), for the reasons discussed in Section 1 above. Given this, there is an ongoing debate regarding the impact of leverage in the T&L sector, but from different angles. In the first of these papers, Sheel (1994) examines the relation between the capital structure of firms in the hotel and manufacturing sectors, their cost of capital, and their stock value. They find that all determinants of leverage affect the capital structure decision of hospitality firms thereby shedding light on the short- and long-term behaviour of these firms, as opposed to manufacturing firms. Interestingly, when looking at the

determinants of executive compensation in the sector, Kim and Gu (2005) find that leverage, in addition to growth, profitability and stock performance, did not play a role in determining the compensation of chief executive officers in the restaurant industry. Finally, Borde (1988), while examining the relationship between firm-specific financial characteristics and risk within the restaurant industry, finds that leverage and both systematic and total risk of these companies. This in direct contrast to Jeon, *et al.* (2006) and Lee and Jang (2007) who, when examining the impact of firm-specific variables on systematic risk in the Korean hotel and US airline industries, respectively, find that financial leverage has a significant impact on systematic risk.

Changing focus slightly to the impact of leverage on earnings and profitability, Skalpe (2003) finds that the high variability of earnings in the hospitality sector is caused predominantly by operational and financial leverage, while Nicolau (2005) argues that operating leverage represents the sensitivity of profits to changes in sales. In contrast, Jang and Tang (2009), when analysis this relationship in hotel companies, find that an inverted U-shaped relationship exists between financial leverage and profitability, implying the existence of an optimal leverage pattern that would ensure maximum profitability. Interestingly, however, Phillips and Sipahioglu (2004) find no significant relation between the levels of debt incorporated in the capital structure and the financial performance of hotels.

Despite this debate, to the best of our knowledge, the only other paper to have examined the specific value effects of leverage on stock returns in the T&L sector is Muradoglu and Sivaprasad (2014) who examine the impact of the degree of leverage on CAARs of hospitality firms in the UK. They find that investors' CAARs are highest when investing in medium leverage companies.

We extend this argument regarding value effects by applying the approach in Dimitrov and Jain (2008) to the T&L sector and examining whether *changes* in leverage have any significant value effects. We further differentiate ourselves from Muradoglu and Sivaprasad (2014) in that rather than examining the impact of leverage on abnormal returns, as would be the case if we were looking at an investment strategy, we instead look at the determinants of stock returns themselves. We can therefore conclude that this study extends the existing literature by examining the value effects of changes in leverage on stock returns in the T&L sector. Furthermore, given that capital structure differs between sectors (Muradoglu and Sivaprasad, 2012a) and that Dimitrov and Jain (2008) did not examine these effects on a sector-basis, we further extend the literature by examining these effects within a specific

sector to determine whether changes in leverage have a significant effect on stock returns. This argument is particularly important given the capital intensive nature of the T&L sector.

3. DATA AND METHODOLOGY

The analysis is conducted using a sample of all firms listed in the T&L sector of the AMEX, collected from Bloomberg, for the period between 1980 and 2012. The sample began with 325 firms, from which we excluded all firms without leverage and stock prices, and firms with a leverage ratio of over 100%. The final sample therefore comprises a total of 173 firms and 2,047 firm-years for the period between 1993 and 2012. The stock returns for each company are estimated monthly, using the percentage change in consecutive closing prices adjusted for dividends, stock-splits and rights issues (Fama, *et al.*, 1969), while for the calculation of the annual stock returns, we take the average of the monthly stock returns.

Tables 1 and 2 present the descriptive statistics of the data and the Pearson correlation coefficients for several variables of interest, respectively. The results in Table 1 indicate that, over the period of study, while the average level of leverage is 39.46%, the average change in leverage is -0.08%, indicating that companies have, on average, reduced their leverage over the estimation period. The average return across the sample is 2%, while the average size, price-to-book ratio, risk and effective tax rates are all positive and within the normal range . The results for the correlation coefficients in Table 2 indicate that the average returns and changes in leverage are negatively and significantly correlated, lending support to our hypothesis that changes in leverage are value relevant. The level of leverage and the size of the firm are found to be positively and significantly correlated, while risk is found to be significantly negatively correlated with the size of the firm, and risk is found to be positively and significantly correlated with the effective tax rate. Finally, the price-to-book ratio is found to relate positively and significantly to the level of leverage and size of the firm, and negatively and significantly to the average return and change in leverage.

In order to define our variables, the leverage of a company (expressed as a percentage) represents the ratio of the total debt to the total financing of the firms, and is defined as:

$$Leverage = \frac{Long\text{-}Term\ Debt + Short\text{-}Term\ Debt}{Total\ Equity + Long\text{-}Term\ Debt + Short\text{-}Term\ Debt} \quad (1)$$

In this study, we use the book-value rather than the market-value of leverage since managers will use the book-value ratio of total debt to total financing in any discretionary decisions regarding the capital structure of the firm (Schwartz, 1959), where this is consistent with the

method applied by other authors (Rajan and Zingales, 1995). The change in leverage, in turn, is measured as the difference between the level of leverage at the beginning and end of the year for that specific year (Dimitrov and Jain, 2008), while the firm size is calculated by taking the logarithm of the firm market capitalisation and the price-to-book ratio is defined as the firm's share price divided by its book value. We also incorporate market risk and the effective tax rate, where market risk is proxied by beta coefficient that is calculated over a five-year rolling window using monthly data, and the effective tax rate is the tax paid divided by the firm's earnings before tax. The inclusion of the effective tax rate is in line with Lasfer (1995) in that it includes all allowances and reliefs proposed by a tax system and therefore will exclude all measurement errors and bias resulting from the use of proxies for tax.

We begin the analysis by running our first set of regressions[1], which examine whether changes on leverage have an impact on stock returns as follows:

$$R_{i,t} = \alpha + \beta_1 \Delta Lev_{i,t} + \varepsilon_t \tag{2}$$

where $\Delta Lev_{i,t}$ denotes the change in leverage for firm i at time t. Following this, and given that stock returns could be influenced by other factors, as a first robustness test, we look to determine whether stock returns are influenced by changes in leverage in addition to firm size, the price-to-book ratio, market risk and the effective tax rate, hence:

$$R_{i,t} = \alpha + \beta_1 \Delta Lev_{i,t} + \beta_2 Size_{i,t} + \beta_3 PB_{i,t} + \beta_4 Risk_{i,t} + \beta_5 Tax_{i,t} + \varepsilon_t \tag{3}$$

where $\Delta Lev_{i,t}$, $Size_{i,t}$, $PB_{i,t}$, $Risk_{i,t}$ and $Tax_{i,t}$ denote the change in leverage, firm size, price-to-book, market risk and effective tax rate for firm i at time t. It is also well documented that the market premium, size and distress, defined as $\left(R_M - R_F\right)$, SMB and HML, respectively, in the Fama-French three-factor model (Fama and French, 1993) as well as Carhart's (1997) momentum factors have an important influence on the variation in the stock returns. For this reason, as our second robustness we incorporate these as follows:

$$E\left(R_{i,t} - R_{f,t}\right) = \alpha + \beta_1 \Delta Lev_{i,t} + \beta_2 \left(R_{M,t} - R_{f,t}\right) + \beta_3 SMB_t + \beta_4 HML_t + \beta_5 Mom + \varepsilon_t \tag{4}$$

where $E\left(R_{i,t} - R_{f,t}\right)$ and $\Delta Lev_{i,t}$ denote the expected excess return and the change in leverage for firm i at time t; SMB_t denotes the difference between the average returns on small and big market capitalisation stocks, and acts as a proxy for size; HML_t denotes the

[1] Note that the each model is estimated using OLS panel estimators with fixed effects.

difference between the average returns on high and low book-to-market stocks, and acts a proxy for distress; and, finally, *Mom* denotes the difference between high and low return stock portfolios.

In order to further analyse the value effects of changes in leverage on stock returns, we categorised the firms based on the corresponding level leverage, which is calculated given the leverage reported in the annual reports with year-end December 31. Quintile 1 includes firms that have a leverage figure of between 0% and 20%, Quintile 2 of between 20 and 40%, Quintile 3 of between 40% and 60%, Quintile 4, of between 60% and 80%, and, finally, Quintile 5 of 80% to 100%. In order to perform the analysis, we re-ran the models in Equations (2) through (4) for each quintile.

4. EMPIRICAL FINDINGS

Having outlined the motivation for and methodology used in the paper, we now look at the results from the estimation of the respective models. Table 3 presents the empirical results regarding the value effects of changes in leverage for the overall sample. The results from our first set of regressions, which correspond to Equation (2), above, and Column [1] in Table 3, indicates that changes on leverage have a significant effect on the stock returns, where decreases in leverage will have a positive effect on stock returns. This is in line with the theoretical work by Myers (1984) and Miller and Rock (1985), among others, as well as the empirical work by Dimitrov and Jain (2008) in that these argue that changes in leverage contain information about economic performance and are therefore value relevant. Additionally, it also extends the work of Muradoglu and Sivaprasad (2014), in that we find that not only is leverage value relevant, in line with their argument, but in addition, changes in leverage are also value relevant. When we add other firm characteristics, as a robustness measure, as outlined in Equation (3), above, and Column [2] of Table 3, we find that the results are robust in that decreases in leverage still have a significantly positive effect on stock returns, where firm size and the effective tax rate are also significant. Interestingly, however, when we apply the Fama-French plus Carhart four factor model (Fama and French, 1993; Carhart, 1997), see Equation (4), above, and Column [3] in Table 3, the relation disappears, where this may be due to factors beyond the change in leverage.

In order to further examine the relation between stock returns and changes in leverage, we then subdivided the sample into five quintiles based on the corresponding levels of leverage, as discussed above, and then re-estimated Equation (2) for each quintile

accordingly, the results for which are presented in Panel A of Table 4. In this sub-analysis, we find that changes in leverage are only value relevant for leverage levels of between 20% and 40% and between 80% and 100%, corresponding to Columns [2] and [5], respectively, We extend the work of Sivaprasad and Muradoglu (2014), who find that medium levered firms exhibit the strongest relation with stock returns, in that, although changes in leverage are value relevant for medium levered firms, the changes in leverage have the strongest impact on stock returns for highly levered firms.

As before, we subsequently re-run the regressions, using Equation (3), to determine whether the above results are robust to the inclusion of firm related control variables, where these results are presented in Panel B of Table 4. We again find that, although changes in leverage are only value relevant for firms with leverage levels of between 20% and 40% and between 80% and 100%, corresponding to Columns [2] and [5], respectively, where, as above, changes in leverage have greater value relevance for high levered firms than for medium levered firms. It is worth noting, the price-to-book ratio is significant for the middle three portfolios, corresponding to Columns [2] to [4], the effective tax rate have a significant impact on stock returns for the high levered firms, see Column [5], and size has a significant value effects for medium and high levered firms, see Columns [3] and [5]. Interestingly, when we apply the Fama-French plus Carhart four factor model, outlined in Equation (4), in our sub-analysis, we find that, in contrast to the results for the overall sample, changes in leverage are now found to be value relevant for firms with leverage levels of between 20% and 40% and between 80% and 100%, where, again, highly levered firms exhibit greater benefits from changes in leverage than the medium levered firms. One possible explanation for this could be bankruptcy risk, as financial distress is found to have a significant impact on stock returns, as indicated by the difference between the average returns on high and low book-to-market stocks being significant and positive. Interestingly, the only other factors that are found to be significant are the proxy for size in the case of marginally highly levered firms (see Column [4]) and the momentum effect in the case of the medium levered firms (see Column [3]).

We therefore conclude that changes in leverage are indeed value relevant in the T&L sector. Our sub-analysis indicates that this is particularly apparent for medium and highly levered firms, where any value effects are greatest for highly levered firms as a result in a subsequent decrease in bankruptcy risk.

5. CONCLUSION AND IMPLICATIONS

This paper examined the value relevance of changes in leverage in the T&L sector. This follows the theoretical argument outlined in Myers (1984) and Miller and Rock (1985) that changes in financial leverage contain information on economic performance are therefore value relevant. This information is crucial in the T&L sector as firms in this sector are highly capital intensive when compared to other sectors as a result as the high capital requirements for their fixed asset components (Lee and Jang, 2007; Sivaprasad and Muradoglu, 2014). Although Dimitrov and Jain (2008) had previously addressed this question, establishing that changes in leverage are indeed value relevant, they utilised a sample of all firms listed on the NYSE, AMEX and NASDAQ stock markets, and therefore did not differentiate by sector. The fact that they did not differentiate by sector is crucial given that financing needs differ within industries where Arditi (1967), Melicher (1974) and Muradogu and Sivaprasad (2012a) argue that the true nature of the leverage-return relationship can only be established by testing this relation within industries.

This paper addressed the issue by using a sample of 173 firms and 2,047 firm-years for the period between 1993 and 2012, which formed part of the T&L sector T&L sector of the AMEX. We subsequently ran a regression of changes in leverage on stock returns, incorporating other firm characteristics and the Fama-French plus Carhart four factor model in order to test the robustness of our results. Our preliminary findings indicated that changes in leverage were indeed value relevant. Following this, we sub-divided our sample into five quintiles and repeated the process to determine in which firms changes in leverage were most value relevant. We found that changes in leverage were value relevant for medium and highly levered firms, where highly levered firms benefited most from decreases in leverage. We argue that since the T&L sector is capital intensive, firms can use these assets as collateral to find external financing; however, when their subsequent debt level reaches a certain point, the consequent bankruptcy risk increases leading to stock returns decreases. We therefore argue that this changes in leverage are most value-relevant for highly levered firms in the T&L sector.

REFERENCES

Arditti F. D. (1967). Risk and the required return on equity. *Journal of Finance*, 22(1), 19-36.

BHA Report (2010). British Hospitality Association Annual Report 2010.

Baker, S. H. (1973). Risk, leverage and profitability: An industry analysis. The Review of Economics and Statistics, 55(4), 503-507.

Bhandari, L. C. (1988). Debt/equity ratio and expected common stock returns: Empirical evidence. *Journal of Finance*, 43(2), 507-528.

Borde, S. F. (1998). Risk diversity across restaurants: An empirical analysis. *Cornell Hotel & Restaurant Quarterly*, 39(2), 64-69.

Carhart, M. M. (1997). On persistence in mutual fund performance. *Journal of Finance*, 52(1), 57-82.

Cave, J., Gupta, K., and Locke, S. (2009). Supply-side investments: An international analysis of the return and risk relationship in the Travel & Leisure sector. *Tourism Management*, 30(5), 665-673.

Chathoth, P. K., and Olsen, M. D. (2007). Does corporate growth really matter in the restaurant industry? *Hospitality Management*, 26(1) 66-80.

Chen, M. H. (2007). Macro and non-macro explanatory factors of Chinese hotel stock returns. *Hospitality Management*, 26(4), 991-1004.

Chen, M. H., Kim, W. G., and Kim, J. K. (2005). The impact of macroeconomic and non-macroeconomic forces on hotel stock returns. *Hospitality Management*, 24(2), 243-258.

Combs, J. G., and Ketchen, D. J., (1999). Explaining inter-firm co-operation and performance: Toward a reconciliation of predictions from the resource-based view and organizational economics. *Strategic Management Journal*, 20(9), 867-888.

Delcoure, N., and Dickens, R. (2004). REIT and REOC systematic risk sensitivity. *The Journal of Real Estate Research*, 26(3), 237-254.

Dimitrov, V., and Jain, P. C. (2008). The value relevance of changes in financial leverage beyond growth in assets and GAAP earnings. *Journal of Accounting, Auditing and Finance*, 23(2), 191-222.

Fama, E. F., and French, K. R., (1993). Common risk factors in the returns on stocks and bonds. *Journal of Financial Economics*, 33(1), 3-56.

Fama, E. F., Fisher, L., Jensen, M. C., and Roll, R. (1969). The adjustment of stock prices to new information. *International Economic Review*, 10(1), 1-21.

Gomes, J. F., and Schmid, L. (2010). Levered returns. *Journal of Finance*, 65(2), 467-494.

Gu, Z., and Kim, H. (2002). Determinants of restaurant systematic risk: A re-examination. *The Journal of Hospitality Financial Management*, 10(1), 1-13.

Hall, M., and Weiss, L. (1967). Firm size and profitability. *The Review of Economics and Statistics*, 49(3), 319-331.

Hamada, R. S. (1972). The effect of the firm's capital structure on the systematic risk of common stocks. *Journal of Finance*, 27(2), 435-452.

Hsu, L. T., and Jang, S (2009). Effects of restaurant franchising: Does an optimal franchise proportion exist? *International Journal of Hospitality Management*, 28(2), 204-211.

Jang, S., and Tang, C (2009). Simultaneous impacts of international diversification and financial leverage on profitability. *Journal of Hospitality & Tourism Research*, 33(3), 347-368.

Jarque, C. M., and Bera, A. K. (1980). Efficient tests for normality, homoscedasticity and serial independence of regression residuals. *Economics Letters*, 6(3), 255-259.

Jeon, S., Kang, I., and Lee, S. (2004). The relationship between persistence of abnormal earnings and usefulness of accounting information in hotel companies. *Tourism Management*, 25(6), 735-740.

Jeon, S., Kim, J., and Lee, S. (2006). The persistence of abnormal earnings and systematic risk, *Tourism Management*, 27(5), 867-873.

Kim, H., and Gu, Z. (2005). A preliminary examination of determinants of CEO cash compensation in the U.S. restaurant industry from an Agency Theory perspective. *Journal of Hospitality & Tourism Research*, 29(3), 341-355.

Kim, H., Gu, Z., and Mattila, A. S. (2002). Hotel real estate investment trusts' risk features and beta determinants. *Journal of Hospitality & Tourism Research*, 26(2), 138-154.

Kim, W. G., Ryan, B., and Ceschini, S. (2007). Factors affecting systematic risk in the US restaurant industry. *Tourism Economics*, 13(2), 197-208.

Kortweg, A. (2010). The net benefits to leverage. *Journal of Finance*, 65(6), 2137-2170.

Lee, J. S., and Jang, S. (2007). The systematic-risk determinants of the US airline industry. *Tourism Management*, 28(2), 434-442.

Madanoglu, M., Lee, K., and Catrogiovanni G. J. (2011). Franchising and firm financial performance among U.S. restaurants. *Journal of Retailing*, 87(3), 406- 417.

Mandelker, N., and Rhee, S. (1984). The impact of the degree of operation and financial leverage on systematic risk of common stock. *Journal of Financial and Quantitative Analysis*, 19(1), 45-57.

Melicher, W. (1974). Financial factors which influence beta variations within an homogeneous industry environment. *Journal of Financial Quantitative Analysis*, 9(2), 231-241.

Miller, M. H., and Rock, K. (1985). Dividend policy under asymmetric information. *Journal of Finance*, 40(4), 1031-1051.

Modigliani, F., and Miller, M. H., (1958). The cost of capital, corporation finance and the theory of investment. *American Economic Review*, 48 (3), 261- 297.

Muradoglu, Y. G., and Sivaprasad, S. (2012a). Capital structure and abnormal returns. *International Business Review*, 21(3), 328-341.

Muradoglu, Y. G. and Sivaprasad, S. (2012b). Using firm level leverage as an investment strategy. *Journal of Forecasting*, 31(3), 260-279.

Muradoglu, Y. G., and Sivaprasad, S. (2014). The impact of leverage on stock returns in the hospitality sector: Evidence from the UK. *Tourism Analysis*, 19(2), 161-171.

Myers, S. C. (1984). The capital structure puzzle. *Journal of Finance*, 39(3), 574-592.

Newell, G., and Seabrook, R. (2006). Factors influencing hotel investment decision making. *Journal of Property Investment and Finance*, 24(4), 279-294.

Nicolau, J. L. (2005). Leveraging profit from the fixed variable cost ratio: The case of new hotels in Spain. *Tourism Management*, 26(1), 105-111.

Nowman, K. B., and Van Dellen, S. (2012). Forecasting overseas visitors to the UK using continuous time and autoregressive fractional integrated models with discrete data. *Tourism Economics*, 18(4), 835-844.

Phillips, P. A., and Sipahioglu, M. A. (2004). Performance implications of capital structure: evidence from quoted UK organizations with hotel interest. *The Services Industries Journal*, 24(5), 31-51.

Rajan, R. G., and Zingales, L. (1995). What do we know about capital structure? Some evidence from international data. *Journal of Finance*, 50(5), 1421-1460.

Sheel, A (1994). Determinants of capital structure choice and empirics on leverage behavior: A comparative analysis of hotel and manufacturing firms. *Journal of Hospitality & Tourism Research, 17(3)*, 1-16.

Skalpe, O. (2003). Hotels and restaurants – are the risks rewarded? Evidence from Norway. *Tourism Management*, 24(6), 623-634.

Srinivasan, R. (2006). Dual distribution and intangible firm value: Franchising in restaurant chains. *Journal of Marketing*, 70(3), 120-135.

Schwartz, E. (1959). Theory of the capital structure of the firm. *Journal of Finance*, 14(1), 18-39.

TABLE 1
SUMMARY STATISTICS

This table presents the summary statistics for the final sample, which is comprised of a total 173 firms and 2,047 firm-years for the period between 1993 and 2012. In the table *R*, Δ*Lev*, *Lev*, *Size*, *PB*, *Risk* and *Tax* denote the average return, change in leverage, level of leverage, log of firm size, price-to-book ratio, market risk (proxied by beta) and effective tax rate, respectively. Figures in parentheses denote the corresponding *p*-values for the Jarque-Bera test (Jarque and Bera, 1980), which tests the null hypothesis that the corresponding variable is normally distributed.

	R	Δ*Lev*	*Lev*	*Size*	*PB*	*Risk*	*Tax*
Mean	0.02	-0.08	39.46	5.25	0.68	0.06	0.32
Median	0.01	0.00	38.00	5.33	0.72	0.02	0.33
Maximum	3.90	0.74	99.96	11.54	7.86	6.56	7.67
Minimum	-0.27	-131.54	0.00	-2.36	-9.21	-8.20	0.00
Std. Dev.	0.15	3.08	27.74	2.45	1.29	0.88	0.52
Skewness	18.00	-42.48	0.28	-0.06	-1.17	0.57	10.01
Kurtosis	412.72	1811.95	2.14	2.57	14.20	16.32	130.65
Jarque-Bera	12,877,552	250,000,000	80	15	9,968	13,609	1,270,868
Probability	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Observations	2,047	2,047	2,047	2,047	2,047	2,047	2,047

TABLE 2
PEARSON CORRELATION COEFFICIENTS

This table presents the Pearson correlation coefficients for the final sample, which is comprised of a total 173 firms and 2,047 firm-years for the period between 1993 and 2012. In the table *R*, Δ*Lev*, *Lev*, *Size*, *PB*, *Risk* and *Tax* denote the average return, change in leverage, level of leverage, log of firm size, price-to-book ratio, market risk (proxied by beta) and effective tax rate, respectively. ***, ** and * denote figures that are significant at the 1%, 5% and 10% levels of significance, respectively.

	R	Δ*Lev*	*Lev*	*Size*	*PB*	*Risk*	*Tax*
R	1.00						
Δ*Lev*	-0.06**	1.00					
Lev	0.02	0.01	1.00				
Size	-0.02	0.01	0.07***	1.00			
PB	-0.09***	-0.08***	0.13***	0.35***	1.00		
Risk	0.03	-0.09	0.02	-0.07***	-0.01	1.00	
Tax	-0.02	0.02	-0.01	0.01	-0.02	0.05**	1.00

TABLE 3
FULL SAMPLE ANALYSIS OF VALUE EFFECTS OF CHANGES IN LEVERAGE

This table presents the full-sample empirical analysis of the impact of changes in leverage on stock returns for the entire final sample, which is comprised of a total 173 firms and 2,047 firm-years for the period between 1993 and 2012. In the table ΔLev, *Size*, *PB*, *Risk*, *Tax*, $(R_M - R_F)$, *SMB*, *HML* and *Mom* denote the change in leverage, level of leverage, log of firm size, price-to-book ratio, market risk (proxied by beta), effective tax rate, proxy for size, proxy for distress and momentum factor, respectively. ***, ** and * denote figures that are significant at the 1%, 5% and 10% levels of significance, respectively and figures in parentheses denote the *t*-statistics.

Column [1] presents the results of our first model, which examines whether changes on leverage have an impact on stock returns, hence:

$$R_{i,t} = \alpha + \beta_1 \Delta Lev_{i,t} + \varepsilon_t \qquad (2)$$

Column [2] presents the results of our second model, which incorporates other factors that might have an impact on stock returns, where:

$$R_{i,t} = \alpha + \beta_1 \Delta Lev_{i,t} + \beta_2 Size_{i,t} + \beta_3 PB_{i,t} + \beta_4 Risk_{i,t} + \beta_5 Tax_{i,t} + \varepsilon_t \qquad (3)$$

Column [3] presents the results of our third model, which is an extension of the Fama-French plus Cahart model (Fama and French, 1993; Carhart, 1997), thus:

$$E\left(R_{i,t} - R_{f,t}\right) = \alpha + \beta_1 \Delta Lev_{i,t} + \beta_2 \left(R_{M,t} - R_{f,t}\right) + \beta_3 SMB_t + \beta_4 HML_t + \beta_5 Mom + \varepsilon_t \qquad (4)$$

	[1]	[2]	[3]
α	0.01***	-0.15***	18.55***
	(-50.08)	(-3.74)	-52.54
ΔLev	-0.01***	-0.01***	-0.01
	(-4.94)	(-4.00)	(-1.21)
Size		0.03***	
		-3.72	
PB		0.01	
		(-0.78)	
Risk		-0.01	
		(-0.84)	
Tax		0.01***	
		-4.23	
$\left(R_M - R_F\right)$			2.30
			-1.07
SMB			2.61
			-1.12
HML			-2.11
			(-0.81)
Mom			-1.65
			(-1.02)

TABLE 4
SUB-SAMPLE ANALYSIS OF VALUE EFFECTS OF CHANGES IN LEVERAGE

This table presents the sub-sample empirical analysis of the impact of changes in leverage on stock returns. The entire final sample, which is comprised of a total 173 firms and 2,047 firm-years for the period between 1993 and 2012, is subdivided into 5 quintiles, based on the respective change in leverage. Quintiles 1 to 5, presented in columns [1] to [5], correspond to firms with levels of leverage of between 0% and 20%, 20% and 40%, 40% and 60%, 60% and 80%, and 80% and 100%, respectively. In the table ΔLev, *Size*, *PB*, *Risk*, and *Tax* denote the change in leverage, level of leverage, log of firm size, price-to-book ratio, market risk (proxied by beta), and effective tax rate, respectively. ***, ** and * denote figures that are significant at the 1%, 5% and 10% levels of significance, respectively, and figures in parentheses denote the *t*-statistics.

Panel A presents the sub-sample results for our first model, which examines whether changes on leverage have an impact on stock returns, hence:

$$R_{i,t} = \alpha + \beta_1 \Delta Lev_{i,t} + \varepsilon_t \quad (2)$$

Panel B presents the sub-sample results of our second model, which incorporates other factors that might have an impact on stock returns, where:

$$R_{i,t} = \alpha + \beta_1 \Delta Lev_{i,t} + \beta_2 Size_{i,t} + \beta_3 PB_{i,t} + \beta_4 Risk_{i,t} + \beta_5 Tax_{i,t} + \varepsilon_t \quad (3)$$

Panel A

	[1] (Low)	[2]	[3]	[4]	[5] (High)
α	0.02***	0.01***	0.02***	0.02***	0.05***
	-14.99	-1217.48	-512.06	-9.16	-20.55
ΔLev	-0.01	-0.01***	-0.01	-0.02	-0.22**
	-0.03	(-76.30)	(-0.10)	(-0.45)	(-2.42)

Panel B

	[1] (Low)	[2]	[3]	[4]	[5] (High)
α	-0.02	0.01	-0.20**	-0.01	-0.04
	(-0.34)	-0.26	(-2.13)	(-0.10)	(-0.66)
ΔLev	-0.01	-0.01***	-0.03	-0.01	-0.17**
	(-0.01)	(-4.00)	(-0.47)	(-0.29)	(-2.03)
Size	0.01	0.01	0.04**	0.01	0.03**
	-0.38	(-0.29)	-2.32	(-0.14)	-2.33
PB	0.03	0.03***	-0.06*	0.04***	-0.03
	-0.76	-3.58	(-1.96)	-3.66	(-1.00)
Risk	-0.02	-0.01	-0.01	-0.01	0.01
	(-1.37)	(-1.62)	(-0.77)	(-1.32)	-0.47
Tax	-0.01	-0.01	0.01	-0.01	-0.06**
	(-1.03)	(-1.51)	(-1.59)	(-0.02)	(-2.00)

TABLE 5
SUB-SAMPLE ANALYSIS OF VALUE EFFECTS OF CHANGES IN LEVERAGE

This table presents the sub-sample empirical analysis of the impact of changes in leverage on stock returns. The entire final sample, which is comprised of a total 173 firms and 2,047 firm-years for the period between 1993 and 2012, is subdivided into 5 quintiles, based on the respective change in leverage. Quintiles 1 to 5, presented in columns [1] to [5], correspond to firms that with levels of leverage of between 0% and 20%, 20% and 40%, 40% and 60%, 60% and 80%, and 80% and 100%, respectively. In the table ΔLev, *SMB*, *HML* and *Mom* denote the change in leverage, , proxy for size, proxy for distress and momentum factor, respectively. ***, ** and * denote figures that are significant at the 1%, 5% and 10% levels of significance, respectively, and figures in parentheses denote the *t*-statistics.

The table presents the sub-sample results of our third model, which is an extension of the Fama-French plus Cahart model (Fama and French, 1993; Carhart, 1997), thus:

$$E\left(R_{i,t}-R_{f,t}\right)=\alpha+\beta_1\Delta Lev_{i,t}+\beta_2\left(R_{M,t}-R_{f,t}\right)+\beta_3 SMB_t+\beta_4 HML_t+\beta_5 Mom+\varepsilon_t \qquad (4)$$

	[1] (Low)	[2]	[3]	[4]	[5] (High)
α	56.06***	1.40***	3.65***	1.31***	3.94***
	-19.96	-15.07	-38.80	-5.80	-6.62
ΔLev	-0.11	-0.00***	-0.03	-0.07	-0.28**
	(-0.86)	(-33.78)	(-0.34)	(-1.47)	(-2.37)
$\left(R_M-R_F\right)$	7.96	0.06	0.03	0.29***	0.24
	-1.02	-0.67	-0.46	-2.63	-0.56
SMB	8.23	0.20	0.86	-0.27***	-0.06
	-1.03	-1.22	-1.35	(-0.96)	(-0.17)
HML	-7.83	0.49***	0.31	0.41	0.48***
	(-0.94)	-3.12	-1.61	-2.64	-2.59
Mom	-5.36	-0.03	-0.28**	0.12	-0.03
	(-0.98)	(-0.37)	(-2.03)	-1.12	(-0.12)