

# **The impact of capital structure on firms' performance: Evidence from companies listed in the Hotels and Travels Sector of Colombo Stock Exchange**

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## **Abstract**

This study has investigated the impact of capital structure on firms' financial performance of companies listed in the Hotels and Travels Sector of Colombo Stock Exchange (CSE). Panel regression design has been utilized to investigate this relationship covering a five-year period from 2012/2013 – 2016/2017. When performing this study, return on capital employed (ROCE), return on assets (ROA), earnings per share (EPS) and Tobin's Q have been used to measure the financial performance, the dependent variable while total debt to equity ratio has been used to measure the capital structure, which is the independent variable. Firm size, age, growth, tangibility and liquidity have been used as control variables. The study finds that capital structure has a statistically significant negative impact over financial performance of this sector, which confirmed findings of most of literatures.

**Key Words:** Capital structure, Firms' performance, Hotels and Travels Sector, Listed companies

## **1. Introduction**

Financing decisions, investing decisions and dividend decisions are the main decisions that every company should make in order to conduct their businesses in a proper manner. Among them financing decisions is being played a key role. An organization can be financed through equity

and debt sources and the proportionate combination of the equity and debt is known as the capital structure of an organization, even though different types of instruments are used. Capital structure can be identified as circulatory system of an organization.

Firms' performance can be measured in terms of financial measures and non-financial measures. Firms' financial performance can be measured through earning per share (EPS), return on capital employed (ROCE), return on equity (ROE), return on assets (ROA) and many other measures. However, non-financial performance can't be measured easily as financial performance. Even though non-financial performance can't be easily measured, non-financial performance also reflect through market based information. As an example share prices have an effect of non-financial information. Therefore Tobin Q can be identified as combined indicator of both financial and non-financial performance. Market standing, productivity and innovations can be identified as non-financial measures. This study is mainly focused on financial performance.

Firms' performance is influenced by many factors. Organization's size, growth, liquidity and capital structure are some of the factors among them. Modigliani and Miller (1958) expressed organization's capital structure has no impact on organizations' value. Since organizations' value reflect the performance of the organization, that theory indicate capital structure no impact on firms' performance as well. However, theory of capital structure debated over the period with empirical investigations done by other researches. Not only other researches, but also Modigliani and Miller (1963) relaxed the no tax assumption and developed a theory on capital structure while associating tax benefit of debts. Although different capital structure theories such as agency cost, pecking order, trade off theories have been developed during the last few decades so as to determine impact on firm performance they differ in their relative emphasis. This study is developed to in order identify practical implication of those theories and to reveal the impact and evaluate the contradictory evidence that in prior literatures. This study examines how the capital structure impacts on the performance of companies listed in the Hotels and Travels Sector of Colombo Stock exchange (CSE), Sri Lanka.

In this study, scope is limited to Hotels and Travels Sector. Hotels and Travels Sector have been chosen over other sectors, because of its significance to Sri Lankan economy. Whist the

contribution of travel and tourism to GDP is 11.4% in 2016 and it has increased by 3.7% within a period of 5 years since 2011 (Annual Report of CBSL, 2016) Hence, there is a greater focus as to the expansion of this sector in based on government policies and budgets, and investments in this sector has also been increased significantly

### **1.1 Research Questions and Research Objectives**

Even though many studies have been conducted on the relationship between capital structure and firm performance, contradictory findings are observed. . Therefore, this study investigates the relationship between capital structure and firm performance based on the Hotels and Travels Sector listed companies.

Based on literature review, the study has identified different perspectives of the researchers on capital structure and firm performance. The studies of Abor (2005) in Ghana and , Roden and Lewellena (1995), Abu and Abdussalam (2006) in Jordan and as well as Gill, Biger and Mathur in United States find a positive relationship between capital structure and firm performance. Similarly Nirajini and Priya (2013) also revealed a positive relationship between capital structure and financial performance in their study done in Sri Lanka which has been conducted among a sample of 11 trading listed companies. In contrary, Chiang (2002) in the case of Hong Kong, Sadeghian in Tehran (2012), Shubita (2005) in the case of listed firms in Amman Stock Exchange, and Dawar (2014) in India have found there is a negative relationship between capital structure and firm performance. Even in in Sri Lanka Pratheepkanth (2011) and Arulvel and Ajanthan (2013) have found a negative relationship between capital structure and firm performance.

In this context, the study is carried out with an overall objective to investigate the impact of capital structure on firms' financial performance in Sri Lankan Hotels and Travels Sector.

### **1.2 Significance of the study**

Theoretically this research is important because it can be identified many contradictory findings over a period of time in world's economy as well as in Sri Lankan context Even though, Nirajini and Priya (2013) found a positive relationship between capital strcture and firm performance in trading listed companies, Pratheepkanth (2011) and Arulvel and Ajanthan (2013) found a

negative relationship in . In addition, Hamidon and Ranjani (2015) found that there is no significant association between capital structure components and firm's financial performance in manufacturing companies. This warrants a further investigation of this issue in Sri Lanka and it is examined in the current study based on the Hotels and Travels Sector of CSE, considering its economic significance and resulting investments.

In practically, the issue of impact of capital structure on firm's financial performance is an important consideration, that board of directors and management of every organization should have to critically evaluate, when taking strategic financing decisions. Since firms' financial performance is the key indicator for every stakeholder to make their decisions. Therefore, findings of this research can be established the importance of this study, mainly to management of organizations, to investors, to researchers and to government and economy, especially with reference to stakeholders of Hotels and Travels Sector in Sri Lanka.

The sustainability and survival of entities heavily depend on financial performance and capital structure of entities. In order to maximize the value of the firms, management of firms has to determine the capital structure for better performance. Through this study, it can be identified and evaluated in proper manner.

The findings of the research will be practically useful specially for managers and other decision makers in Hotels and Travels Sector to make their decisions in a proper manner regarding capital structure by enabling them to understand impact of capital structure on firms' financial performance. Through that they can make decisions and policies which enhance firms' performance as they expected.

## **2. Literature Review**

Capital structure is a mixture of company's debts (long-term and short-term), common equity and preferred equity including reserves and surpluses. (Arulvel and Ajanthan, 2013, Pratheepkanth, 2011) According to Zeitun and Tian (2007) there are three main determinants of capital structure, firms' profitability; profitable firms are less likely to depend on debt in their capital structure than less profitable ones, growth rate of a firm; firms with a high growth rate have a high debt to equity ratio and bankruptcy cost (proxied by firm size). A study done by Barclay

and Smith (1995) also provides evidences that large firms and firms with low growth rates prefer to issue long-term debt. Stohs and Mauer (1996) suggest that larger and less risky firms usually make greater use of long-term debt. Other than to these three factors, Arulvel and Ajanthan identify debt maturity and tax rate will also influence a company's option in investing.

A study done in Sri Lankan context by Pratheepkanth in 2011, identifies cost of issuing, various taxes and rate, interest rate as the reasons for the variation in Financial Leverage across the firms. Study done in Greek manufacturing sector by Voulgaris in 2002 finds asset utilization, gross and net profitability and total assets growth as determinants of capital structure. Indian firms, Bhaduri (2002) finds that capital structure can be influenced by growth, cash flow, size, and product and industry characteristics, and as well as restructuring costs inhibit adjustments towards an optimal capital structure. Aggarwal (1994) finds country and industry classifications also can be significant determinants of capital structure. Mohammadi and Derakhshan in 2015 finds that variables such as firm's size, financial flexibility, asset structure, profitability, liquidity, growth, risk and state ownership affect all measures of capital structure of Iranian corporations.

The profitability of a company depends to a great extent on the profits available to shareholders after paying dividends for preference shares and interests to other types of investors of the company (Zoysa, Manawaduge and Chandrakumara, 2009). The most commonly used performance measure proxies are return on assets (ROA) and return on equity (ROE) or return on investment (ROI). There are market performance measures other than to the accounting measures such as price per share to the earnings per share (P/E), (Shahid, 2003) market value of equity to book value of equity (MBVR), and Tobin's Q (Zeitun and Tian, 2007) Empirical evidences can be obtained which emphasize the relationship between leverage and firm performance. Some studies report mixed and contradictory evidences both positive as well as negative effects of leverage on firm performance.

While the literature examining, it is understood that there are other factors, besides capital structure, that may influence firm performance. Zeitun and Tian in 2007 identifies firm size, age, growth, risk, tax rate, factors specific to the sector of economic activity, and factors specific to macroeconomic environment of the country also affect to the firm performance. Barclay and Smith in 1995 and Ozkan in 2002 debt maturity structure as another factor that affects

performance. Furthermore Ramaswamy in 2001, Frank and Goyal in 2003 and Jermias in 2008 also suggest that firm's size may influence its performance, larger firms have a greater variety of capabilities and can enjoy economies of scale, which may influence the performance of the firm.

Most of scholars have done their studies on capital structure and firms' performance centralized to theories. Major theories can be identified as follows.

### **Modigliani-Miller Theory (MM Theory)**

Modigliani-Miller in 1958 argued that capital structure is irrelevant in determining firm value. This argument was done under very restrictive assumptions which as; perfect capital markets, investors' homogenous expectations, tax-free economy, and zero transactions costs. According to this proposition, a firm's value is determined by its real assets, not by the mix of securities it issues and under arbitrage situations if possible. However these restrictive assumptions do not further exist in the real complex world and then this theory later became known as the "Theory of Irrelevance" (Schwartz and Aronson, 1979). Then they attempted to find the reasons for higher rate of return when the debt ratio was increased. It stated that the higher expected rate of return generated by debt financing is exactly offset by the risk incurred, regardless of the financing mix chosen. (Puwanenthiren Pratheepkanth, 2011) Ibrahim El-Sayed Ebaid in 2009 further says this situation has led many researchers to introduce additional rationalization for this proposition and its underlying assumptions showing that capital structure affects firm's value and performance, especially after the seminal paper of Jensen and Meckling in 1976.

### **Trade-off theory**

According to Dawar (2014) Trade-off theory simply suggests an optimum debt level or target level in terms of balance between tax savings and bankruptcy cost. According to trade-off theory, optimal capital structure could be determined by balancing the different benefits and costs associated with debt financing. Modigliani and Miller in 1963 explains debt benefits as including tax shields (saving) and reduction of agency costs; through the threat of liquidation which causes personal losses to managers of salaries, reputation, perquisites, and through the need to generate cash flow to pay interest payment. Jensen in 1986 reveals high leverage can also enhance the firm's performance by mitigating conflicts between shareholders and managers

concerning the free cash flows. Modigliani and Miller in 1963 further explain debt costs as include direct and indirect bankruptcy costs and debt financing as the commitment for future cash outflows in terms of periodic interest and the principal borrowed. These commitments increase the likelihood of firm's financial default and bankruptcy. (Warner, 1977) Dawar in 2014 states that, as per the trade-off theory, more profitable firms have higher income tax shield and therefore borrow more debts to take tax advantages. Consequently, a positive relationship could be expected between debt level and firm's performance.

### **Pecking order theory**

Pecking order theory (Myers and Majluf, 1984; Myers, 1984) assumes hierarchy of financial decisions under which firm resort to external financing only in absence of internal financing. Kester in 1986 suggests that managers will prefer financing new investments by using internal sources. Only if this source is not enough then managers seek for external sources from debt as second option and equity as last option. According to the pecking order theory profitable firms which generate high earnings use less debt in their capital structure than those do not generate high earnings, since they are able to finance their investment opportunities with retained earnings. Therefore a negative relationship could be expected between debt level and firm's performance (Dawar 2014).

### **Agency costs theory**

Agency costs theory is developed by Jensen and Meckling (1976), in order to discuss the agency costs which arise on account of conflict between managers and shareholders and how it impact on the relationship between capital structure and profitability. This theory states that due to the separation of ownership and control of firms creates conflicts of interest between the firm's shareholders and managers. Managers tend to maximize their own utility rather than the value of the firm. Therefore this theory argues that issuing debt may lower the agency costs and it may affect firm performance by disciplining or encouraging managers to act in the best interests of the shareholders rather than allowing in discretionary behaviour. Dawar in 2014 states increasing leverage can mitigate agency costs and have a positive effect on profitability and consequently firm performance.

As per Joshua Abor in 2005, with regard to the relationship between total debt and return rates, he identifies a significant positive association between the ratio of total debt to total assets and return on equity. Further he finds that there is a significant positive relationship between the ratio of short-term debt to total assets and ROE while long-term debt to total assets and ROE has a negative relationship. Roden and Lewellen in 1995 also reveal the positive relationship between total debt and ROE. Further Abu and Abdussalam in 2006 find this relationship in case of Jordan listed firms. Niranjani and Priya in 2013, state a positive relationship between capital structure and financial performance through their study by using listed trading companies in Sri Lanka. In the study done by Dawar in 2014, he has identified when debt increases, corporate governance can change from internal to external control thereby having a positive impact on firm's profitability.

However, Chiang in 2002 finds negative relationship between capital structure and performance from his study done in the case of Hong Kong firms belonging to property and construction sector. Similarly, Sadeghian in 2012 reveals a negative relationship in Tehran context by using a combination of accounting (ROA, ROE) and market measures (Tobin's Q). The study done by Shubita in 2005 also evidences a negative relationship in industrial companies listed on Amman Stock Exchange. Dawar (2014) also suggests that leverage has a negative influence on financial performance of Indian firms in 2014. Zeitun and Tian in 2007 find the negative impact in both the accounting and market's performance measures. Other studies done by Krishnan and Moyer in 1997, Gleason and Mathur in 2000, Yazdanfar and Peter Ohman in 2014 are also results a negative relation.

Other than to the positive or negative relationship some evidences can be obtained which reveal that there is no any relationship between capital structure and firm performance. Using three of accounting-based measures of financial performance (i.e. ROE, ROA and gross profit margin), and based on a sample of non-financial Egyptian listed firms from 1997 to 2005, Ibrahim El-Sayed Ebaid in 2009 reveals that capital structure choice decision, in general terms, has a weak-to-no impact on firm's performance.

In Sri Lanka several studies have been done on the relationship between capital structure and firms' performance and these studies have found contradictory results. For example the study

conducted by Pratheepkanth in 2011 by using companies listed on Colombo Stock Exchange during the period of 2005-2009 has found a negative relationship between capital structure and firm performance. Arulvel and Ajanthan in 2013 carried out a study on this regards and found a negative relationship. Hamidon and Ranjani has studied the relationship between capital structure and firm performance of Sri Lankan Manufacturing sector and revealed that capital structure is not a major determinant factor affecting the firm's financial performance where it's evident that there is no significant association between capital structure components and firm's financial performance. Nirajini and Priya in 2013 revealed a positive relationship between capital structure and financial performance.

### **Research gap**

Therefore we can understand that there are contradictory conclusions have been arose on this research problem even though less number of studies have been done within Sri Lankan context. Further, as a developing country the findings of foreign studies may not apply to Sri Lankan context as it is. Therefore we are conducting this study to reveal the relationship between capital structure and firm performance based on Sri Lankan companies.

Owing to the contradictory nature of findings as to the relationship between capital structure and firm performance both internationally and Sri Lanka, in this study this issue is further investigated based on an emerging economic sector- Hotels and Travels of CSE.

## **3. Methodology**

### **3.1 Research Approach and Research Design**

The impact of capital structure on firms' performance has been studied using a panel regression design under quantitative research approach.

### **3.2 Population and Sample**

The sample period of the study is five years from 1st April 2012 to 31st March 2017. There were 39 companies listed in the Hotels and Travels Sector of CSE as at 31st March 2018. Of which, 33 for companies (Refer Appendix 1) have been selected considering the availability of annual reports for a five-year period.

The balance six companies were not selected due to the following reasons:

- The three had been listed during the sample period. Hence, five years data is not available.
- One company was excluded as its annual reports have not been published for five years. ‘
- The other two companies are having a different financial year (i.e. 31st Decembers) whilst all others financial year is ending on 31st March.

The names of these companies are also included in Appendix 1 with relevant details.

### **3.3 Conceptual Framework**

Based on the literature survey carried out in this study, the relationship between capital structure and firms’ performance was examined by controlling the factors such as firm age, age, growth, liquidity and tangibility.

The dependent variable of this relationship – the firm financial performance has been measured using multiple variables as in the case of studies of Abor (2007), Ebid (2009), Salim and Yadav, (2012). They have used multiple variables like ROA, ROIC, ROE, gross profit margin, EPS and Tobin’s Q. In our study, we use ROCE, ROA, EPS and Tobin’s Q as measures of firms’ performance. Since these variables have been considered as preferred variables that can be used to measure financial performance as well as market performance in literature.

In order to identify the relationship between debt ratios and profitability in detail, the capital structure variables were divided into two categories; short term debt and long term debt. The short-term debt ratio was measured as debt repayable within one year, as a percentage of total assets (Abor, 2007). The long-term debt ratio was defined as the total debt repayable beyond one year, as a percentage of total assets. (Abor, 2007) However we have considered total debts to equity ratio. Since the classification of debt is simply for accounting purposes, however when it is considered in together, it does represent the total debt that should be paid in future.

Control variables although findings of previous studies with regard to how size affects profitability are mixed, a firm’s size is theoretically expected to positively influence its profitability. Compared with smaller firms, larger companies tend to exploit economies of scale and have better abilities to use technology. They can also achieve better product diversification

and larger market shares (growth). (Yazdanfar and Ohman, 2014). Instead of those, age, tangibility and liquidity are considered as control variables.

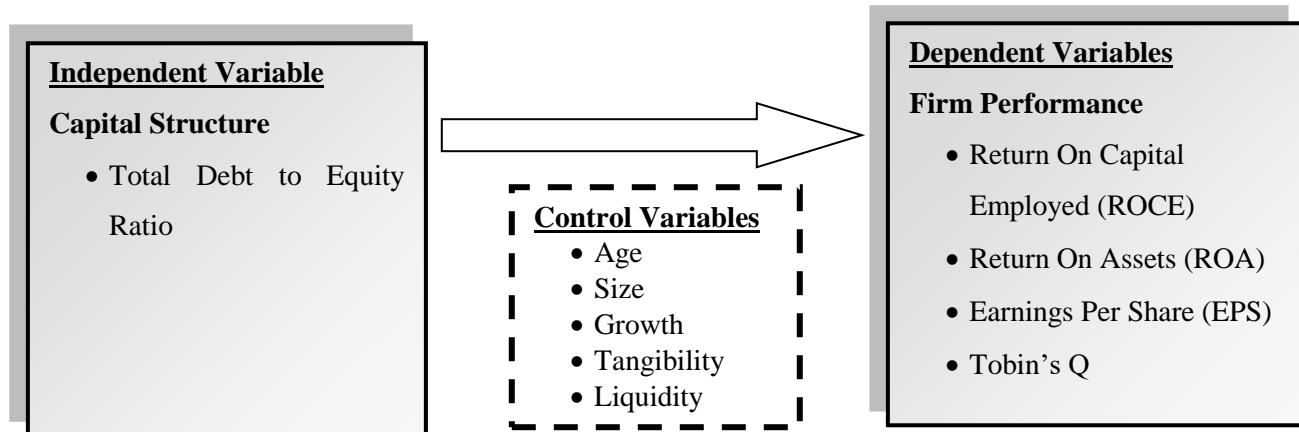


Figure 1: Relationship between capital structure and firms' performance

### 3.4 Hypotheses

Based on the conceptual framework of the study, the following null hypotheses were derived.

- H<sub>01</sub>** – There is a no relationship between total debt to equity ratio and return on capital employed ratio.
- H<sub>02</sub>** – There is a no relationship between total debt to equity ratio and return on assets ratio.
- H<sub>03</sub>** – There is a no relationship between total debt to equity ratio and earnings per share
- H<sub>04</sub>** – There is a no relationship between total debt to equity ratio and return on Tobin's Q ratio

### 3.5 Data Collection

The data was collected through publicly available financial statements in the annual reports of companies which have been selected to the sample. As a secondary data source financial statements in annual reports are more reliable, since it have been prepared according to the Sri Lanka Accounting Standards and have been subjected to an external audit.

### 3.6 Variables

The dependent variable; firms' profitability can be measured and expressed in various ways. Several researchers (Abor 2007, Ebid 2009, Salim & Yadav 2012) have used multiple variables like ROCE, ROA, ROE, gross profit margin, EPS and Tobin's Q as measures of firms' performance. Therefore, in our study, we use ROCE, ROA, EPS and Tobin's Q as measures of firms' performance based on literature.

ROCE - Profit before income tax and finance expense/ (Equity + Total debts)

ROA - Profit for the year/Total Assets

EPS - Profit attributable shareholders/Weighted average number of shares

Tobin's Q - Market value of the share capital/Total assets

The debts can be divided into two categories; short term debt and long term debt. The short-term debt ratio was measured as debt repayable within one year, as a percentage of total assets (Abor 2007). The long-term debt ratio was defined as the total debt repayable beyond one year, as a percentage of total assets (Abor 2007). Generally, only long term debts are considered as a part of capital structure. However, in this study, total debts to equity ratio considered as measure of capital structure to take whole impact of short term debts and long term debts.

Although findings of previous studies with regard to how size affects profitability are mixed, a firm's size is theoretically expected to positively influence its profitability. Compared with smaller firms, larger companies tend to exploit economies of scale and have better abilities to use technology. They can also achieve better product diversification and larger market shares (growth) (Yazdanfar and Ohman, 2014). Instead of those, age, tangibility and liquidity are considered as control variables.

### 3.7 Data Analysis Tools

The study have been used "Stata" statistical package in order to perform descriptive statistical analysis, correlation analysis and regression analysis for investigate the relationship and the impact of capital structure on firms' performance.

Descriptive analysis has been performed in order to provide an overall interpretation on the data that analysed.

The correlation analysis has been performed to identify the relationship and significance of relationship between the each of dependent variable and independent variable and control variables.

Regression analysis is a process of assessing the relationships among independent and dependent variables. The relative relationship between two variables can be demonstrated using the regression equation. The following regression equations are formulated to demonstrate the relationship between capital structure and firms' performance using a panel regression model.

$$ROCE = \beta_0 + \beta_1 DTE + \beta_2 AGE + \beta_3 SIZE + \beta_4 GRW + \beta_5 TANG + \beta_6 LIQ$$

$$ROA = \beta_0 + \beta_1 DTE + \beta_2 AGE + \beta_3 SIZE + \beta_4 GRW + \beta_5 TANG + \beta_6 LIQ$$

$$EPS = \beta_0 + \beta_1 DTE + \beta_2 AGE + \beta_3 SIZE + \beta_4 GRW + \beta_5 TANG + \beta_6 LIQ$$

$$TOBIN'S Q = \beta_0 + \beta_1 DTE + \beta_2 AGE + \beta_3 SIZE + \beta_4 GRW + \beta_5 TANG + \beta_6 LIQ$$

Where;

ROCE – Return on Capital Employed

ROA – Return on Assets

EPS – Earnings Per Share

TOBIN'S Q – Tobin Q Ratio (Market Value of the Share Capital / Total Assets)

DTE – Total debt to total equity ratio

AGE – Age is the number of years from the incorporation of the firm

SIZE – Size of the firm. Firm's market capitalization (Market share price\*Number of shares) as a percentage of the total market capitalization of all the companies considered for the study

GRW – Growth of the firm is the revenue growth between preceding years to the current year, taken separately for each year

TANG – Tangibility of the firm in terms of fixed assets to total assets ratio

LIQ – Liquidity of the firm in terms of current ratio

## 4. Analysis and Discussion

### 4.1 Descriptive Analysis

The following table has been built to represent the mean, minimum, maximum and standard deviation of the variables.

Table 1: Descriptive Analysis

Variables	Observations	Mean	Std. Dev.	Min	Max
Total debt to equity ratio	165	31.07%	0.4081	0%	267%
ROCE	165	6.03%	0.0910	-77%	33%
ROA	165	3.10%	0.0741	-57%	22%
EPS	165	7.11	26.6142	-32.31	169.50
Tobin's Q	165	89.82%	1.3633	8%	997%
Age	165	34	23.0998	2	125
Size	165	3.04%	0.0475	1%	20%
Growth	165	102.82%	7.6431	-64%	8444%
Tangibility	165	74.70%	0.2102	8%	99%
Liquidity	165	3.57	10.5585	0.07	86.48

According to the above Table 1, there are un-gearred companies as well as highly geared companies in the Hotels and Travels Sector. Debt to equity ratio ranges from 0% to 267%. Average debt-equity ratio is 31.07% indicates that the major portion of Hotels and Travels Sector's capital requirement is fulfilled by equity capital. Standard deviation of 0.4081 indicates the fact that most of the companies within the Hotels and Travels Sector have capital structures (debt to equity) which are closer to the sector average.

Return on Capital Employed (ROCE) ranges from -77% to 33% with a mean of 6.03%. As the standard deviation of ROCE is 0.0910, it can be concluded that the deviation of ROCE in Hotels and Travels Sector is less significant even though there are few outperforming and underperforming companies in the industry. In line with ROCE, mean of ROA is 3.10% which have range from -57% to 22% and standard deviation of 0.0741. Even though mean EPS and Tobin's Q are 7.11 and 89.82 respectively, standard deviations are 26.6142 and 1.3633 respectively which can be considered as significant. Minimum EPS of Hotels and Travels Sector

is -32.31 and the maximum is 169.50. Since one company has more than 135.28 EPS for five years, while rest of companies having less than 56.81 EPS for each year, it will lead to higher standard deviation. Through the different measures on firms' financial performance, the study can establish solid evidence.

These descriptive can be identified in relation control variables. Minimum age of companies is 2 years and maximum is 125 years, it indicates that the representativeness of the sample. In this Hotels and Travels Sector, there are smaller size companies which have 1% market capitalization from the sector. There are companies that have 20% market capitalization from the sector as well, even though average size is 3.04% and standard deviation is 0.0475. The sector has an average growth of 102.82% in revenue point of view with a standard deviation of 7.6431. This reflects the emergence of Hotels and Travels Sector. Revenue of two companies have been increased by 8444% and 5002% in two different years. That will reflect in the maximum growth. Tangibility has been measured in terms of fixed assets to total assets. Tangibility ranges from 8% to 99% with a mean of 74.70% and standard deviation of 0.2102. Liquidity is measured in terms of current ratio. Mean liquidity in the Hotels and Travels Sector is 3.57 which have minimum of 0.07 and maximum of 86.48. Standard of liquidity is 10.5585 which reflect greater deviation of liquidity from the mean.

## 4.2 Correlation Analysis

Table 2: Correlation Analysis when ROCE is considered as performance measure

	ROCE	Total debts to equity ratio	Age	Size	Growth	Tangibility	Liquidity
ROCE	1.0000						
Total debts to equity ratio	-0.3559	1.0000					
Age	0.1296	-0.1828	1.0000				
Size	0.2008	-0.1718	-0.0751	1.0000			
Growth	-0.1118	0.0574	-0.0432	-0.0436	1.0000		
Tangibility	-0.1775	0.0961	0.0871	0.0522	0.0878	1.0000	
Liquidity	0.0686	-0.1552	-0.0620	-0.0554	-0.0331	-0.3918	1.0000

Table 3: Correlation Analysis when ROA is considered as performance measure

	ROA	Total debts to equity ratio	Age	Size	Growth	Tangibility	Liquidity
ROA	1.0000						
Total debts to equity ratio	-0.4939	1.0000					
Age	0.1606	-0.1828	1.0000				
Size	0.2424	-0.1718	-0.0751	1.0000			
Growth	-0.1479	0.0574	-0.0432	-0.0436	1.0000		
Tangibility	-0.1854	0.0961	0.0871	0.0522	0.0878	1.0000	
Liquidity	0.1366	-0.1552	-0.0620	-0.0554	-0.0331	-0.3918	1.0000

Table 4: Correlation Analysis when EPS is considered as performance measure

	EPS	Total debts to equity ratio	Age	Size	Growth	Tangibility	Liquidity
EPS	1.0000						
Total debts to equity ratio	-0.2283	1.0000					
Age	0.6156	-0.1828	1.0000				
Size	-0.0199	-0.1718	-0.0751	1.0000			
Growth	-0.1151	0.0574	-0.0432	-0.0436	1.0000		
Tangibility	-0.2058	0.0961	0.0871	0.0522	0.0878	1.0000	
Liquidity	0.2076	-0.1552	-0.0620	-0.0554	-0.0331	-0.3918	1.0000

Table 5: Correlation Analysis when Tobin's Q is considered as performance measure

	Tobin's Q	Total debts to equity ratio	Age	Size	Growth	Tangibility	Liquidity
Tobin's Q	1.0000						
Total debts to equity ratio	-0.2105	1.0000					
Age	-0.0649	-0.1828	1.0000				
Size	0.5334	-0.1718	-0.0751	1.0000			
Growth	-0.0472	0.0574	-0.0432	-0.0436	1.0000		
Tangibility	0.1731	0.0961	0.0871	0.0522	0.0878	1.0000	
Liquidity	-0.0397	-0.1552	-0.0620	-0.0554	-0.0331	-0.3918	1.0000

According to the above correlation analysis tables, the study identified that there is a negative relationship between total debt to equity and the financial performance measures that used. Correlation of -0.3559, -0.4939, -0.2283 and -0.2105 have been identified between total debts to equity ratio and ROCE, ROA, EPS and Tobin's Q respectively. However, the analysis indicate a negative relationship, those are moderate negative relationships. Even though correlation indicate relationships between independent variable and dependent variables, it provide an incentive perform regression analysis in order to identify the impact of capital structure on firms' performance.

According to the above Table 2, positive correlations are indicating age, size and liquidity to ROCE, while growth and tangibility indicating negative correlation to ROCE.

According to the Table 3 above, positive correlations are indicating age, size and liquidity to ROA, while growth and tangibility indicating negative correlation to ROA as same as correlations indicate for ROCE.

When considering the correlation towards EPS, positive correlation can be identified in age and liquidity towards ROA. However, size, growth and tangibility have been indicated negative relationships towards ROA.

According to the above Table 5, age, growth and liquidity have been indicated insignificant negative correlation towards Tobin's Q, while size and tangibility indicating positive correlation to Tobin's Q.

#### **4.3 Regression Analysis**

Results of the regression analysis in relation each dependent and the debt to equity ratio, age, size, growth, tangibility and liquidity have been illustrated in following tables. In performing regression analysis, winsorization of data is done in SPSS, since outliers are included in the collected data. In addition, random effect model and fixed effect model have been used to run the regression. Hausman test has been applied to choose the best model among them for each and every dependent variable.

Table 6: Co-efficient when ROCE is considered as the dependent variable

Independent Variables	Dependent Variable : Return on Capital Employed	
	Co – efficient	P – Value
Debt to equity	-0.05369	0.000*
Age	0.00039	0.223
Size	0.28062	0.061
Growth	-0.00056	0.367
Tangibility	-0.06150	0.055
Liquidity	0.00030	0.548
Constant	0.10332	0.000*

\* - Indicate statistically significant (P<0.05)

According to the above regression analysis results in Table 6, it can be stated that null hypothesis (H<sub>01</sub>) has been rejected and negative relationship has been identified between debt to equity ratio and ROCE. According the results given in Hausman test it is concluded that random effect model is appropriate. When debt to equity ratio reduces by 1 unit, ROCE will be increased by 0.05369. The relationship can be illustrated in a regression formula as follows.

$$ROCE = 0.10332 - 0.05369DTE + 0.00039AGE + 0.28062SIZE - 0.00056GRW - 0.06150TANG + 0.00030LIQ$$

Further, above formula illustrates, ROCE will be 0.10332 when all independent variables held at zero. However, it is very insignificant relationship exists between control variables and ROCE.

Table 7: Co-efficient when ROA consider as dependent variable

Independent Variables	Dependent Variable : Return on Assets	
	Co – efficient	P – Value
Debt to equity	-0.06134	0.000*
Age	-0.00484	0.005*
Size	0.23458	0.485
Growth	-0.00072	0.133
Tangibility	-0.05008	0.231
Liquidity	0.00029	0.508
Constant	0.24846	0.000*

\* - Indicate statistically significant (P<0.05)

According to the results in Table 7, it can be stated that null hypothesis ( $H_02$ ) has been rejected and negative relationship has been identified between debt to equity ratio and return on assets. Hausman test it is concluded that fixed effect model more appropriate in developing regression over ROA. When debt to equity ratio reduces by 1 unit, ROA will be increased by 0.06134. The relationship can be illustrated in a regression formula as follows.

$$ROA = 0.24846 - 0.06134DTE - 0.00484AGE + 0.23458SIZE - 0.00072GRW - 0.05008TANG + 0.00029LIQ$$

Even though, statistically significant impact is identified with debt to equity ratio and age over ROA, ROA will be highly impacted by debt to equity ratio with compare to age.

Table 8: Co-efficient when EPS consider as dependent variable

Independent Variables	Dependent Variable : Earnings per share	
	Co – efficient	P – Value
Debt to equity	-2.33627	0.049*
Age	0.14035	0.360
Size	25.08244	0.403
Growth	-0.07153	0.097
Tangibility	-4.61952	0.216
Liquidity	0.01434	0.721
Constant	5.64803	0.332

\* - Indicate statistically significant ( $P < 0.05$ )

Hausman test it is concluded that fixed effect model more appropriate in developing regression over EPS. According to the results of fixed effect regression model given in Table 8, it can be stated that null hypothesis ( $H_03$ ) has been rejected and negative relationship has been identified between debt to equity ratio and earnings per share. When debt to equity ratio reduces by 1 unit, ROA will be increased by 0.05369. The relationship can be illustrated in a regression formula as follows.

$$EPS = 5.64803 - 2.33627DTE + 0.14035AGE + 25.08244SIZE - 0.07153GRW - 4.61952TANG + 0.01434LIQ$$

Statistically significant impact is identified between debt to equity ratio and EPS. According to co-efficient assigned to age, greater impact can be identified over EPS. Since, impact of age is not statistically significant according given results in regression model.

Table 9: Co-efficient when Tobin's Q consider as dependent variable

Independent Variables	Dependent Variable : Tobin's Q	
	Co – efficient	P – Value
Debt to equity	-0.27953	0.001*
Age	-0.07942	0.000*
Size	3.51490	0.091
Growth	-0.00089	0.764
Tangibility	0.41558	0.107
Liquidity	-0.00091	0.742
Constant	3.29616	0.000*

\* - Indicate statistically significant ( $P < 0.05$ )

According to Hausman test fixed effect model is more appropriate in developing regression over Tobin's Q. According to regression model given in Table 9, it can be stated that null hypothesis ( $H_0$ ) has been rejected and negative relationship has been identified between debt to equity ratio and Tobin's Q. The relationship can be illustrated in a regression formula as follows.

$$TOBIN'S Q = 3.29616 - 0.27953DTE - 0.07942AGE + 3.51490SIZE - 0.00089GRW + 0.41558TANG - 0.00091LIQ$$

Debt to equity ratio and age are indicated a statistically significant impact on Tobin's Q. However, debt to equity ratio has a higher co-efficient with compare to age. Therefore, debt to equity ratio can be identified as the variable that has main impact on Tobin's Q.

#### 4.4 Discussion

According to regression models developed with reference to four dependent variables to obtain solid evidence without depending one performance measure, it is found that total debt to equity ratio has a statistically significant negative impact on return on capital employed, return on assets, earnings per share and Tobin's Q. However, control variables indicating contradictory impacts on dependent variables. The previous studies done in Sri Lanka - Pratheepkanth (2011)

and Aruvel and Ajanthan (2013) has been also evidenced that there is a negative relationship between capital structure and firm performance. In both these studies researches have taken all listed companies in CSE including Hotels and Travels Sector companies. Even though we have only considered about Hotels and Travels Sector in this study, the final outcome has not different to the previous studies. Further, the results of this study is in-line with the empirical studies of Chiang in 2002, Sadeghian in 2012, Shubita in 2005, Dawar in 2014, Zeitun and Tian in 2007, Krishnan and Moyer in 1997, Gleason and Mathur in 2000, Yazdanfar and Peter Ohman in 2014 which have also found in a negative relationship between capital structure and firm performance. When we consider about the theoretical implication of this study, the final outcome - the negative relationship between capital structure and firms' performance is more coherent with the "Pecking Order Theory". Pecking Order Theory, which assumes a negative correlation (relationship) between firm value and the debt level in the capital structure. By developing Pecking order theory, Myers and Majluf (1984) argued that there is a hierarchy in the firm's preference for financing its assets. According to the Pecking Order Theory profitable firms which generate high earnings use less debt in their capital structure than those do not generate high earnings, since they are able to finance their investment opportunities with retained earnings. Therefore, a negative relationship could be expected between the debt level and the firm's performance.

## **5. Conclusion**

This study has been investigated whether capital structure affects the financial performance of firms, with reference to Hotels and Travels Sector. The impact is investigated with reference to return on capital employed, return on assets, earnings per share and Tobin's Q as financial performance measures. According to panel regression models developed in this study, statistically significant negative relationship has been identified between debt to equity ratio and four dependent variables while considered control variables indicating contradictory impacts in different models and statically insignificant impacts over four dependent variables. The findings of the study are consistent with the findings of previous studies done in Sri Lanka as well as internationally. The previous studies (Pratheepkanth, 2011; Arulvel and Ajanthan, 2013) indicate that there is a negative relationship between capital structure and firms performance of

companies listed on CSE. Additionally, the foreign studies, Chiang (2002) in the case of Hong Kong firms belonging to property and construction sector, Sadeghian (2012) in Tehran, Shubita (2005) in industrial companies listed on Amman Stock Exchange, Dawar (2014) in India and Zeitun and Tian (2007), Krishnan and Moyer (1997), Gleason and Mathur (2000), Yazdanfar and Ohman (2014) done in different parts of the world have found a negative relationship between these two variables.

Even though this study revealed capital structure has a significant negative impact on firms' performance, this study only taken into account five years data of listed companies. Further, few measures of financial performance and annual reports prepared based on individual firm's accounting policies have been utilized in this study. Due to that limitation, obtained data cannot consistent among the firms.

However, the study has made an important implication regarding capital structure to stakeholders of the firms. Specially managers should consider the effect of leverage on firm's performance before changing the capital structure and investors should consider the debt level before making investment decisions.

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## **Appendices**

### **Appendix 1: List of Companies**

#### **Companies selected as the sample**

- Aitken Spence Hotel Holdings PLC
- Amaya Leisure PLC
- Anilana Hotels and Properties PLC
- Asian Hotels & Properties PLC
- Beruwala Resorts PLC
- Browns Beach Hotels PLC
- Ceylon Hotels Corporation PLC
- Citrus Leisure PLC
- Dolphin Hotels PLC
- Eden Hotel Lanka PLC
- Hikkaduwa Beach Resort PLC
- Hotel Sigiriya PLC
- Hunas Falls Hotels PLC
- John Keells Hotels PLC
- Kalpitiya Beach Resort PLC
- Mahaweli Reach Hotels PLC
- Marawila Resorts PLC
- Palm Garden Hotels PLC
- Pegasus Hotels of Ceylon PLC
- Ramboda Falls PLC
- Renuka City Hotel PLC
- Royal Palms Beach Hotels PLC
- Serendib Hotels PLC
- Sigiriya Village Hotels PLC
- Tal Lanka Hotels PLC
- Tangerine Beach Hotels PLC
- The Fortress Resorts PLC
- The Kandy Hotels Company PLC
- The Kingsbury PLC
- The Lighthouse Hotel PLC
- The Nuwara Eliya Hotels Company PLC
- Trans Asia Hotels PLC
- Waskaduwa Beach Resort PLC

#### **Companies quoted during the sample period**

- Renuka Hotels PLC
- Bansei Royal Resorts Hikkaduwa PLC
- Jetwing Symphony PLC

#### **Company, which not published five years annual reports**

- Miramar Beach Hotel PLC

#### **Company, which have a different financial year**

- Galadari Hotels (Lanka) PLC
- Hotel Developers (Lanka) PLC