THE IMPACT OF CAPITAL STRUCTURE ON FIRM PERFORMANCE: EVIDENCE FROM SRI LANKA.

Chandrasiri, R.P.I.S
Dilhara, P.K.T
Gunawardena, D.K
Kulathilaka, K.S.B
Lishantha, M.T.S
Liyanage, R.S
Madusanka, H.A.S
Perera, K.A.C.M
Thilanka, K.J.M.I
Wijesekara, M.H.D.C

ABSTRACT

The purpose of this research is to examine and investigate empirically the impact of capital structure on the firm performance. This study examines the impact on capital structure on firm performance of various business sectors in Sri Lanka for the period of 2009 to 2016. In determining the impact on firm performance this study has examined the relative significance of capital structure on firm performance.

Statistical methods such as descriptive analysis, correlation matrix analysis, and regression analysis have been used to analyze financial data of the preceding six years which are publically available. 48 public limited companies were selected from 18 different sectors excluding bank, insurance and investment fund sectors. Return on assets (ROA), return on equity (ROE) and Tobin's Q ratio have been selected as firm performance indicators whereas long term debt to total assets ratio & debt to equity ratio have been designated to measure the capital structure while keeping size, tangibility, age, growth as control variables.

The current study addresses the various theoretical stances developed by numerous scholars over last five decades time and accordingly research findings are interpreted around such theories. It was found that an increase in non-current debts and total debts has a negative influence on the corporate performance. Thus research outcome is not in-line with the results of the agency cost and trade off theories but it is consistant with the pecking order theory.

Keywords – Capital structure, firm performance, ROA, ROE, Tobin's Q, debt ratio.

1. INTRODUCTION

A financing manager is concerned with the determination of the best financing mix and combination of debts and equity for his firm. Capital structure decision is the mix of debt and equity that a company uses to finance its business (Damodaran, 2001). Ever since the publication of research paper of Modigliani and Miller (1958), one of the most important issue in corporate finance is the association of capital structure with firm performance. After the Modigliani-Miller (1958 & 1963) paradigms on firms' capital structure and their market values, there have been considerable debates, both in theoretical and empirical researches on the nature of relationship that exists between a firm's choice of capital structure and its market value. Although various alternative capital structure theories such as agency cost, pecking order, trade off theories have been developed during the last five decades, in order to explain the optimal capital structure and its impact on firm performance they differ in their relative emphasis, thus there is no universally accepted theory throughout the literature.

The financing or capital structure decision is significant managerial decision, as it influences the shareholder return and risk. The market of the share also be affected by the capital structure decision. Therefore the results of this study will enrich the literature on capital structure and agency cost issue in several ways. Understanding the relationship between the company debt values could provide useful insights for both investors and managers.

The purpose of this study is to examine how capital structure affects the financial performance of companies listed in Colombo Stock Exchange. Since the empirical evidence are diverse and contradictory in respect of the value creation of debt to the firm, this study will address the question independently within Sri Lankan context. Research has employed return on assets, return on equity and Tobin's Q ratio as measures of financial performance and long term debt to total assets ratio, debt to equity ratio as measures of capital structure. In order to determine the relative significance of capital structure variables on firm performance research has used control variables such as size, tangibility, growth, liquidity, age.

The study is based on the 48 listed companies listed in Colombo Stock Exchange from 18 business sectors excluding banks, insurance companies and investment trusts which will be selected using stratified sampling method. Publicly available financial information for last six years (2009-2016) has been used as the main data source on which the statistical analysis was performed.

For the purpose of testing hypothesis, research team has applied data analysis strategies such as descriptive statistical analysis, correlation matrix analysis, and regression analysis.

2. PROBLEM STATEMENT & RESEARCH QUESTION

Overview

According to the literature review, we have identified different perspectives of the researchers on capital structure and firm performance. Most of the researchers have developed theories to explain the relationship between capital structure and firm performance. Some researchers have argued that there is a positive relationship between capital structure and firm performance. A number of researches have been carried out to determine the positive relationship between capital structure and firm performance. Taub (2015), Nikolitas (1999) and Berger (2002) are some of the researchers who elaborated that there is a positive relationship between capital structure and firm performance.

Apart from that, some other researchers have established that there is a negative relationship between these variables. Kester (1986), Rajan (1995), Puwanenthiren (2011) and Dawar (2014) have provided evidence through their researches that there is a negative relationship between capital structure and firm performance.

Research Question

Therefore the argument that emerged was that capital structure impacts differently on firm performance in different contexts. Accordingly, research questions are as follows; Is there any relationship between firm performance and capital structure in the companies listed in Colombo Stock Exchange? To what extent does the capital structure affects the firm performance?

Variables

Firm performance

Although existing literature (Varun Dawar (2014), Berger and Bonaccorsi (2016), Rakesh H M (2013), Mihaela Brindu (2012)) provides many bases to evaluate the firm performance. ***We have narrowed down the scope of the research by taking only return on assets, return on equity and Tobin's Q ratio*** (ratio of the firm market value to the book value of total assets) as key measures of the firm's performance. Martis (2014), Sadeghian & Latifi (2012) describe return on assets and Tobin' Q ratio as yardsticks to measure the firm performance whereas Hasan & Ahsan (2014) choose ROE also as a variable to measure the firm performance.

Capital Structure

As per the definition given by Rajan and Zingales (1995) the leverage can be measured through interest bearing debt to asset ratio. Leon (2013) used long term debt to equity ratio to measure the capital structure and Dawar (2014) and Berger (2002) picked Short term debt total assets & Long term debt to total assets

ratios as the measures of capital structure. ***To assess the impact of leverage on firm performance, this research used the long term debt to total assets ratio (LTDA) and debt to equity ratio (DTE).***

Control Variables

Dawar (2014) has performed a panel regression to identify the impact of some other factors other than debt level of the firm on the firm's performance. He developed a model including the variables such as ***size, age, tangibility, growth and liquidity.*** Since this research is also intended to explore the impact of these variables on firm performance in Sri Lankan context it is expected to use the position of debt level in comparing with other variables. In doing so we will be able to measure the relative significance of capital structure as a determinant of firm performance.

Research Hypothesis

Based on the above research question, following hypothesis have been established to seek evidences to address the research question.

Iaorskya (2013), Abeywardhana (2015) has used ROA ratio to evaluate the firm performance.

Using ROA as a measure of firm's performance, the null hypothesis are as follows;

$H_0$1 - There is a negative significant relationship between firm's long term debt to total assets ratio and its return on assets

$H_0$2 - There is a negative significant relationship between firm's debt to equity ratio and its return on assets

Using ROE as a measure of firm's performance, the null hypothesis are as follows;

$H_0$3 - There is a negative significant relationship between firm's long term debt to total assets ratio and its return on equity

$H_0$4 - There is a negative significant relationship between firm's debt to equity ratio and its return on equity.

Zhou (2001) has used Tobin's Q to evaluate the firm performance.

Using Tobin's Q ratio as a measure of firm's performance, the null hypothesis are as follows;

$H_0$5 - There is a negative significant relationship between firm's long term debt to total assets ratio and its Tobin's Q ratio.

$H_0$6 - There is a negative significant relationship between firm's debt to equity ratio and its Tobin's Q ratio.

3. RESEARCH OBJECTIVES

Overall Objective

The main objective of this research is to investigate the impact of capital structure on the performance of listed companies in Sri Lanka, the data collection and analysis are more focused towards the impact of capital structure on financial performance, rather than the non-financial performance of the company.

Specific Aims

In addition to the main objective, it can also be established a set of secondary objectives which will also be associated with this research as follows;

1) Critically examine the determinants of capital structure of the firms listed under Colombo stock exchange and their relative significance towards the performance.
2) Identify the relationship between debt capital and equity capital along with its potential drawbacks and advantages.
3) Examine the theoretical bases developed by various scholars on capital structure and firm's performance based on the research findings.

4. SIGNIFICANCE OF THE STUDY

Optimal level of capital structure is an important strategic financing decision that firm's top management have to make. Therefore we believe that results of this study will provide some useful insights about capital structure of firms in Sri Lanka.

With the lights of various theories developed overtime, users of this research would be able to understand how capital structure theories such as MM theory, Agency cost theory, Pecking order theory, Trade off theory can apply in the real business context and significance of each and every theory in the Sri Lankan context. In other words this research will enable users to interpret the present business context using one or more of capital structure theories which will ultimately result to enhance the quality of the managerial decisions.

5. LITERATURE REVIEW

Existing literature looks on the issue of relationship between firm performance and composition of capital structure in various perspectives. Hence Literature provides a more controversies platform, this topic is highly debatable. In this chapter it is aimed to identify the terms of capital structure and firm's performance and present the various theoretical stances built by scholars overtime.

Capital Structure

Alfred (2007) provided a very simple definition for the term capital structure. He stated that capital structure of the firm is the composition of debt capital and equity capital. But according to Inanga and Ajayi (1999), capital structure can also be classified into three parts including equity capital, preference capital and long term debt capital, specifying the importance of preference shares in the capital structure. Some companies are more willing to fund their assets using debts whereas some firms are preferred to go with the equity capital. So it implies both debt and equity capital has their inherent drawbacks and advantages. Further Pandey (1999), distinguished the terms of capital structure and financial structure. According to Pandey (1999), financial structure is a much broader concept than capital structure. It identifies the various sources used to raise funds to a firm including short term debts and other short term liabilities whereas capital structure only discusses the relationship between long term debt and equity.

One of the main concern existing in the corporate finance field is how to determine the optimal mix of debt and equity. Hence determining whether the companies are having optimal mix of capital structure is one of the complex area in the field. Rahim & Utani (2012) mentioned that in determining the optimal target structure, firms must consider the factors such as flexibility, business risk, management preferences and cost of capital. It is possible to find theories which provides the theoretical basis for the purpose of determining the optimal capital structure. In other words modern financial techniques and methods would allow top managers to determine the optimal trade-off between debt and equity. However most of researches have noted that many firms do not have optimal capital structure since they do not have incentives or motivation to maximize firm's performance.

Capital structure can be evaluated in many different ways. Dawar (2014) has used short term debt to total assets and long term debt to total assets ratios to evaluate the capital structure among 78 Indian companies which represents 80% of the market capitalization. Further, Leon (2013) has also used the long term debt to equity ratio to measure the composition of capital structure.

Abeywardhane (2015) has investigated the impact of capital structure variables such as total debt to total assets ratio, long term debt to total assets ratio and gearing ratio on firm performance SME's in manufacturing sector in UK from 1998-2000. Further Leon (2013) used only the long term debt to equity ratio to measure the financial leverage of 36 manufacturing companies listed in Colombo stock exchange

perform a panel data analysis. Aburub (2012), in his research investigated the impact of capital structure on the firm performance of companies listed in Palestine Stock Exchange during 2006 to 2010 in which 28 companies were selected as the sample. In this study four measures of short term debt to total assets ratio, long term debt to total assets ratio, total debt to total assets ratio and total debt to total equity ratio were selected as the independent variables of capital structure. And the study by Saedi and Mahamoodi (2011) examines the relationship between capital structure and firm performance by using a sample of 320 firms listed on Teheran stock exchange over the period 2002-2009. Long term debt to short term debt and total debt to total equity ratios has been employed as the capital structure measure in that research. Hence we can observe that various scholars used difference measure of capital structure in their own researches.

Firm performance

Most of the scholars focus on the financial perspective of the firm performance when they are drawing relationships between a particular variable with the performance. But some researchers were keen to measure the financial and non-financial performance of the firm by developing many variables and measures. Dawar (2014) used Return on assets (ROA) and return on equity (ROE) to measure the impact on capital structure for the performance of the firm. Mihale (2012) has used broader range of indicators and measures to evaluate the firm performance. He used net profit, EPS, operating profit (NOPLAT), ROA, ROE, Economic value added and NPV as the major indicators of firm's performance.

Onaolapo and Kajola (2010) investigated the effect of capital structure on financial performance of companies listed on Nigeria Stock Exchange. This study was performed on 30 nonfinancial companies in 15 industry sectors in a 7 year period from 2001 to 2007. Research used ROA and ROE, two basic accounting ratio to measure the financial performance of the firm.

The choice of alternatives of ascertaining performance may be influenced by the firm's objectives. Mihale (2012) claims that the most widely used instruments to measure performance are return on assets (ROA) and return on equity (ROE).

The ascertainment of firm performance using financial indicators should not be isolated. Performance should be measured in terms of non- financial indicators such as the expertise of top management, corporate culture, effectiveness of company policies, effectiveness of internal control systems, and quality of the human resources. Mihaela (2012) stated that the assessment of firm performance using financial indicators must be complemented by an assessment based on non-financial indicators.

Theoretical studies

- **Modigliani- Miller Theory**

Association between the theory of capital structure and firm performance has been an important issue in the corporate finance field since the publication of the works about the role of debt by Modigliani and Miller (1958). They have suggested that the composition of capital structure is an irrelevant factor in the company's market valuation. In other words they have hypothesized that if markets are perfectly competitive, firm performance will not be related to capital structure. (Value of the firm is similarly unaffected by its financial structure.)

This theory later became known as the "Theory of irrelevance". This was the first time a researcher talked about the relationship between the capital structure and the firm performance resulting a better platform for the intended researchers to carry out their further analytical work.

At that time there were many criticisms made against the Modigliani-Miller theory, which encouraged them to issue an alteration to their initial theory developed in 1958. Subsequently, both Modigliani and Miller have acknowledged that value of the business or the firm should go up with the higher amount of debt capital due to tax shield created by the interest payments. They highlighted that payment for equity holders cannot be deducted for the taxation and payment of debt (interest payment) can be debuted for the tax. Therefore it will create a tax shield to the firm when they are deciding to raise funds using debt capital. M&M indicated that companies can maximize their value by employing more debt due to tax shield.

M&M showed that firm value and the firm performance is an increasing function of leverage due to tax deductibility of interest at the corporate level (Modigiliani & Miller,1963)

Although various capital structure theories have been developed during last 5 decades, they are quite different with each other in respect of the findings. Some researches have argued that there is negative relationship between the level of debt and firm value and some researches are in an opinion totally opposite to that. Therefore, it is important to look briefly into few theories developed over time by various scholars.

- **Agency Cost Theory**

This theory was initially introduced by Jenson and Meckling (1976) and Meyers (1977) in order to explain the relationship between capital structure and the firm value through agency cost. Agency costs are the possible cost associated with conflict of interests between shareholders and managers or shareholders and bondholders within the organization. As per Addae, Baasi and Hughes (2013), according to the agency problem, whist managers seek their own best interest, shareholders will be expecting them to work towards maximising the value of their investment. Hence we find that these opposing interests can eventually lead to a situations that predicts the optimal capital structure.

Jenson and Meckling (1976) justified that, in order to minimize the agency costs either the ownership of managers should be increased or use of debt capital should be promoted. Therefore Jensen (1986) suggested that firms should finance its assets mostly from debt capital in order to reduce the decision power of managers which in turn makes them to act in the best interests of the shareholders. Accordingly both shareholders and debt holders will act as the principals of the firm, making more transparency in its corporate governance structure.

- **Pecking Order Theory**

Pecking order theory assumes a negative correlation (relationship) between firm value and the debt level in the capital structure. The conclusions of the "Pecking order theory" is totally contradictory to the findings of agency theory and trade off theory. By developing Pecking order theory, Myers and Majluf (1984) argued that there is a hierarchy in the firm's preference for financing its assets. Since issuing new shares would make an adverse impact on its existing shareholders, managers will prefer finance its assets using internal sources such as retained earnings. This theory prescribes that only if the funds are not sufficient managers will tend to go with the external sources. The managers will first choose debt financing and as the last option they decide to issue new shares. Thus according to pecking order theory, firms which are very profitable will use less debts. Consequently this theory assumes that more debt level will indicate lower performance of the firm.

- **Trade off theory**

Trade off theory explains the optimal level of capital structure in terms of benefits derived from tax savings and other costs associated with debt capital such as bankruptcy cost. It also assumes a positive relationship between firm performance and level of debt in the capital structure. Modiglliani and Millers subsequently suggested that firms should use higher debt level to fund its assets due to its tax shield impact. But trade off theory take the cost of debt (Bankruptcy costs, personal tax, agency costs) in to consideration and they have suggested that benefits from the tax shield will be traded off with the costs associate with debts. Hence this theory emphasizes that firms should not maintain a optimal mix of debt and equity.

Accordingly table 01 provides the summary of capital structure theories discussed above;

Theory	**Relationship between firm performance and financial leverage**
Modigliani and Miller (1963)	Positive
Trade off Theory	Positive
Pecking- Order Theory	Negative
Agency cost Theory	Positive

Table 1

Results of empirical studies

Most of researchers have developed theories in order to explain the relationship between capital structure and the firm performance. Many researchers consider firm performance as the dependent variable and capital structure and other relevant factors as independent variables. While there is a vast amount of literature examining the choice of capital structure decisions on firm performance, research results and findings are mixed and contradictory with regards to whether debts add positive or negative impact on firm performance.

A number of empirical studies provide evidence to support the positive relationship between debt level and firm's performance.

For example Taub (2015) examines the factors influencing the firm's choice of debt equity ratio for set of USA companies and found that there is statistically significant positive correlation between debts and profitability. Nikolitas (1999) has also observed a significant positive relationship between indebtedness and total firm performance.

Berger (2002) has selected a sample of 695 companies which are in the US banking industry and further obtained past 6 years data in order to perform a panel regression. Based on the statistical evidence it was suggested that there is a statistically significant positive relationship between debt level and firms performance.

Margaritis and Psillaki (2010) observed a significant positive relation between leverage and firm's performance. They used a sample of both low and high growth French firms for the period 2003-2005 and found that leverage have positive effect on firms' efficiency over the entire sample.

Using panel data consisting of 257 South African firms over the period 1998 to 2009, Samuel (2013) investigated the association between capital structure and firm performance. To test the relationship, he used

GMM regression approach and found a positive and significant relation between financial leverage and firm's performance. Aliakbar, Seyed and Pejman (2013) also found a significant positive link between capital structure and firm performance in the Tehran Stock Exchange.

Further some researchers have provided empirical evidence supporting the negative relationship between firm performance and level of debt. Research work carried out by Dawar (2014) was focused on the impact of level of debt (financial leverage) on the performance (profitability) of Indian listed companies over past 10 years. Author was expecting to come up with a relationship between the capital structure and firm's performance. As per the agency theory, it was already known that higher the debt capital will reduce the agency cost which in turn enhance the financial performance. Author has selected a sample of 78 companies which are listed in Bombay Stock Exchange excluding the banking sector. And further he has obtained past

10 years data in order to perform a panel regression. In order to measure financial performance he used ROA and ROE whereas debt level is measured shot term debt to total assets and long term debt to total assets ratio. Based on the statistical evidence, it was argued that there is a statistical significant negative relationship between capital structure (debt level) and firm's performance in the Indian context. Consequently agency theory has to be seen with different perspective in India given the underdeveloped nature of bond markets and dominance of state owned banks in lending to corporate sector.

Kester (1986) also reported a negative relation between leverage and profitability in case of USA and Japan. Rajan (1995), report such results G-7 countries (USA, Germen, Japan, France, Italy, UK and Canada)

In Sri Lanka, Puwanenthiren (2011) carried out a research on the firm performance and capital structure of selected companies listed in Colombo Stock Exchange during the period of 2005-2009. The findings showed that the relationship between firm value and capital structure is negative.

In Jordan Zeitun and Tian (2007) conducted a study on capital structure and corporate performance on 167 Jordanian firms between 1989 -2003. They found a significantly negative relationship capital structure and corporate performance. Many variables such as ROA, ROE, profitability, Tobin's Q were used to measure the performance while leverage, growth, size, and tangibility were proxies for capital structure. Similar results was obtained by Salim and Yadav (2012) in their research which studied the relationship between capital structure and firm performance using 237 Malaysian companies during 1995- 2011. Their a analysis also revealed that firm performance measured by ROA,ROE, and EPS have negative relationship with the capital structure while Tobin's Q has significantly positive relationship with short term debts and long term debts.

Rakesh (2013) also have done an analysis on capital structure and its impact on financial performance capacity during 2009 to 2012. The results discovered that the relationship between the capital structure and financial performance is having a negative association.

Nor and Fatihah (2012) tried to explore the impact of debt and equity financing on the performance of the firms listed in Bursa Malaysia. Using a sample of 130 firms for the period 2001-2010 combined with multiple regression analysis, they cited a statistical significant negative relation between capital structure and firms' performance.

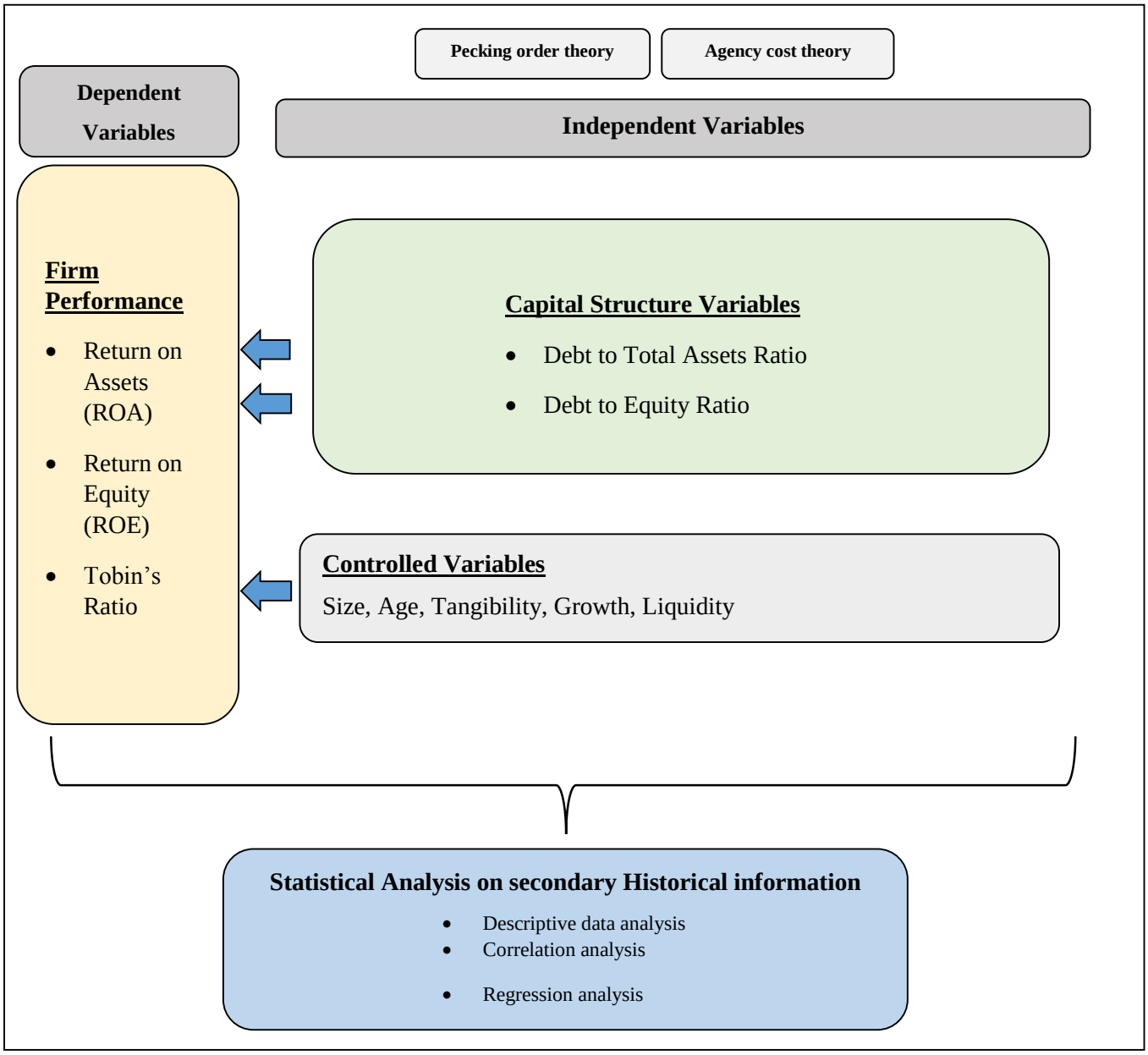
Interestingly some researches also witnessed no relationship between frim performance variables and capital structure variables. For instance Phillips and Sipahioglu (2004) documented non-significant link between capital structure and firm's performance for publicly traded UK lodging firms; lodging firms seem to prefer external sources as capital return is at a low level.

Understanding the relationship between the company debt and value could provide useful information for existing and potential investors and this may allow them to allocate their funds more effectively.

Some researchers have designed their research so as to identify the other relevant factors that influence the firm performance and to evaluate the statistical significance of debt level in compared to other factors. For instance Chandrasekharam (2012) conducted a study using 87 firms out of the population of 216 listed companies in Nigeria stock exchange. He employed a panel regression model to identify the statistical relationship of key determinants. And the study reveals that growth, firm size and age are statistical significant determinants along with the debt level of the firm.

6. THEORETICAL FRAMEWORK

Conceptual Diagram



7. METHODOLOGY

This section describes the research design, basis for the sample selection, procedure for data collection, methods of data analysis, variables used to measure the firm performance and capital structure.

Population and Study Sample

The study is based on the list of companies registered in Colombo Stock Exchange representing 18 sectors. Similar to Abor (2005), Addae & Baasi (2013) and Dawar (2014) we have excluded Banking, Finance, and Insurance & Investment Trusts sector. According to Colombo stock exchange information, there are 294 companies registered as listed companies as at 31st March 2016 out of which 63 companies are coming under Banking, Finance, Insurance and Investment trusts sectors. As a result, our population includes all together 231 companies from 18 different sectors.

The reason for exclusion of Banking, Insurance, Finance companies and Investment Trusts is that financial characteristics and capital structure of such companies are quite different from other companies. It was accepted that banks and insurance companies have more liquid assets than other companies. If the above industries also include in the sample, it will result a distortion in the research outcomes which in turn makes a misrepresentation on validity and reliability of the information to be presented.

Furthermore, this study will exclude the companies which have been incorporated after 2009 because it is unable to obtain the historical financial information for such companies for last seven years.

Although lots of researchers tend to focus their studies only on one or few industrial sectors, some researchers like Hasan and Ahasan (2014), Dawar (2014), Nor and Fatihah (2012) broadened their research scope into almost all the sectors of the stock markets. Dawar (2014) claimed that making the sample which represents all the business sectors will enrich the quality and the external validity of the research outcomes. Furthermore all three scholars cited above also have ignored the banking and financing sector from their samples.

Sample Size and Selection of Sample

Out of 231 companies of the population, to select the study sample, we have employed stratified sampling method, making the sample more representative of each sector. In this research it has been decided to pick 20% of companies from each sector to construct our stratified sample. Thereafter it was selected the companies with the highest market capitalization as at 31st March 2016 in each sector. So the starting point is to split the sample into 18 sections based on the business sectors in which companies are operating. As a result of that, it was decided to limit the sample into 48 companies representing almost all the major sectors of Sri Lankan economy except banks and finance sector. Table 02 provides the distribution of sample size by industry (Sector).

Sector	Population Size	Selected sample of companies
Beverage Food and Tobacco	22	4
Chemicals and Pharmaceuticals	12	2
Construction and Engineering	4	1
Diversified Holding	21	4
Footwear and Textiles	6	1
Health Care	7	1
Hotels and Travelling	40	8
Information Technology	2	0
Land Property	19	4
Manufacturing	40	8
Motors	6	1
Oil Palms	5	1
Plantations	19	4
Power Energy	8	2
Services	8	2
Stores Supplies	4	1
Telecommunications	2	2
Trading	9	2

Table 2

Furthermore no companies will be selected from the information technology sector and both companies in the Telecommunication industry will be taken to construct our sample since both Dialog Axiata PLC and Sri Lanka telecom PLC are well established firms, representing a higher portion of market capitalization among listed companies in Sri Lanka. And from each sector we have selected the firms with the highest market capitalization.

Collection of Data

This section of the research paper describes the various methods that are expected to be used for the collection of data. Data can be collected from either primary or secondary data sources. Though most of the researchers like Taub (2015), Rajan (1995), Dawar (2014), Addae & Baasi (2013) carried out quantitative researches in this field of knowledge.

Some researchers like Sephr & Latif (2012) used qualitative research instruments to collect data. They have used unstructured questionnaire and participative observation to draw conclusion in the research area.

Those first-hand information collected by the researcher himself will be very useful to identify the insights of the capital structure and firm performance.

Secondary data analysis is also a good option for collecting data when performing a research on capital structure. Secondary data means data that are collected for a different purpose other than the research but this data can be used for other research also. When applying secondary data, it is essential to be confirmed that these data sources are reliable and credible for the research. For this research, secondary data sources such as Annual reports and other publications available in the Colombo stock exchange are used as a source of data. Accordingly we have collected the historical financial information from 2009 to 2016 for our selected sample of companies.

8. DATA ANALYSIS AND PRESENTATION

Descriptive analysis

As the first step of data analysis we have developed a table to present the basic statistical measures such as mean, median, standard deviation, minimum value, maximum value and etc. Descriptive statistics will provide an overall picture of our research field. Table 03 demonstrates the basic framework for the descriptive analysis table. And please note this as the initial step of converting the data.

	Minimum	**Maximum**	**Mean**	**Std. Deviation**
Return on Assets	-42%	71%	9%	12%
Return on Equity	-81%	104%	12%	18%
Tobin's Q	0.00	12.90	2.03	1.86
LTDA	0%	76%	10%	12%
DTE	0%	408%	45%	60%
Growth	-100%	994%	18%	77%
Age	0.00	150.00	31.62	24.03
Tangibility	0%	100%	28%	26%
Liquidity	0.10	189.50	5.15	16.65
Size	7.30	11.20	9.68	0.73

Table 3

The descriptive statistics presented in the table above covers all the sampled company from 2009 to 2016. From table 01, return on investment (ROA) ranges from -42% to 71% with a mean of 9% and a standard deviation of 12%, Return on Equity (ROE) has a minimum value of -81% and a maximum of 104%, with an average value of 12% and a standard deviation of 18%, Total long term debt to total assets (TDTA) ranges from 0.00 to 76% with a mean value of 10% and a standard deviation of 12%. Total debt to equity

ratio (TDE) ranges from 0.0 to 9.59 with an average value of 0.28 and a standard deviation of 0.75. Firm's growth (Growth) rages from -100% to 994% with an average value of 18% and a standard deviation of 77%.

The most important measure that shows the balance point and is the exertion center of distribution is arithmetic mean (Azar et al, 2006). Mean value of long term debt to total assets (LTDA) has recorded a significant lower amount (10%) in comparing with the similar researches conducted by various scholars. This implies most of the companies in Sri Lanaka are not relying too much on long term debt when financing their assets. Furthermore, net book value of assets is well below than its market capitalization. Accordingly average market capitalization of Sri Lankan companies are higher than 2.03 times of their book values. Although most of the variables recorded a less dispersion, debt to equity and growth variables accounts higher diffusion. (60% and 77% respectively).

The mean of Tobin's Q is 2.03, which reveals that the market values of the firms listed on the Colombo Stock Exchange are greater than their book values. Since their price to book ratio is greater than 1, the market expect these firms to grow in the future as the market price also takes any future earnings into consideration at the current price.

Correlation Analysis

The correlation and covariance between selected variables will also be formulated in order to get a better understanding of the sample. Correlation matrix summarizes the relationships among variables and also this serves two important purposes. First is to determine whether there is any bivariate relationship between each pair of dependent and independent variables. Second is to ensure whether there is any statistically significant relationship exist between two variables. Hence correlation matrix will demonstrate the direction of the relationship and the significant of relationship between variables.

The table 04 below summarizes the results of correlation analysis among the variables which are employed for the study

	Return on Assets	Return on Equity	Tobin's Q	LTDTA	Debt to Equity	Revenue Growth	Age	TANG	Quick Asset Ratio	Firm Size
Return on Assets	1									
Return on Equity	.920**	1								
Tobin's Q	.230**	.212**	1							
LTDTA	-0.103	-0.062	0.023	1						
Debt to Equity	-.117*	-0.091	.150**	.667**	1					
Revenue Growth	0.061	0.064	-0.033	.151**	0.053	1				
Age	-0.056	-0.103	0.06	-0.008	0.022	-0.01	1			
Tangibility	-0.107	-0.081	-.166**	.236**	0.063	0.077	0.068	1		
Quick Asset Ratio	-0.011	-0.061	-0.068	-.150**	-.169**	-0.029	-0.049	-.122*	1	
Firm Size	.287**	.293**	-.116*	.214**	0.102	-0.013	-0.088	.157**	-0.017	1

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 4

Accordingly DTE ratio is significantly negatively correlated with ROA and Tobin' Q. and almost all the capital structure variables are negatively correlated with the firm performance variables.

In this research, descriptive statistics methods are used to summarize and classify the gathered data and inferential statistics methods are applied to analyze them. Table 1 shows the descriptive statistics results of variables.

Regression analysis

Regression analysis is a mathematical method to measure the impact of one (independent) variable on other variable (dependent). To capture the relationship between firm performance and capital structure, following regression equations are formulated to perform a panel regression on pooled data obtained from the annual reports.

$$ROA = \beta 0 + \beta 1LTDA + \beta 2DTE + \beta 3SIZE + \beta 4AGE + \beta 5TANG + \beta 6GRW + \beta 7LIQ$$

$$ROE = \beta 0 + \beta 1LTDA + \beta 2DTE + \beta 3SIZE + \beta 4AGE + \beta 5TANG + \beta 6GRW + \beta 7LIQ$$

$$Tobins = \beta 0 + \beta 1LTDA + \beta 2DTE + \beta 3SIZE + \beta 4AGE + \beta 5TANG + \beta 6GRW + \beta 7LIQ.$$

Where,

LTDA - Long term debt to assets ratio

DTE - Total debt to equity ratio

SIZE - Size of the company. Total value of the assets used to measure the size (Log value of assets)

AGE - Age of the firm has been measured in terms of years since its incorporation.

TANG - Tangibility of the firm. This has been measured as a ratio of total fixed assets and total assets

GRW - This is the sales growth from previous year to this year.

LIQ - Liquidity of the firm measure by current ratio

Results of hypothesis one and two have been illustrated in the table 05.

Variables	**Independent Variable : Return on Assets**			
	Hypothesis 1 Testing Results		**Hypothesis 2 Testing Results**	
	Co-efficient	**P- value**	**Co-efficient**	**P- value**
(Constant)	-39.618	0	-37.124	0
Long Term Debt to Total Assets	-0.161	0.004**	-	-
Debt to equity	-	-	-0.03	0.006**
Revenue Growth	0.015	0.068**	0.013	0.12
Age	-0.009	0.729	-0.007	0.796
Tangibility	-5.854	0.018**	-7.047	0.004***
Quick Asset Ratio	-0.031	0.419	-0.034	0.377
Firm Size	5.397	0.000***	5.147	0.000***

Table 5

*, **, *** indicates statistically significant at 10%, 5% and 1% respectively.

Considering the illustrated results in table 2, research hypotheses can be analyzed as the following: Hypothesis 1 is significant at 5% and has a negative relationship with return on assets. This means as total long term debt increases, the ROA will be decreased. In other words, 1 unit increase in a long term debt will result in 0.161 unit decrease in a ROA. Therefore, the model of the first hypothesis can be illustrated as the following:

$$ROA = -37.124 - 0.03TDRE + 0.013GRW - 0.007AGE - 7.047TANG - 0.034LIQ + 5.147SIZE$$

Hypothesis 2 is significant at 5% and has a negative relationship with return on assets. This means as total debt to equity ratio increases, the ROA will be decreased. In other words, 1 unit increase in a total debt to

equity ratio will result in 0.03 unit decrease in a ROA. Therefore, the model of the first hypothesis can be illustrated as the following:

$$ROA = -39.618 - 0.161LTDTA + 0.015GRW - 0{,}009AGE - 5.854TANG - 0.031LIQ + 5.397SIZE$$

Results of hypotheses 3 and 4 testing has been shown in table 6.

Variables	Independent Variable : Return on Equity			
	Hypothesis 3 Testing Results		Hypothesis 4 Testing Results	
	Co-efficient	P- value	Co-efficient	P- value
(Constant)	-61.224	0	-58.222	0
Long Term Debt to Total Assets	-0.201	0.019***	-	-
Debt to Equity	-	-	-0.04	0.015***
Revenue Growth	0.022	0.083***	0.019	0.126
Age	-0.052	0.195	-0.049	0.222
Tangibility	-7.861	0.04***	-9.333	0.013***
Quick Asset Ratio	-0.097	0.099***	-0.103	0.082***
Firm Size	8.125	0***	7.84	0***

Table 6

*, **, *** indicates statistically significant at 10%, 5% and 1% respectively.

Considering the illustrated results in table 4, research hypotheses can be analyzed as the following:

The third hypothesis is confirmed and has a significant negative relationship with return on equity. This means that as the long-term debt increases, the corporation's return on equity will be decreased. In other words, 1 unit increase in long-term debt to total assets will result in 0.201 unit decrease in return on equity. Therefore, the model of the third hypothesis can be illustrated as the following:

$$ROE = -61.224 - 0.201LTDTA + 0.022GRW - 0{,}052AGE - 7.861TANG - 0.097LIQ + 8.125SIZE$$

The forth hypothesis is significant and has a negative relationship with return on equity. This means that as the total debt increases, the corporation's return on equity will be decreased. In other words, 1 unit increase in debt to equity will result in 0.04 unit decrease in return on equity. Therefore, the model of the forth hypothesis can be illustrated as the following:

$$ROE = -58.222 - 0.04DTE + 0.019GRW - 0{,}049AGE - 9.333TANG - 0.103LIQ + 7.84SIZE$$

Results of hypothesis five and six testing has been shown in table 07

Variables	Independent Variable : Tobin's Q Ratio			
	Hypothesis 5 Testing Results		Hypothesis 6 Testing Results	
	Co-efficient	P- value	Co-efficient	P- value
(Constant)	4.676	0.001	4.568	0.001
Long Term Debt to Total Assets	0.013	0.172	-	-
Debt to Equity	0	0	-0.005	0.005***
Revenue Growth	-0.001	0.54	-0.001	0.572
Age	0.005	0.289	0.004	0.319
Tangibility	-1.271	0.002***	-1.191	0.003***
Quick Asset Ratio	-0.009	0.174	-0.007	0.28
Firm Size	-0.258	0.08***	-0.26	0.071***

Table 7

*, **, *** indicates statistically significant at 10%, 5% and 1% respectively.

Considering the illustrated results in table 4, research hypotheses can be analyzed as the following:

Although the results from the regression model in respect of the fifth hypothesis does not reflect a significant relationship between firm performance variable (Tobin's Q) and capital structure variable (Total long term debt to total assets, still model demonstrates a positive relationship between capital structure and firm performance. As fifth hypothesis is not significant, a model cannot be presented for it.

The sixth hypothesis is significant and has a negative relationship with Tobin's Q. This means that as the total long term debt to total assets ratio increases, the corporation's return on assets will be decreased. In other words, 1 unit increase in long term debt to total assets ratio will result in 0.005 unit decrease in Tobin's Q. Therefore, the model of the sixth hypothesis can be illustrated as the following:

$$TOB\ Q = 4.568 - 0.005DTE - 0.001GRW + 0.004AGE - 1.191TANG - 0.007LIQ + 0.26SIZE$$

9. DISCUSSION AND CONCLUSION

The summary of hypotheses testing results is shown in the following table.

Number	Hypothesis	Results	Coefficient of the capital structure variable	R Square
1	There is a negative significant relationship between firm's long term debt to total assets ratio and its return on assets	Confirmed	-0.161	14%
2	There is a negative significant relationship between firm's debt to equity ratio and its return on assets	Confirmed	-0.03	14%
3	There is a negative significant relationship between firm's long term debt to total assets ratio and its return on equity	Confirmed	-0.201	13%
4	There is a negative significant relationship between firm's debt to equity ratio and its return on equity	Confirmed	-0.04	14%
5	There is a negative significant relationship between firm's long term debt to total assets ratio and its Tobin's Q ratio	**Rejected**	-	0%
6	There is a negative significant relationship between firm's debt to equity ratio and its Tobin's Q ratio.	Confirmed	-0.005	7%

Table 8

In brief, the relationship between the capital's structure and the corporations' Performance shows that there is a negative relationship between loans' policies and corporations' performance. According to statistical results, the claims of this research have been confirmed in a 5% error level. Hence, it can be concluded that an increase in debts will result in a decrease in corporations' performance. But the present study does not recommend that the firms should necessary increase debt in order to increase the performance.

Accordingly the present research outcome is in line with the output of the "pecking order theory". Pecking order theory assumes a negative correlation (relationship) between firm value and the debt level in the capital structure. The conclusions of the "Pecking order theory" is totally contradictory to the findings of "agency theory" and "trade off theory". By developing Pecking order theory, Myers and Majluf (1984) argued that there is a hierarchy in the firm's preference for financing its assets.

The results of this study is consistent with studies of Abor (2007), Abu Alsayyed Abid (2009), and Zaitun & Tian (2007), Dawar (2014), Kester (1986), Rajan (1995), Puwanenthiren (2011) and Zeitun and Tian (2007). All of these studies express negative influence of debt on corporations' performance.

REFERENCES

1) Berger, A., Bonaccorsi, E., 2006, 'Capital structure and firm performance: a new approach to testing agency theory and an application to the banking industry', *Journal of Banking and Finance*, vol. 30, no. 4, pp. 1065-1102.
2) Coleman, A. 2007, 'The impact of capital structure on the performance of Microfinance institutions', *Journal of Risk Finance*, vol. 8 no. 1, pp. 56-71.
3) Dawar, V 2014, 'Agency theory, capital structure and firm performance some Indian evidence', *Managerial Finance*, vol. 40, no.12, pp. 1190 – 1206.
4) Eriotis, N, 2007, 'How firm characteristics affect capital structure: an empirical study', *Managerial Finance*, vol. 33, no. 5, 2007 pp. 321-331.
5) Grossman, S. Hart, O. 1982, 'Corporate financial structure and managerial incentive', *The Economics of Information and Uncertainty, University of ChicagoPress, Chicago*, vol IL, pp. 107-140.
6) Iavorskyi, M, 2013,' The impact of capital structure on firm performance : Evidence from Ukraine', *MA in financial Economics.*
   in Indonesia, *Maastricht School of Management*, vol 1, no 2, pp 2354-2382
7) Jensen, M. 1986, 'Agency costs of free cash flow, corporate finance and takeovers', *American Economic Review*, vol. 76 no. 2, pp. 323-339.
8) Jensen, M. Meckling, W. 1976), 'Theory of the firm, managerial behavior, agency costs and ownership structure', *Journal of Financial Economics*, vol. 3 no. 4, pp. 305-360.
9) Kester, W. (1986), 'Capital and ownership structure: a comparison of United States and Japanese Manufacturing corporations', *Financial Management*, vol. 15 no. 1, pp. 5-16.
10) Modigliani, F., Miller, M., 1958. 'The cost of capital, corporation finance, and the theory of investment'. *American Economic Review*, vol. 48, no. 3, pp 261–297.
11) Modigliani, F., Miller, M., 1963. 'Corporate income taxes and the cost of capital: a correction', *The American Economic Review*, pp 433-443.
12) Nirajini, A, Priya, K , 2013, ' Impact of capital structure on finacial performance of the listed trading companies in Sri Lanka', *International Journal of Scientific and Research Publications*, vol. 3, no 3, pp 2250-3153.

13) Puwanenthiren, P. 2011. 'Capital Structure and financial performance: evidence from listed business companies in Colombo Stock Exchange Sri Lanka'. *Journal of Arts, Science & Commerce.*
14) Rajan, R. and Zingales, L. 1995, 'What do we know about capital structure? Some evidence from international data', *Journal of Finance,* vol. 50 no. 5, pp. 1421-1460.
15) Rakesh, H M 2013, 'Capital Structure and Financial Performance: Analysis ofSelected Business Companies in Bombay Stock Exchange', *Journal of Economic and finance,* vol. 2, no.1, pp 59- 63
16) Taub, A. 1975, 'Determinants of firm's capital structure', *Review of Economics and Statistics*, vol. 57, no. 4, pp. 410-416.
17) Utami, SR., 2012, 'Determinants of Capital Structure of Firms in the Manufacturing Sector of Firms