

Macro Economic Factors and Capital Structure Decisions of Listed Companies: An Empirical Study for Indian Economy

Shweta Goel^{*6}

Abstract:

The relationship between macroeconomic factors and the capital structure of Indian listed companies has been expounded in the present study using panel data from 2008 to 2017 of 255 non-financing companies. Macro-economic indicators i.e. gross domestic product (GDP), interest rate and inflation rate have been studied to analyze their influence on capital structure decisions. GDP growth rate is found to negatively and statistically significantly related with capital structure measured by long term debt to total assets, whereas in terms of total debt the relationship is again negative though not statistically significant. Inflation is positively and statistically significantly associated with capital structure measured in terms of both long term debt as well as total debt. As far as relationship between levels of debt and rate of interest is concerned, the results of panel regression suggest negative though not significant relation between the two.

Key words: Capital structure, Macro-economic, Indian, GDP, Inflation rate, Interest rate.

Introduction

Capital structure is one of the most argumentative areas in the field of financial literature and the puzzle of debt and equity equation in the firm's capital structure is an ever going mystery. In the technical jargon, capital structure refers to the way firm funds its investment decisions by combining different sources of funds particularly with a blend of debt, equity or hybrid securities. Firms often thrive to achieve an optimal mix of different long term sources of fund which implies a capital structure where combination of sources leads to maximizing firm's value and minimizing firm's overall cost of capital.

Among the various contributors, some names include Modigliani and Miller, Durand, Myres, Donaldson, Jensen and Meckling each of which has a different proposition regarding firm's capital structure. A range of empirical and theoretical researches are available testing the relevance of these theories developed and their propositions. Apart from the various theories developed over time, researchers have shown keen interest in determining the factors influencing capital structure decisions of firms. Accordingly, almost an endless list of attributes relative to capital structure decisions could be created. Looking from micro perspective, various firm specific attributes such as assets structure, size of the firm, growth opportunities, profitability,

⁶M.Phil Researcher, Department of Commerce, Delhi School of Economics, University of Delhi, email id: goel.shweta06@gmail.com

taxation, risk & volatility, liquidity, product uniqueness, non- debttax shields have been found to be the key determinants of firm's capital structure (Harris and Raviv, 1991; Titman and Wessels, 1988; Gaud et. al., 2005; Damodaran, 2004).

Besides the various above mentioned factors researched upon over past years, several country specific factors can also play significant role in determining the capital structure of firms. However this aspect of country specific attributes has been an area not very much researched upon and whatever researches have been done are majorly confined to developed economies of the world. Also, the limited literature review available in this respect suggests the studies relating to macro-economic framework of a country influencing capital structure decisions. Accordingly the present study focuses on India, the fastest developing economy and aims at studying the relationship that might exist between the macro-economic indicators of Indian economy and the capital structure decisions of Indian Listed companies. This study conducts panel data analyses on a sample of 255 non financing Indian companies listed on NIFTY 500 Index for a period from 2008 to 2017.

Literature review

Capital structure area drew major attention of financial economists after the seminal work of Modigliani and Miller's (1958) "irrelevance theory of capital structure". As per **Modigliani and Miller** (1958), under the perfect capital market assumption, the capital structure of a firm has no impact on the value of the firm. However this theory was criticized by many researchers on the ground that there cannot be a situation of perfect capital market prevailing in reality. Although later on **Modigliani and Miller** (1963) revised their earlier theory by including tax benefits on debt and argued that in case of market imperfections and when interest on debt is tax deductible, a firm's value can be increased by incorporating more that in its capital structure. The trade- off theory claims that a firm's optimal ratio is remained by a trade- off between the losses and gains of borrowings, holding the firm's assets and investment plans constant (**Brenan and Schwartz**, 1978; **Deangelo and Masulis**, 1980; **Bradley et. al.**, 1984). **Jensen and Meckling** (1976), proposed the agency cost theory, which argues that the agency problem is caused by conflict of interest between shareholders and managers i.e. agency cost of equity or between shareholders and debt holders i.e. agency cost of debt. **Donaldson** (1961) first suggested the pecking order theory. As against the trade -off theory, **Myres** (1984) developed a pecking order theory about how firms finance themselves and about the capital structures that results from these pecking order decisions. **Baker and Wugler** (2002) recommended a new theory of capital structure called "market timing theory of capital structure" which argues that the firms time their equity issues in the sense that they issue new stock when the stock price is perceive to be overvalued and buy back own shares when there is undervaluation. Consequently, fluctuations in stock prices affect firm's capital structures.

Further, in the recent era, a lot of discussion has revolved around the fact that it's not just firm specific factors or industry specific factors that influences capital structure but a whole gamut of country specific factors in terms of institutional framework, macroeconomic scenario and financial sector development might play very important role.

Gajurel (2006) provided evidences on how macro-economic conditions affect the financing decisions of firms in the context of Nepal. **Jong et al.** (2008) constructed a database of nearly 12000 firms from 42 countries across the world for the period from 1997 to 2001 to analyze the significance of various firm specific and country specific variables in taking capital structure decisions by firms. Results obtained revealed that Bond market development, stake holder's protection laws and GDP growth rate were found to be significantly impacting capital structure across countries. Study further concluded that firm specific factors are influenced by country specific factors resulting into indirect impact also on capital structure of country factors. **Bokpin** (2009) analyzed a panel data for 34 emerging market economies with the objective of examining the influence of macro-economic factors on the capital structure and the results of the research supported the existing literature in the field of capital structure concerned with the effects of investment opportunity, profitability, stock market development, interest rate, inflation, GDP per capita and banking sector development on financing decisions of the firms.

Basto et al. (2009) conducted a study in Latin America covering 388 publicly traded companies from the seven largest economies over the period from 2001-2006 to analyze the determinants of capital structure by involving a whole gamut of company specific, macroeconomic and institutional factors of countries. At the country level growth of GDP was found to be the variable statistically significantly and negatively impacting indebtedness of companies. Results of the study indicated that at times of economic boom companies reduce their financial leverage due to availability of better internal resources according to pecking order theory. **Sett and Sarkhel** (2010); **Chadegani et al.** (2011), suggested financial leverage to be positively associated with banking sector development as against negative association with stock market development for Indian private corporate. Further, inflation and effective corporate tax was observed to be positively related with leverage decisions. Researchers concluded that the development in financial sector of the country did influence the non-government non-financial Indian corporate sector. **Gungoraydinoglu and oztekin** (2011) observed that the cross country differences among firm's decision regarding capital structure were systematically related to effectiveness of a country's legal, financial and political institutions. **Muthama et al.** (2013), examined the magnitude and the nature of relationship between the macroeconomic environment and the corporate capital structure decisions for the firms in Kenya. GDP growth rate was found to be positively related to long term debt ratio while the same had a negative relation with other two proxies of leverage. Inflation and interest rates were found to be negatively impacting the short term debt ratio while the other two proxies were found to be positively influenced by interest rates measured by the treasury bills.

Camara (2012) examined the influence of macroeconomic factors such as gross domestic product, inflation, commercial paper spread; growth in aggregate capital expenditure of non-financial firms by employing an integrated dynamic partial adjustment capital structure model. Results revealed that aggregate capital expenditure and commercial paper spread were strongly and positively related to leverage for multinationals as against domestic firms. Consumer price index showed negative relation with leverage in case of both types of firms. **Negash** (2013) investigated the role of macroeconomic conditions of a country, institutional setup as well as industry and firm specific characteristics in determining firm's capital structure decisions. A positive association was observed between investor's rights protection and leverage as against inverse relationship between rule of law, size of banking sector and capital structure decisions. The results of the study further suggested that the legal and institutional framework of a country as well as the level of income of the country in which a firm operated along with the growth rate and inflation level did matter in taking financing decisions of the firms in the sample created. **Kim et al.** (2015), study aimed at analyzing the relationship between economic conditions and firm's capital structure. The results indicated that as economy is under expansionary conditions, firms adjust faster towards target level of leverage. **Perera and Gunadeera** (2015), suggested banking sector development and government intervention to be significantly influencing capital structure decisions whereas stock market developments and GDP growth rate to be having a negative insignificant influence on financing decisions of firms. **Belkhir et al.** (2016), indicated that higher the economic growth and inflation, higher will be leveraged opted by firms. Further, as the institutional environment improves with regulatory effectiveness strengthening, leverage increases. The review of researches already reported suggests lack of consensus in terms of factors determining the leverage decisions of firms. Most of these studies were confined to developed economies and limited literature was available in context of developing and emerging economies like India. Further, there was rarely any research found in context of examining the influence of macro-economic framework of a country on the capital structure decisions of companies. Accordingly, the coming sections of this study will be devoted to empirically examine the gaps found from the literature review.

Objective of the study

The study seeks to examine how macro-economic scenario of Indian economy influences and drives the capital structure decisions of Indian listed firms. Accordingly the following objectives have been framed for the evaluation purpose:

- To study the relationship between Gross domestic product and the capital structure decisions of Indian listed companies.
- To study the relationship between Inflation rate and the capital structure decisions of Indian listed companies.

- To study the relationship between Interest rate and the capital structure decisions of Indian listed companies.

Methodology of the study

For the empirical analysis, in general, this study has used non- random and convenience sampling methods wherein all the 500 companies that have been listed on the Nifty 500 index of National stock exchange as on April 30, 2017 have been targeted. The study covered a period of ten years from 2008 to 2017. Firm and country specific data has been collected using Bloomberg database, World Bank Database as well as Reserve Bank of India Database for the Indian economy. Data so collected has been carefully scrutinized and a number of companies have been excluded including banking and non- banking financial entities on account of their different financial structures and the companies with incomplete financial records or non- availability of required data for the said period. After the elimination of companies on the above mentioned basis, a total of 255 companies qualified to be included in the sample for study.

Variable specifications

The variables employed in the current study are based on the theoretical knowledge and what the past researchers have derived over decades of research in the area of corporate finance.

Dependent Variables

The measures of leverage serve as dependent variables in the current study. Literature provides a number of proxies to be used as a measure of leverage. However, keeping into consideration the availability of data over entire study period, two proxies have been shortlisted to serve as dependent variables for this study namely: Long Term Debt (LTD) represented by taking a ratio of long term debt to total assets and secondly, Total Debt(TD) represented by ratio of total debt to total assets.

Explanatory Variables

Since the objective is to study the relationship between macro-economic scenario of India and capital structure of Indian Listed companies, accordingly few most popular indicators representing economy's scenario have been employed as independent variable. They include:

- i) GDP - The GDP is an indicator of a country's overall economic performance by measuring the monetary value of all the goods and services produced in a country using exclusively the resources of that country during a given time period. For the purpose of this study, GDP has been measured by taking annual growth rate in GDP for Indian economy over the period of ten years under study.
- ii) Inflation rate- Inflation can be one of the very important macroeconomic attribute of a country that might influence firm's leverage decisions. Theoretically, inflation implies a consistent rise in general price level in economy over a period of time. On

the basis of literature review, Inflation has been measured by taking percentage change in Consumer Price Index on annual basis in India.

- iii) Interest Rates- Interest rates can be very important determinant of leverage decisions within the corporations, as corporations are more likely to use debt when cost of borrowing is less. For this study, interest rate has been measured by taking a proxy of yield on 10 years government bonds.

Hypotheses of the study

Past empirical researches suggested the existence of some relationship between country's macro-economic scenario and the firm's capital structure decisions. However, no concrete relationship has been found, rather a hybrid view has been developed across different researches in this area. Thus, depending upon the objectives under study, following hypotheses have been formulated:

Ho₁: There is no significant relation between GDP growth rate (GDP) and capital structure of Indian listed companies measured by Long term debt (LTD).

Ha₁: There is a significant relation between GDP growth rate (GDP) and capital structure of Indian listed companies measured by Long term debt (LTD).

Ho₂: There is no significant relation between rate of Inflation (INF) and capital structure of Indian listed companies measured by Long term debt (LTD).

Ha₂: There is a significant relation between rate of Inflation (INF) and capital structure of Indian listed companies measured by Long term debt (LTD).

Ho₃: There is no significant relation between rate of Interest (INT) and capital structure of Indian listed companies measured by Long term debt (LTD).

Ha₃: There is a significant relation between rate of Interest (INT) and capital structure of Indian listed companies measured by Long term debt (LTD).

Ho₄: There is no significant relation between GDP growth rate (GDP) and capital structure of Indian listed companies measured by Total Debt (TD).

Ha₄: There is a significant relation between GDP growth rate (GDP) and capital structure of Indian listed companies measured by Total Debt (TD).

Ho₅: There is no significant relation between rate of Inflation (INF) and capital structure of Indian listed companies measured by Total Debt (TD).

Ha₅: There is a significant relation between rate of Inflation (INF) and capital structure of Indian listed companies measured by Total Debt (TD).

Ho₆: There is no significant relation between rate of Interest (INT) and capital structure of Indian listed companies measured by Total Debt (TD).

Ha₆: There is a significant relation between rate of Interest (INT) and capital structure of Indian listed companies measured by Total Debt (TD).

Regression Models

For empirical analysis a panel data technique has been employed. The reason for opting panel data approach is to overcome collinearity issue among independent variables and enhance the

degrees of freedom thereby giving more efficient estimates. For testing various hypotheses, a following two models have been developed as given below:

Model 1

The first model considers Long term debt (LTD) as dependent variables and GDP Growth rate, Rate of inflation and rate of Interest as explanatory Macroeconomic Indicators to study the relationship that might exist between India's macroeconomic scenario and Indian company's capital structure decision. The model is as follow:

$$LTD_{it} = \beta_{1i} + \beta_2 GDP_{it} + \beta_3 INF_{it} + \beta_4 INT_{it} + u_{it} \quad (1)$$

Where,

LTD_{it}: Long term debt to assets ratio, a proxy for capital structure of firm.

GDP_{it}: Growth rate of Gross domestic product, measured annually.

INF_{it}: Inflation measured by rate of change in consumer price index

INT_{it}: Interest rate measured as yield on 10 year government bond

u_{it} = error term

i = companies in the cross section (eg. 1, 2, 3.....255)

t = period of time (years, 2008, 2009.....2017)

Model 2

The second model considers Total Debt (TD) as dependent variables and GDP Growth rate, Rate of inflation and rate of Interest as explanatory Macroeconomic Indicators to study the relationship that might exist between India's macroeconomic scenario and Indian company's capital structure decision. The model is as follow:

$$TD_{it} = \beta_{1i} + \beta_2 GDP_{it} + \beta_3 INF_{it} + \beta_4 INT_{it} + u_{it} \quad (2)$$

Where,

TD_{it}: Total debt to assets ratio, a proxy for capital structure of firm.

GDP_{it}: Growth rate of Gross domestic product, measured annually.

INF_{it}: Inflation measured by rate of change in consumer price index

INT_{it}: Interest rate measured as yield on 10 year government bond

u_{it} = error term

i = companies in the cross section (eg. 1, 2, 3.....255)

t = period of time (years, 2008, 2009.....2017)

The results have been presented in the section of the paper with relevant empirical evidences.

Analysis and interpretation

Based on the methodology discussed this section of study reports the results and outcome for the both the models tested. Both regression equations are estimated for their β parameters using panel regression analysis. Firstly, all the variables in multiple models have been tested for stationarity of the paneled series using Levin, Lin and Chu unit root test. Further, as it can be

seen from table 1 none of the variables in analysis are found to be normally distributed as per Jarque-Bera test of normality. The null hypotheses of normal distributed get rejected as p- value for each variable is less than .05. However, due to number of observations being very large, central limit theorem is applied and variables are assumed to be normally distributed.

Table 1: Panel Unit Root Test for Variables (Model 1 & Model 2)

Null Hypothesis: Unit root (common unit root process)		
Variable	statistic	p-value
LTD	-417.496	0.0000
TD	-82.3886	0.0000
GDP	-38.1202	0.0000
INT	48.4760	1.0000
(DINT)	-111.795	0.0000
INF	-37.1542	0.0000

(Source: created by authors)

The above table 1 shows the results of panel unit test conducted by using Levin, Lin and Chu test under the common unit root process assumption and balanced observations. The test has employed modified t* statistics for asymptotic normality and Newey–West automatic bandwidth selection as well as BarlettKernal. As the p-values for majorly all the variables under study are less than .05, this implies that all the variables exhibit stationarity at the significance level of 5% except the interest rate. Accordingly, first difference of interest rate (DINT) has been taken to achieve stationarity of variable. Thereafter, the null hypotheses of both the panels containing unit root stands rejected and stationarity is ensured. Hence, procedure for further analysis of data has been adopted.

A total sample of 255 Indian listed companies has been investigated over a period of ten years from 2008-2017. Eviews Software has been used for analysis purpose. Panel data is used to analyze the impact of country’s macro-economic indicators on capital structure. It is to be noted that in this analysis also, company specific variables i.e. leverage ratios vary across companies and time whereas macro-economic indicators are same for every company but vary across time. Before analyzing the regression results, the explanatory variables have been tested for the multicollinearity issue by using Correlation Matrix and Variance Inflation Factors (VIF). The results are presented as below for both the models:

Table 2: Correlation Matrix (Model 1 & Model 2)

	INF	GDP	DINT
INF	1.000000		
GDP	0.148117	1.000000	
DINT	0.342549	0.401111	1.000000

(Source: created by authors)

Formulticollinearity to be present between independent variables, the correlation coefficient has to be greater than +/- 0.8. However, correlation matrix in table 2 clearly shows that none of the explanatory variables' coefficients are greater than +/- 0.8, thereby indication of no issue of multicollinearity between explanatory variables.

Table 3: Variance Inflation Factor (Model 1 & Model 2)

Variance Inflation Factors (Model1)		
Sample: 2008 2017		
Included observations: 2295		
	Coefficient	Uncentered
Variable	Variance	VIF
C	0.27703559	7.324952251
GDP	0.0001047	1.842281443
INF	0.00344845	8.311296145
DINT	0.07515623	1.369083352
Variance Inflation Factors (Model2)		
Sample: 2008 2017		
Included observations: 2295		
	Coefficient	Uncentered
Variable	Variance	VIF
C	1.34125902	1.295673316
GDP	0.00012957	1.215022438
INF	0.00426759	1.388058611
DINT	0.09300869	1.322468258

(Source: created by authors)

Further, multicollinearity between independent variables has been tested by using VIF statistics in table 3. A general accepted level of VIF up to 10 represents no multicollinearity. Accordingly VIF values here for Model 1 are 1.84, 8.3 and 1.33 and for Model 2 are 1.21, 1,38and 1.32 which are well in acceptable limits, so no problem of multicollinearity.

Regression Results

To ensure the robustness of the regression analysis, both fixed effects and random effects equations are estimated and the applicability of the either effect in the panel data analysis has been checked using Redundant Test for Cross section fixed effects and Hausman test.

Table 4: Redundant test for fixed effects (Model 1 & Model 2)

Effects Test	Statistic	d.f.	Prob.
Redundant Test for Fixed Effects (Model 1)			
Dependent variable- LTD			
Cross-section F	24.791186	(254,2037)	0.0000
Cross-section Chi-square	3233.335436	254	0.0000
Redundant Test for Fixed Effects (Model 2)			
Dependent Variable- TD			
Cross-section F	28.155913	(254,2037)	0.0000
Cross-section Chi-square	3457.384599	254	0.0000

(Source: created by authors)

To test whether the cross sectional fixed effect is well specified, the redundant fixed effects test has been conducted and it can be seen from table 4 that the p-value of the cross section F-test is 0.0000 at 5% level of significance for both Model 1 and Model 2 indicating the applicability and significance of the cross section fixed effect model specification. Further, table 5 shows the results of Hausman test (null hypotheses being that the two estimation models i.e. fixed effect and random effect both are OK and therefore they will be giving coefficients that are similar) in case of both models, wherein p-value (1.0000) of the chi-square test suggests that null hypotheses of model being well specified may not be rejected and hence random effects may also be applicable.

Table 5: Hausman Test (Model 1 and Model 2)

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random (Model 1)	0.000000	3	1.0000
Cross-section random (Model 2)	0.000000	3	1.0000

(Source: created by authors)

But it is to be noted that the estimates of random effects are based on the assumption that the individual error terms are independent of each other and not auto correlated across both cross section and time series units.⁷ Also, the random effects estimator makes the assumption of random effects being orthogonal to the regressors which the fixed effects estimator does not. If this assumption is wrong, the random effects estimator will be inconsistent but the fixed effects estimator is unaffected. Accordingly, table 6 presents the regression results based on fixed effect model of panel data analysis.

Table 6: Regression Results of panel data Regression using fixed effects (Model 1 & 2)

	C	GDP	INF	DINT	F - statistics	R-square	Adjusted R square
Cross section fixed effects (p-value) Model 1	14.28575 (0.0000)	- 0.040414 (0.0001)	0.510316 (0.0000)	- 0.003388 (0.9901)	24.86097 (0.0000)	0.758256	0.727756
Cross section fixed effects (p-value) Model 2	26.44369 (0.0000)	- 0.015680 (0.1685)	0.341461 (0.0000)	-0.00844 (0.9779)	27.94654 (0.000000)	0.779050	0.751173

(Source: created by authors)

As evident from table 6, analysis provides the statistical test for overall model fit in terms of F ratio. Since the significance (p-value) for F-test is less than .05 for both models, this implies that overall regression models are best fit.

Further GDP growth rate is found to negatively and statistically significantly (p-value- 0.0001) related with capital structure measured by long term debt to total assets at 95% confidence level whereas in terms of total debt the relationship is again negative though not statistically significant. These results are in conformity with earlier studies (Gajurel, 2006; Dincergok&Yalciner, 2011; Lemma &Negash, 2012; Camara, 2014; Riaz et al., 2014). It can be reasoned that when GDP is high, it implies that companies might be having high level of business activities thereby earning higher profits. Higher profits enable businesses to finance their investment opportunities internally through retained earnings thereby reducing the

dependence on borrowed funds and hence lower levels of leverage in capital structure (Bokpin, 2009; Kayo & Kimura, 2011; Perera&Gunadeera, 2015).

These results are in line with the pecking order theory suggesting a negative association between profits and debt for a company. However, these results are in conflict with a number of researches indicating a positive association between GDP growth rate and leverage levels reasoning, higher GDP gives more investment opportunities to companies to prosper and hence the requirement for more funds makes companies' borrowing more (Booth et al., 2001; Joeveer, 2013; Belkhir et al., 2016; Buvanendra et al., 2016).

Further, it is evident from table 6 that inflation is positively and statistically significantly associated with capital structure measured in terms of both long term debt as well as total debt at 95% confidence level. This suggests higher the rate of inflation in present, companies prefer to invest more by borrowing via debt thereby to get the benefits accounting from lower cost of borrowing in future (Set & Sarkhel, 2010; Hanousek&Samshur, 2011; Lemma & Negash, 2012; Perera and Gunadeera, 2015; Belkhir et al., 2016; Buvanendra et al., 2016). But, there are evidences in literature stating a negative influence of inflation on leverage decisions of companies. Thus higher the rate of inflation, lower is the level of debt in capital structure (Booth et al., 2001; Drobetz et al., 2007).

As far as relationship between levels of debt and rate of interest is concerned, the results of panel regression suggest negative relation between the two. This implies higher the rate of interest prevailing in market lower will the level of debt preferred by companies. The reason being higher interest rates increases cost of borrowings for the companies in terms of return being demanded by investors, thereby making debt less attractive (Bokpin, 2009). Though in terms of expectations about future interest rates, the relationship might be positive in the sense that higher expected interest rates in future makes debt more preferable at comparatively lower levels of interest rates in present. However, results indicate no statistically significant influence of rate of interest in determining company's capital structure both measured by LTD (p-value > 0.5) as well as TD (p-value =0.9779) at 95% confidence level. Therefore, interest rate might not be a significant macroeconomic factor impacting leverage decisions of Indian listed non-financial companies.

Conclusion and limitations of the study

The present study focused on analyzing the influence of India's macro-economic scenario on the capital structure decision of listed Indian companies for the period from 2008 to 2017 by taking a sample of 255 companies.

Considering the influence of macro-economic indicators of Indian economy on firm's capital structure, GDP growth rate is found to negatively and statistically significantly related with capital structure measured by long term debt to total assets at 95% confidence level whereas in

terms of total debt the relationship is again negative though not statistically significant. Inflation is positively and statistically significantly associated with capital structure measured in terms of both long term debt as well as total debt. As far as relationship between levels of debt and rate of interest is concerned, the results of panel regression suggest negative though not significant relation between the two.

However, the current study covers only a span of nine years and a sample of 255 companies only. So, for future prospective and to do a further detailed research it will be recommended to take into account a larger sample of companies not just belonging to India but other developing countries also. Also, the whole lot of financing and banking sector should be made a part of analysis to gain a more generalized applicability of the results. Further, to achieve a deeper understanding a comparative sector analysis could be done so that a clearer picture regarding difference in capital structure patterns across different industries depending upon each industry's unique characteristics can be analyzed.

Bibliography

1. Aggarwal, R. (1990, July). Capital Structure Differences among Large Asian Companies. *ASEAN Economic Bulletin*, 7(1), 39-53.
2. Artakis, P. G., & Nifora, G. (2012). Capital Structure, Macroeconomic Variables & Stock Returns. Evidence from Greece. *International Advances in Economic Research*, 18(1), 87–101.
3. Baker, M., & Wurgler, J. (2002, February). Market Timing and Capital Structure. *The Journal of Finance*, 57(1), 1-32.
4. Bandyopadhyay, A., & Barua, N. M. (2016). Factors determining capital structure and corporate performance in India: Studying the business cycle effects. *The Quarterly Review of Economics and Finance*, 61, 160–172.
5. Bastos, D. D., Nakamura, W. T., & Basso, L. F. (2009). Determinants of Capital Structure of Publicly-Traded Companies in Latin America: The Role of Institutional and Macroeconomics Factors. *Journal of International Finance & Economics*, 9(3), 24.
6. Bhaird, C. m., & Lucey, B. (2010). Determinants of capital structure in Irish SMEs. *Small Business Economics*, 35(3), 357-375.
7. Bokpin, G. A. (2009). Macroeconomic development and capital structure decisions of firms. *Studies in Economics and Finance*, 26(2), 129 - 142.
8. Booth, L., Aivazian, V., Kunt, A. D., & Maksimovic, V. (2001). Capital Structures in Developing Countries. *The Journal of Finance*, 56(1), 87-130.
9. Buvanendra, S., Sridharan, P., & Thiyagarajan, S. (2016). Role of Country-specific Factors on Capital Structure Decision—Evidence from Sri Lankan Listed Firms. *Global Business Review*, 17(3), 582–593.

10. Chakraborty, I. (2010). Capital structure in an emerging stock market: The case of India. *Research in International Business and Finance*, 24, 295–314.
11. Chen, C. J., Cheng, C. A., He, J., & Kim, J. (1997). An Investigation of the Relationship between International Activities and Capital Structure. *Journal of International Business Studies*, 28(3), 563-577.
12. Chen, H. (2010). Macroeconomic Conditions and the Puzzles of Credit Spreads and Capital Structure. *The Journal of Finance*, 65(6), 2171-2212.
13. Daskalakis, N., & Psillaki, M. (2008). Do country or firm factors explain capital structure? Evidence from SMEs in France and Greece. *Applied Financial Economics*, 18, 87-97.
14. Deesomsak, R., Paudyal, K., & Pescetto, G. (2004). The determinants of capital structure: evidence from the Asia Pacific region. *Journal of Multinational Financial Management*, 14, 387–405.
15. Fischer, E. O., Heinkel, R., & Zechner, J. (1989, March). Dynamic Capital Structure Choice: Theory and Tests. *The Journal of Finance*, 44(1), 19-40.
16. Frank, M. Z., & Goyal, V. K. (2009). Capital Structure Decisions: Which Factors Are Reliably Important? *Financial Management*, 38(1), 1-37.
17. Gajurel, D. P. (2006). Macroeconomic Influences on Corporate Capital Structure.
18. Goyal, A. (2013, October). Impact of Capital Structure on Performance of Listed Public Sector Banks in India. *International Journal of Business and Management Invention*, 2(10), 35-43.
19. Graham, J. R., & Leary, M. T. (2011, April). A Review of Empirical Capital Structure Research and Directions for the Future. *Annual Review Of Financial Economics*.
20. Graham, J. R., Leary, M. T., & Roberts, M. R. (2015). A century of capital structure: The leveraging of corporate America. *Journal of Financial Economics*, 658–683.
21. Gujarati, D.N., & Porter, D.C. (2013). *Basic Econometrics*, 5th ed., McGraw-Hill, 634 -637.
22. Gungoraydinoglu, A., & Öztekin, Ö. (2011). Firm- and country-level determinants of corporate leverage: Some new international evidence. *Journal of Corporate Finance*, 1457–1474.
23. Harris, M., & Raviv, A. (1991, March). The Theory of Capital Structure. *The Journal of Finance*, 46(1), 297-355.
24. Jensen, . C. (1986, May). Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers. *The American Economic Review*, 76(2), 323-329.
25. Jensen, M. C., & Meckling, W. H. (1976, October). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. *Journal of Financial Economics*, 3(4), 305-360.
26. Jong, A. d., Kabir, R., & Nguyen, T. T. (2008). Capital structure around the world: The roles of firm- and country-specific determinants. *Journal of Banking & Finance*, 32, 1954–1969.
27. Kayo, E. K., & Kimura, H. (2011). Hierarchical determinants of capital structure. *Journal of Banking & Finance*, 358–371.

28. Khasnobis, B. G., & Bhaduri, S. N. (2002). Determinants of Capital Structure in India (1990-1998): A Dynamic Panel Data Approach. *Journal of Economic Integration*, 17(4), 761-776.
29. Miller, G. P. (1996, March). Finance and the Firm. *Journal of Institutional and Theoretical Economics*, 152(1), 89-107.
30. Modigliani, F., & Miller, M. H. (1958, June). The Cost of Capital, Corporation Finance and the Theory of Investment. *The American Economic Review*, 48(3), 261-297.
31. Modigliani, F., & Miller, M. H. (1963, June). Corporate Income Taxes and the Cost of Capital: A Correction. *The American Economic Review*, 53(3), 433-443.
32. Mokhova, N., & Zinecker, M. (2014). Macroeconomic factors and corporate capital structure. *Procedia - Social and Behavioral Sciences*, 530 – 540.
33. Muthama, C., Mbaluka, P., & Kalunda, E. (2013). An Empirical Analysis of Macroeconomic Influences on Corporate Capital Structure of Listed Companies in Kenya. *Journal of Finance and Investment Analysis*, 2(3), 41-62.
34. MYERS, S. C. (1984, July). The Capital Structure Puzzle. *The Journal Of Finance*, XXXIX(3), 575-592.
35. Negash, T. T. (2013). Institutional, macroeconomic and firm-specific determinants of capital structure: The African evidence. *Management Research Review*, 36(11), 1081 - 1122.
36. Pinegar, M. J., & Wilbricht, L. (1989). What Managers Think Of Capital Structure Theory: A Survey. *Financial Management*, 18(4), 82-91.
37. Perera, K. H. (2013). The Effects of Macroeconomic Conditions on Corporate Capital Structure: Evidence from Manufacturing Firms Listed in Colombo Stock Exchange. *International Journal of Science and Research*, 4(10), 1492-1497.
38. Psillaki, M., & Daskalakis, N. (2009). Are the Determinants of Capital Structure Country or Firm Specific? *Small Business Economics*, 33(3), 319-333.
39. RAJAN, R. G., & ZINGALES, L. (1995). What Do We Know about Capital Structure? Some Evidence from International Data. *The Journal Of Finance*, L(5), 1421-1460.
40. Sett, K., & Sarkhel, J. (2010). Macroeconomic Variables, Financial Sector Development and Capital Structure of Indian Private Corporate Sector During the Period 1981-2007.
41. Spiegel, Y., & Spulber, D. F. (1994). The Capital Structure of a Regulated Firm. *The RAND Journal of Economics*, 25(3), 424-440.
42. Strebulaev, I. A. (2007). Do Tests of Capital Structure Theory Mean What They Say? *The Journal of Finance*, 62(4), 1747-1787.
43. Sunder, L. S., & Myers, S. C. (1999). Testing static tradeoff against pecking order models of capital structure. *Journal of Financial Economics*, 219-244.
44. Zhang, X., & Mirza, S. S. (2015). Determinants of Capital Structure of Firms in Pre-Post Financial Crisis: Evidence from China. *Research Journal of Finance and Accounting*, 6(12), 33-51.