Impact of Capital Structure on Profitability: A Comparative Analysis of Indian Service and Manufacturing Industries

Nishu Rani
Assistant Professor,
Deptt. of Commerce,
University College,
Miranpur, Patiala,
Punjab,India

Abstract

In this paper an effort has been made to ascertain the impact of capital structure on the profitability of BSE listed firms in Indian service and manufacturing industries. This study is focused on 183 companies from service and manufacturing sector. Companies have been selected on the basis of maximum capitalization. The reference period of the study is 10 years and is completely based on secondary data collected from Prowess database maintained by Centre for Monitoring Indian Economy (CMIE). In order to achieve the objectives, capital structure in terms of debt to equity and *profitability in terms of return on equity and return on assets have been taken* for the study. Two Panel data regression models i.e. Random Effects Model and Fixed Effects Model have been used to study the impact. The findings of the study have put forth that capital structure (debt-equity ratio) has negative and significant impact on profitability in terms of ROE and ROA in both Service and Manufacturing Industries.

Keywords: Profitability, Return on Equity, Return on Assets, Random Effects Model and Fixed Effects Model.

Introduction

Finance plays an important role in organizations and it involves a lot of decision making because finance can be obtained through so many sources. A wrong financing decision may lead to financial distress and eventual bankruptcy (Eriotis, *et al.*2007).Recently financing decisions have become a major marketing problem, as a large number of financing options are available in wake of liberalization and globalization of economic policies across the world. The decisions regarding combination of various sources of finance are known as capital structure decisions. So, financial managers are concerned to know whether their firms are over leveraged or under leveraged and are less concerned about the optimal level of debt (Ting and Lean, 2011). Capital structure decisions are vital for the firm, since the profitability of a firm is directly affected by such decisions. Miller & Modigliani, 1958 and Miller, 1977 theorized that each firm has an ultimate goal of the maximization of wealth or value of the firm. The irrelevance theory of MM (1958) where they argued that value of firm is not related to capital structure and it has been proved the remarkable milestone to know the relationship between capital structure and firm value. But, in the second proposition of relevance theory MM (1963) argued that there is positive relation of the market value and capital structure of the firm in the presence of corporate taxes. De Angelo and Masulis (1980) also proved the existence of capital structure. The present study has been conducted to assess the impact of capital structure on performance of service and manufacturing industry by using profitability as dependent variable.

The findings of two main theories of capital structure i.e. Trade-off theory and Pecking Order theory are not same regarding the impact of capital structure on profitability of a firm. Trade-off theory expects positive relationship of profitability and leverage and suggests that debt financing gives benefit to firm, when there are corporate taxes, as interest payments are deducted while calculating taxable income, whereas, Pecking Order theory expects negative relationship of profitability and leverage. It implies that managers always use internal funds as their first preference and then go for debt and lastly issue equity. Previous studies on capital structure found contradictory results regarding the impact of capital structure on

profitability. Bhatt (1980), Titman and Wessels (1988), Harris and Raviv (1991), Rajan and Zingales (1995), Fama and French (2002), Frank and Goyal (2003) and Ahmed, *et al.* (2011) found negative relationship between leverage and profitability, whereas positive relationship between leverage and profitability has been proved by Taub (1975), Bevan and Danbolt (2000) and Mojtahedzadeh (2009).

The present study tried to find the impact of capital structure on profitability of Indian service and manufacturing industry. Since the process of liberalization and globalization, Indian corporate sector has shown revolutionary changes. Services are now 'coming of age' in terms of the economic and technological landscape (Howell, 2000), whereas industrial revolution can hasten the pace of development for a nation. Economic Survey 2015-16 reports that the services sector contributed almost 66.1% of its Gross Value Added (GVA) in 2015-16 and becomes the important net foreign exchange earner. This sector is the most attractive sector for Foreign Direct Investment inflows. The manufacturing sector of India is an important component of economic progress. This sector is contributing 17.2% to the GVA as per the reports of Economic Survey 2015-16. As the asset structure of these two sectors is totally different in the sense that the service industries have less tangible assets than the manufacturing sector. So, it becomes important to know if the impact of capital structure is same or different on these two sectors. The rest of the paper is structured into four main sections. A brief overview of the past studies of this field has been provided in next section. Section three describes research methodology. Section 4 analyzes the results and last section provides summary and conclusion.

Review of Literature

Bhatt R.K. (1980) examined the impact of various determinants e.g. growth, firm size, profitability and business risk on leverage ratio through correlation and regression techniques. The sample size consists of 63 firms listed with Bombay Stock Exchange from engineering industry and period of the study was 1972 to 1978. The study found that growth, size and degree of operating leverage has insignificant relationship with financial leverage and debt service ratio, risk and dividend payout ratio have negative relationship with leverage.

Titman and Wessels (1988) studied the various determinants affecting the choice of corporate debt ratio. 469 UK firms for the period of 1974-1982 were taken as the sample of the study. The study revealed negative relation of capital structure and uniqueness of a firm. The results also revealed that transaction costs may be an important factor for choice of capital structure. The results also proved that no significant relation exists between non-debt tax shield, volatility, collateral value and growth and leverage.

Chen (2002) empirically investigated the impact of debt structure on the value of the firm under different growth opportunities by taking the sample data of 127 Netherland firms as on 2001. The results of the study revealed that reasons of insignificant positive relation of the debt ratio to firm value were not obvious due to the particular governance structure in the Netherlands. The results also indicate that the value of the firm can be increased without using the debts in the capital structure in Netherland.

Dailida and Novikov (2004) investigated that the factors affecting capital structure are same between developing, transition and developed countries. He made an attempt to know whether the predictions of conventional capital structure models improved by knowing the nationality of the company. The results of his study indicated that there is no difference of the significance of the variables between developing and developed countries. He also concluded that profitability and leverage are negatively correlated in both group of countries. These findings also support Pecking-Order Hypothesis. Overall results suggested that due to the high cost of external debt mostly firms avoid external financing in both type of countries.

Abor (2005) examined the impact of capital structure in terms of total debt to total assets on profitability in terms of return on equity (ROE). He took 22 firms listed with Ghana Stock Exchange for the period from 1998 to 2002. The results revealed significant positive relationship between capital structure and profitability. The result also indicates that highly profitable firms depend heavily upon debt in their capital structure.

Gatsi and Akoto (2007) studied the relationship between capital structure and profitability in 14 Ghanaian banks through Panel data methodology for the period of 1997-2006. The study revealed that banks are highly levered institutions that are more dependent on short term debts than long term debts. They further revealed that leverage in terms of short-term debt; long term debt and total debt are significantly negative associated with net interest margin. The study also presented negative relationship between size and profitability whereas positive and statistically significant relationship exists between sales growth and both returns on equity.

Chowdhury & Chowdhury (2010) in their empirical study examined the impact of debt equity structure on the value of shares of sample companies to support MM theory. The data had been collected from 77 non- financial companies listed on the two stock exchanges viz. Dhaka stock exchange and Chittagong stock exchange for the period of 1999 to 2003. Correlation and cross sectional time series regression analysis techniques had been applied to test the data. The study found that optimal combination of debt and equity is essential to maximize the wealth of shareholders. The results also revealed that significant relation exists between capital structure and value of firm.

Lakshmi (2010) investigated the relationship between ownership structure and firm performance of 1314 non financial firms for the year 2008. The study revealed significant negative relation between the ownership structure defined in terms of promoters' shareholding and institutional investors' shareholding and debt level employed by the firm. The results further revealed that size, profitability, growth,

tangibility and business risk are significant determinants for deciding the capital structure of Indian corporate sector.

Ahmed *et al.* (2012) examined the impact of determinants of capital structure on firm performance of 58 Malaysian public listed companies of two major sectors viz. consumer sector and industrial sector through multiple regression technique for the period of 2005 to 2010. Leverage in terms of short term debt, long term debt and total debt along with size, growth in sales, growth in assets and efficiency were taken as controllable variables. The study found significant impact of short term and total debt on ROA and while ROE is not significantly associated with any of the model. Capital structure has no long term impact on shareholders returns. The results further revealed that the investors who are only interested in return on equity are unresponsive regarding capital structure.

Saleha, *et al.* (2012) analysed various factors affecting profitability of pharmaceutical sector in Pakistan by using regression from 2001-2010. The factors were financial charges, paid-up capital, sales, stock dividend, cash dividend, tax, PBT and number of shares etc. They concluded that cash, sale and investment influence profitability of firms. They concluded that profits after tax could increase or decrease with any change in paid-up capital, sales, dividend decisions, tax and number of shares. The study also revealed that government policies and investment opportunities had great impact on the progress of the companies.

Singh (2013) studied the impact of capital structure on profitability of 110 Bombay Stock Exchange listed manufacturing firms for the period of 2004-05 to 2011-12. Dependent variables i.e. return on assets and return on capital employed has been taken to study the relationship of these with leverage as independent variable in terms of total debt to total assets and debt equity ratio. The results concluded that capital structure has significant impact on profitability and increased use of debt funds tends to reduce profits.

Mburu (2015) examined the relation of capital structure and financial performance of 40 non financial firms quoted at the Nairobi securities exchange (NSE) in Kenya by using multiple regression method over the period of 5 years from 2009 to 2013. The study revealed that financial performance measured by return on assets is negatively and significantly affected by capital structure in selected firms. The result further support prior studies in the sense that capital structure decisions are important as they influence firm's financial performance.

Research Methodology and Scope of the study
Objective of the Study

The aim of this study is to study and compare the impact of capital structure on profitability of Indian Service and Manufacturing industry.

Scope

The scope of this paper is restricted to 100 Indian Service sector companies and 100 manufacturing sector companies listed on Bombay Stock Exchange. Companies have been selected on the basis of maximum capitalization. But due to several constraints such as the non-availability of financial statements in a particular year or non-working of a company or incorporation of the company during or after the study period, it is bound to restrict the final sample of companies to 183. Service Industries include Computer & IT, Telecommunication, Transport & Courier, Media & Entertainment and Hotel & Tourism Industry whereas Manufacturing Industries include Drugs & Pharmaceutical, Iron & Steel, Cement, Chemical and Textile Industry. The time period of the study is ten years from 2004-05 to 2013-14. The required secondary data has been taken from the corporate data base PROWESS maintained by centre for monitoring Indian Economy (CMIE).

Variables of the Study

The independent variables of the study are debt to equity and control variables consist of size, growth, liquidity, tangibility, uniqueness, non-debt tax shield, profitability, debt service capacity, business risk, effective tax rate and Promoters Shareholding and dependent variable is Return on Equity (ROE) and Return on Assets.

Debt to Equity

Debt equity ratio reflects more completely, firm's reliance on borrowed funds (Bhatt, 1980). So, debt-equity ratio has been used as proxy to measure leverage in the present study in line with Taub (1975), Bhatt (1980), Pandey, *et al.* (2000) and Reddy (2012). Debts include both short term & long term debts from financial institutions, banks, fixed deposits from government, foreign loans & funds raised from capital market through debt instruments such as commercial papers and debentures (both convertible &Non convertible) and the equity includes equity share capital, preference share capital and reserve & surplus minus revaluation reserves & miscellaneous expenses not written off. Preference share capital is also included being irredeemable in nature.

Profitability

Profitability has been measured in terms of return on assets and return on equity. Return on assets is calculated as Earnings before Interest and tax / Total Assets and return on equity is calculated with the formula Earnings after Tax / Net Worth.

Methodology

Panel data regression has been applied for this paper as it combines cross-sectional data with time series data. Panel data have space as well as time dimension (Gujarati, 2004). Combination of time series with cross-section observations, panel data give "more informative data, more variability, less collinearity among variables, and more efficiency," Baltagi (2001). Two panel data models i.e. Random Effects Model and Fixed Effects Model have been applied to know the impact of capital structure on profitability of the sample firms. Then Hausman's specification test is applied to check the validity and suitability of the model. This test suggests the rejection or acceptance of null hypothesis, which is, "Random effect model is appropriate," otherwise fixed effect model is used. Wald chi square test has been used to check the validity of random effect model. The

problem of multicollinearity has been checked with the help of Variance Inflation Factor (VIF) test. Durbin-Watson test has been applied to check the problem of auto correlation among regressors. All the analysis has been done with the help of software packages STATA. The equation for our regression model is:

$Y_{it} = \alpha + \beta X_{it} + \mu_{it}$

Where: Y_{it} is the dependent variable.

β_0 is the intercept.

X_{it} is the independent variable.

μ_{it} are the error terms.

i is the number of firms and t is the number of time periods.

Return on asset: $ROA_{it} = \beta_{0it} + \beta_1 DE_{it} + \beta_2 SIZE_{it} + \beta_3 G_{it} + \beta_4 TAN_{it} \beta_5 Liq_{it} + \beta_6 Unq_{it} + \beta_7 NDTS_{it} + \beta_8 Profit + \beta_9 DSC_{it} + \beta_{10} ETR + \beta_{11} BR_{it} + \beta_{12} PS + \mu_{it}$

Return on equity $ROE_{it} = \beta_{0it} + \beta_1 DE_{it} + \beta_2 SIZE_{it} + \beta_3 G_{it} + \beta_4 TAN_{it} \beta_5 Liq_{it} + \beta_6 Unq_{it} + \beta_7 NDTS_{it} + \beta_8 Profit + \beta_9 DSC_{it} + \beta_{10} ETR + \beta_{11} BR_{it} + \beta_{12} PS + \mu_{it}$

Variables Measures (proxy)

α=intercept

Lev = Leverage = Debt / Equity

S = Size = Natural Logarithm of Sales

G = Growth Opportunity = % Change in Total Assets

Tang = Tangibility = Fixed Assets / Total Assets

Liq = Liquidity =Current Assets / Current Liabilities

Uniq = Uniqueness = Selling and Distribution Cost /Sales

Ndts = Non-debt Tax Shield = Depreciation / Total Assets

Pfty = Profitability= EBIT / sales

Dsc = Debt service capacity = EBIT / Interest

Etr = Effective tax rate = 1- Earnings after Tax / Earnings before Tax

Br = Business Risk = Deviation from Mean of Net Profit / No. of Years

PS = Promoters Shareholding = Shares held by promoters/ Total number of shares outstanding

Results and Analysis

Random-effects regression results of Service Industries to recognize the impact of capital structure (debt-equity ratio) on ROE have been exhibited in table 1 Hausman's Specification test has recommended the use of Random-effects model for this data. The null hypothesis of Hausman's Specification test, i.e., "differences in coefficients not systematic" is not rejected, thus, Random-effects model has been suitable for Service Industries. The Wald chi-square value 417.22 with p-value of 0.0000 also confirms the appropriateness of the model. The VIF value for all the selected independent variables is within limits, therefore confirms that model is free from collinearity. Problem of auto correlation has been checked by Durbin-Watson test and it is between the prescribed limit of 1-3.

Table 1: Random-effects Regression Results for Impact of Capital Structure (Debt–equity Ratio) on Return on Equity in Service Industries

R-sq: within = 0. 2562 between = 0. 6675 overall = 0.4275	Number of observations = 830 Number of groups = 83 Wald chi^2 (12) = 417.22 Prob > chi^2 = 0.0000
Variable	Regression Coefficients
Capital Structure (D/E Ratio)	-.092(8.82)*
Size(sales)	-.064(2.57)*
Growth (Assets)	9.78(0.03)
Tangibility	.025(1.21)
Liquidity	-.001(0.45)
Uniqueness	-.047(0.32)
Non-debt tax shield	.347(0.68)
Profitability	2.13(14.6)*
Debt service capacity	-.001(0.94)
Effective tax rate	-.014(1.53)
Business Risk	.001(0.50)
Promoters Shareholding	.007(2.31)**
Cons	.053(0.76)
Durbin-Watson Test= 1.497691	

** indicates significance at 5 percent level

* indicates significance at 1 percent level

Note: The figures given in parentheses indicate the z-values.

The value of R^2 (overall) is 0.4275, it shows that 42.75 percent variation in ROE with this model over the time period of study. Negative and significant relation between leverage and ROE has been observed through regression results.   Negative relationship of leverage with ROE supports the predictions of Traditional theory that suggests that increasing use of debt increases cost of capital and hence reduced rate of return. Among control variables size has negative relation with ROE whereas profitability and promoter shareholdings has been found positive and significant relation with ROE at .01and .05 level respectively. Remaining variables have not been found statistically significant to influence the ROE for Service Industries.

Table 2 presents the results of Random-effects regression for examining the impact of capital structure on ROE in Manufacturing Industries. The

suitability of the model has been suggested on the recommendation of Hausman's Specification test.

Table 2: Random-effects Regression Results for
Impact of Capital Structure (Debt–equity Ratio) on Return on Equity
in Manufacturing Industries

R-sq: within = 0. 5074 between = 0. 4838 overall = 0.4891	Number of observations = 1000 Number of groups = 100 Wald chi^2 (12) = 976.23 Prob > chi^2 = 0.0000
Variable	Regression Coefficients
Capital Structure (D/E Ratio)	-.017(4.06)*
Size(sales)	-.091(7.96)*
Growth (Assets)	-.001(0.69)
Tangibility	-.051(1.06)
Liquidity	-.003(3.97)*
Uniqueness	.175(1.44)
Non-debt tax shield	.445(1.18)*
Profitability	1.88(26.1)*
Debt service capacity	-6.02(0.71)
Effective tax rate	.025(1.50)
Business Risk	-.001(2.96)*
Promoters Shareholding	.001(2.19)**
Cons	.216(5.02)
Durbin-Watson Test= 1.129174	

** indicates significance at 5 percent level
* indicates significance at 1 percent level
Note: The figures given in parentheses indicate the z-values.

VIF value for all variables for this data is not beyond the prescribed limit; therefore it verifies the non existence of collinearity in the model. The value of Durbin-Watson test is 1.12 which confirms that auto correlation is within limits in this model. Wald chi-square test has been used to verify the correctness of the model and for this data Wald chi square value 976.23 with p-value 0.0000 confirms the suitability and significance of the model. The model explains 48.91 percent of variation in ROE. The leverage has been found to be negatively related to the ROE and this relationship has been statistically significant at .01 level. Negative and significant impact on ROE has been revealed for the control variables viz., size,

liquidity and business risk whereas non-debt tax shield, profitability and promoter shareholdings have positive and statistically significant relation with ROE at .01 level. Other regressors have turned out to be insignificant for influencing ROE in Manufacturing Industries.

The Hausman's specification test has recommended the suitability of Fixed-effects model for Service Industries. The null hypothesis of Hausman's Specification test, i.e., "differences in coefficients not systematic" is not accepted, thus, Fixed-effects model has been applied. Therefore Fixed-effects results to recognize the impact of capital structure on ROA has been displayed in table 3.

Table 3: Fixed-effects Regression Results for
Impact of Capital Structure (Debt-equity Ratio) on Return on Assets
in Service Industries

R-sq: within = 0.3064 between = 0.4110 overall = 0.3490	Number of observations = 830 Number of groups = 83 F (12,735) = 27.06 Prob > F = 0.0000
Variable	Regression Coefficients
Capital Structure (D/E Ratio)	-.004(1.83)**
Size(sales)	.029(2.67)*
Growth (Assets)	- .001(0.25)
Tangibility	.003(0.79)
Liquidity	-.001(0.59)
Uniqueness	.119(3.01)*
Non-debt tax shield	-.444(3.17)*
Profitability	.051(13.5)*
Debt service capacity	5.93(1.65)***
Effective tax rate	.001(0.54)
Business Risk	.001(1.29)
Promoters Shareholding	.001(2.55)*
Cons	.024(0.84)
Durbin-Watson Test= 1.02532	

***indicates significance at 10 per cent level
** indicates significance at 5 per cent level
* indicates significance at 1 per cent level
Note: The figures given in parentheses indicate the t-values.

VIF test has been applied to check the multi collinearity among regressors. VIF test values for all regressors are below 3, therefore, data are not suffering from the problem of multi collinearity. The value of Durbin-Watson test comes to be 1.02, which is within the range of 1-3, revealing that data are free from the problem of auto correlation. The F-statistics is 27.06 and p-value of 0.0000 confirms the validity and suitability of model for interpretation. The table reveals negative and significant relationship between leverage and ROA at .05 level. The control variables viz., size, uniqueness, profitability, promoter shareholdings and debt service capacity have positive and significant relation with ROA whereas non-debt tax shield has been found to be negatively and significantly related with ROA in Service Industries during the study period. Other regressors have turned out to be insignificant in affecting ROA in Service Industry during the study period.

Table 4 depicts the Random-effects regression results for examining the relationship of capital structure with ROA in Manufacturing Industries. The value of Hausman's Specification test has suggested the use of Random-effects regression model for the data.

Table 4: Random-effects Regression Results for
Impact of Capital Structure (Debt-equity Ratio) on Return on Assets
in Manufacturing Industries

R-sq: within = 0. 2956 between = 0. 4906 overall = 0.3505	Number of observations = 1000 Number of groups = 100 Wald chi^2 (12) = 467.45 Prob > chi^2 = 0.0000
Variable	Regression Coefficients
Capital Structure (D/E Ratio)	-.013(7.73)*
Size(sales)	.002(0.53)
Growth (Assets)	-.001(1.86)***
Tangibility	-.046(2.32)**
Liquidity	-.001(1.01)
Uniqueness	-.092(1.83)***
Non-debt tax shield	.365(2.31)**
Profitability	.030(11.7)*
Debt service capacity	5.05(1.45)
Effective tax rate	.018(2.56)*
Business Risk	.001(7.08)*
Promoters Shareholding	-.001(1.23)
Cons	.145(8.36)
Durbin-Watson Test= 1.107086	

***indicates significance at 10 per cent level
** indicates significance at 5 per cent level
* indicates significance at 1 per cent level
Note: The figures given in parentheses indicate the z-values.

The value of Hausman's Specification test is -37.35 with a p-value of 0.0000which did not reject the null hypothesis. Therefore, Random-effects model has been considered appropriate for Manufacturing Industries. Less than 2 VIF value for all variables ensures the non existence of collinearity. Auto correlation has been found within limits. The R-square is 0.3505 which indicates that the model has explained 35.05 per cent of variation in ROA. Leverage has been found negatively related to ROA, and the relationship has been statistically significant at .01 level. Therefore it supports the importance of leverage for ROA. Positive and significant relation has been found among profitability, business risk, effective tax rate and non-debt tax shield with ROA at .01 level and .05 level respectively, whereas negative and significant relation has been found among growth, uniqueness and tangibility with ROA at .10 level and .05 level respectively. All other control variables have no impact on ROA during time period of study.

Summarized results to know the impact of capital structure (debt to equity) on ROE and ROA indicated that leverage has negative and significant impact on profitability in all the models. The negative relation of leverage and profitability supports the predictions of Traditional theory that suggests that increasing use of debt increases cost of capital and hence reduced rate of return in both service and manufacturing industries.

References
Abor, J. (2005), "The Effect of Capital Structure on Profitability: Empirical Analysis of Listed Firms in Ghana", Journal of Risk Finance, Vol. 6 No. 5, pp. 438-45.
Ahmed, S. and Hanif, M. (2011), "Determinants of Capital Structure in Textile Sector of

Shrinkhla Ek Shodhparak Vaicharik Patrika

Pakistan", Retrieved from: http://ssrn.com/abstract=1962277.

Ahmed, Z., Abdullah, N. M. H. and Roslan, H. (2012), "Capital Structure Effect on Firm Performance: Focusing on consumers and Industrial Sectors on Malaysian Firms," International Review of Business Research Papers, vol. 8, No. 5, pp.137-155.

Bevan, A. A. and Danbolt, J. (2000), "Dynamics in the Determinants of Capital Structure in the UK", Working paper 2000/9, Department of Accounting and Finance, University of Glasgow, Retrieved from: http://ssrn.com/abstract=233551.

Bhat, R. K. (1980), "Determinants of Financial Leverage: Some Further Evidence", The Chartered Accountant, Vol. 29, No.6, pp. 451-456.

Chen, J. (2002), "Determinants of Capital Structure of Chinese-listed Companies", Journal of Business Research, Vol. 57, pp. 1341-51.

Chowdhury, A. and Chowdhury, S.P., (2010), " Impact of Capital Structure on Firm's Value: Evidence from Bangladesh," Business and Economic Horizons, vol.3, issue.3,pp. 111-122.

Dailida, D. and Novikov, V. (2004), "Capital Structure in Developing Countries", Corporate Finance – Doctoral Seminar SS 2004 – HSG University of St. Gallen, May 2004, Downloaded from http://ssrn.com/abstract=1213735.

DeAngelo, H. and Masulis, R. (1980), "Optimal Capital Structure under Corporate and Personal Taxation", Journal of Financial Economics, Vol. 8, pp. 3-29.

Eriotis, N. (2007), " How firm characteristics affect capital structure: an empirical Study," Managerial Finance, Vol. 33 No. 5, pp. 321-331.

Fama, E. F. and French, K. R. (2002), "Testing Trade-off and Pecking Order Predictions about Dividends and Debt", Review of Financial Studies, Vol. 15, pp. 1-33.

Frank, M. Z. and Goyal, V. K. (2003), "Testing the Pecking Order Theory of Capital Structure", Journal of Financial Economics, Vol. 67, pp. 217-48.

Gatsi, J. G. and Akoto, R. K. (2007), "Capital Structure and Profitability in Ghanaian Banks", Working Paper Series, Available at http://ssrn.com/abstract id1618952.

Harris, M. and Raviv, A. (1991), "The Theory of Capital Structure", Journal of Finance, Vol. 46, pp. 297-355.

Howells J., (2000) "Innovation &Services: New conceptual Frameworks," The University of Manchester & UMIST CRIC, Discussion Paper, No 38.

Lakshmi, K. (2010), "Ownership Structure and Capital Structure: Evidence from Indian Firms",

Retrieved from: http://ssrn.com/abstract=1344113.

Mburu, S. M. (2015), "Impact of Capital Structure on Financial Performance; Evidence from Non Financial Firms Quoted at the Nairobi Securities Exchange in Kenya", International Journal of Scientific and Research Publications, Vol. 5, No. 12, pp. 173-177.

Miller, M. H. (1977), "Debt and Taxes", Journal of Finance, pp. 261-275.

Modigliani, F. and Miller, M. H. (1958), "The Cost of Capital, Corporation Finance and the Theory of Investment", American Economic Review, Vol. 48, pp. 261-97.

Modigliani, F. and Miller, M. H. (1963), "Corporate Income Taxes and the Cost of Capital: A Correction", American Economic Review, Vol. 53, pp. 433-43.

Mojtahedzadeh, V. and Nejati, Z. (2009), "Tests of Capital Structure 'Static Trade off' and 'Pecking Order' Theories in Iran", Retrieved from: http://ssrn.com/abstract=1915955.

Pandey, I. M., Ranjit, M. K. and Chotigent, T. (2000), "Capital Structure Choices in an Emerging Market: The Case of Thailand", Management and Change, Vol. 4, No 1, pp. 1-32.

Rajan, R. G. and Zingales, L. (1995), "What Do We Know About Capital Structure? Some Evidence from International Data", Journal of Finance, Vol. 50, pp. 1421-60.

Reddy N.K. (2012), "Capital Structure and its Impact on Profitability in Select Software Companies in South India," Indian journal of Applied Research, Vol. 2. No. 3, pp.108-110.

Saleha, Iqbal. J. and Hassan. Y. (2012), "Analysis of Capital Structure and Revolution of pharmaceutical industry in Pakistan over the Decade," Global Journal of Management and Business Research, Vol. 12. No. 2.

Singh, G. (2013), "Interrelationship between capital structure and profitability with special reference to Manufacturing Industry in India", International journal of management and social sciences research, Vol.2 No.8, pp. 55-61.

Taub, A. J. (1975), "Determinants of the Firm's Capital Structure", The Review of Economics and Statistics, Vol. 57, pp. 410-416.

Ting, I. W. K and Lean, H. H (2011), " Capital Structure Of Government-Linked Companies In Malaysia", Asian Academy Of Management Journal Of Accounting And Finance, Vol. 7, No. 2, pp.137–156.

Titman, S. and Wessels, R. (1988), "The Determinants of Capital Structure Choice", The Journal of Finance, Vol. 43, No. 1, pp. 1-19.