A Comparative Study on Capital Structure of Manufacturing Industries in Nepal and India

(With special reference to Cigarette/Tobacco Industries)

A

THESIS

Submitted to the

University of Rajasthan

For the Degree of

Doctor of Philosophy

(In Commerce)

2012

Supervised by
Prof. Govind Pareek
Department of Accountancy & Business Statistics
University of Rajasthan, Jaipur

Submitted by
Keshav Prasad Gadtaula

DEPARTMENT OF ACCOUNTANCY & BUSINESS STATISTICS
UNIVERSITY OF RAJASTHAN, JAIPUR (INDIA)

A Comparative Study on Capital Structure of Manufacturing Industries in Nepal and India

(With special reference to Cigarette/Tobacco Industries)

Summary

Submitted to the

University of Rajasthan

For the Degree of

Doctor of Philosophy

(In Commerce)

2012

Supervised by
Prof. Govind Pareek
Department of Accountancy & Business Statistics
University of Rajasthan, Jaipur

Submitted by
Keshav Prasad Gadtaula

DEPARTMENT OF ACCOUNTANCY & BUSINESS STATISTICS
UNIVERSITY OF RAJASTHAN, JAIPUR (INDIA)

Dr. Govind Pareek
Professor
Former Member, Board of Studies
Department of Accountancy & Business
Statistics, University of Rajasthan,
Jaipur - 302 004

Resi : C-151, Dayanand Marg,
Tilak Nagar, Jaipur - 302 004 (Raj.)
Phone : 0141-2621474
M.: 94143-10525

CERTIFICATE

This is to certify that the thesis entitled "**A Comparative Study on Capital Structure of Manufacturing Industries in Nepal and India (with special reference to Cigarette/Tobacco Industries)" is an original piece of research work done by Mr. Keshav Prasad Gadtaula under my guidance and supervision for the degree of Doctor of Philosophy in Commerce, Department of Accountancy & Business Statistics, University of Rajasthan, Jaipur. In the course of his research work he has attended the department for more than 140 days each year regularly. To the best of my knowledge and belief, the thesis is up to the standard both in respect of content and language for being referred to the examiner.**

Jaipur (India) **Prof. Govind Pareek**

Date: 21st March 2012 **(Supervisor)**

DECLARATION

I, hereby, declare that the present study entitled **"A Comparative Study on Capital Structure of Manufacturing Industries in Nepal and India (with special reference to Cigarette/Tobacco Industries)"** is based on my original work. The results presented in the study have not been submitted for the award of any degree.

Keshav Prasad Gadtaula
Research Scholar
Department of Accountancy and Business Statistics, Jaipur
Enrolment No. 726/2007
Registration No.10990/2009

Date: 21st March 2012

Dedicated to
My Mother
Late Mrs.
Man Kumari Gadtaula
& Father Mr. Indra Bilash Gadtaula

Who inspired by his parents incessantly
laboured to enable me to come to this stage bearing constant economic burden.

I am thankful to the
University
Grants Commission (UGC)
Bhaktapur, Nepal and
New Delhi, India for
Ph.D
Scholarship Grant.

PREFACE

The innovative guideline of the current research is based on the comparative study of tobacco industries in Nepal and India. Considered here are ITC and GPI of India & JCF and Surya Nepal of Nepal – the leading tobacco industries of both countries. It is concentrated on analysing the capital structure based on *intra as well as inter country comparison*. The thesis would serve as a guide for future prominent students, scholar and thinkers who intend to study the capital structure analysis of the tobacco industries. In addition, various statistical and econometric tools and techniques, along with theories such as Modigliani and Miller approach, pecking order theory, agency cost theory, asymmetric information theory of capital structure, Signalling effect theory with proportion of debt, Product/input market interaction, Naive theory, debt capacity theory, Default Risk, Debt Maturity and Levered Equity's Risk-Shifting Incentives, Capital Structure Arbitrage: Model Choice and Volatility Calibration, credit risk models with Black & Scholes, Calibration and Assessment of Default Risk are used in this thesis would enable them to acknowledge with the principles and updates being practised by organisation these days.

I would like to express my deep sense of gratitude to my thesis supervisor Dr. Govind Pareek, Professor and former member of board of studies, University of Rajasthan, Department of ABST, Jaipur, who helped regularly in guiding me in several ways right from the selection of topic to finalisation of research in spite of his busy schedule. This research study wouldn't have completed in absence of his assistance and encouragements.

I would also like to express my gratitude to all the family members especially Dr. Archana Pareek, Lecturer, P.G. Head, Department of

Botany, Vedic Kanya P.G. College, Jaipur who always encouraged and supported me in completion of this thesis.

I would also like to express my gratitude to Dr. Madhav Raj Koirala, Professer, Faculty of Management, Tribhuvan University, Dr. Promod Kumar Jha, Professor, Faculty of Economics, Post Graduate Campus, Biratnagar, Tribhuvan University, Mr. Hiranya Gautam, Reader, Faculty of Management , Post Graduate Campus, Biratnagar, Tribhuvan University, Dr. Arjun Baral, Reader, Faculty of Economics, Post Graduate Campus, Biratnagar, Tribhuvan University, Mr. Ramesh Babu Kafle, Lecturer, Faculty of Population, Purwanchal University for their valuable suggestions which helped me a lot during the course of analysing the primary and secondary data for the current research.

I would like to express my profound debt to Professor Dr Kamal Krishna Joshi, former chairman of UGC, Nepal and Professor Dr. Sukh Dev Throat former Chairman of UGC, India for granting funds and cooperation in selection of University to conduct research task under international pupil's category. In addition my sincere gratitude also goes to Registrar Office, University of Rajasthan, Dean, Office of the Dean Students' Welfare, International Student's Advisor, University of Rajasthan, Jaipur, Professor (Dr.) Shyam Sunder Modi, Head, Department of ABST, Department Members of ABST, Prof. (Dr.) Shyam Gopal Sharma, former Head of Department of ABST, University of Rajasthan, Ministry of HRD, Government of India and Embassy of Nepal in India at New Delhi for granting research permission to materialise the current research study.

Moreover, most of data and articles have been retrieved from Library of Delhi University, Faculty of Management, Jawaharlal Nehru University, New Delhi, Ratan Tata Library, New Delhi, FICCI, New Delhi, Central library, University of Rajasthan, Central library, Tribhuvan University, Kathmandu, Nepal, Regional library of Industry and Chambers of

Commerce, Biratnagar, Morang. It would really have been almost difficult to complete the study without cooperation of library members. All these members deserve my sincere appreciation. I am also thankful to accounts departments of ITC, GPI, JCF and Surya Nepal of Indian and Nepalese tobacco companies for helping me in assimilating Primary and Secondary datas.

Moreover, I express thanks to Mr. Bed Prasad Niraula and Mr. Sandeep Gartaula, who technically supported me in arrangement of the research, usage of analytical software to highlight on critical issues of the study. In the mean time, the completion would be impossible without generous support of Mr. Amrit Pradhan and Mr. Harish Moolwani, Ideal Computers, Raja Park, Jaipur for completing this research paper as a thesis.

My word of appreciation goes to my wife Mrs. Samjhana Khanal Gadtaula and son Neshan Gadtaula for managing the household affairs efficiently during the period of my study. I simply cannot conclude without expressing my heartfelt debt to my parents Shree Indra Bilash Gadtaula and my mother Smt. Man Kumari Gadtaula, whose blessings enabled me to complete the study.

Date: 21st March 2012

Keshav Prasad Gadtaula
Researcher
Deptt. of Accountancy & Business Statistics
University of Rajasthan, Jaipur (India)

Executive Summary

Capital Structure is equally significant to private and public companies -be it manufacturing or non-manufacturing. Similarly, the optimum capital structure is achieved only when long term debt and equity capital are effectively and efficiently mixed up. In the context of Nepal and India, most of the manufacturing companies rely heavily on debt contrary to service industries that prefer equity than debt. Moreover, Multinationals focus on long term borrowing primarily through FDI. Indian firms regard internal equity (retained earnings) as preliminary, then debt and finally the external equity financing. Considering the capital structure of Nepalese firms, they accompany high levered policy; however the long-term debt ratio is significantly low. The signs of estimates suggest that both pecking order and trade-off theories are at work in explaining capital structure of Nepalese companies. It can thus, be said that there exists similar pattern of capital structure between Nepalese and Indian manufacturing firms but the optimum utilization of Indian firms are relatively very much better in comparison to Nepalese one. In the mean time, various statistical, econometric tools and methods have been applied for meaningful interpretation and results. For drawing the conclusions, null hypothesis has been formulated and tested by the method of student –'t' values. Similarly, financial ratio, percentage analysis and factor analysis have been computed and interpreted for clear picture of capital structure management of tobacco industries in Nepal and India. The research design approach uses descriptive statistics and econometric models along with inferential analysis. More precisely, it also examines the selected variables of tobacco companies through correlation and regression, inferential analysis

like t test, F test and chi-square test along with Durbin Watson test, co-integration test and chow breakpoint test.

Acronyms

IMF	:	International Monetary Fund
NI	:	Net Income
NOI	:	Net Operating Income
EBIT	:	Earning Before Interest & Tax
EPS	:	Earning per share
WTO	:	World Trade Organisation
LPG	:	liberalisation, Privatisation, Globalisation
ITC	:	Indian Tobacco Company LTD.
GPI	:	Godfrey Philips India ltd.
JCF	:	Janakpur Cigarette Factory ltd.
Surya Nepal	:	Surya Nepal (Tobacco-company) Pvt. Ltd.
WACC	:	Weighted Average Cost of Capital
FMCG	:	Fast moving consumer goods.
et al	:	and others`
FNCCI	:	Federation of Nepalese Chamber of Commerce & Industries.
C-M	:	Commodity into money
WHO	:	World Health Organisation
GDP	:	Gross Domestic Product
TDC	:	Tobacco Development Company
C.V.	:	Coefficient of variation
S.D.	:	Standard Deviation
d.f.	:	Degree of freedom
ROCE	:	Return on shareholder equity
ROE	:	Return on equity
ROA	:	Return on Assets
USA	:	United States of America
UK	:	United Kingdom
G-7	:	Group of Seven countries
MT	:	metric tone
TOBACCOFED	:	The National Cooperative Tobacco Growers' Federation Ltd

Rsq	:	Is the coefficient of determination for the regression
FCI	:	Facility Condition Index
LTDR	:	long term debt ratio
TDR	:	Total debt ratio
SE	:	standard error of estimates
TANG	:	Tangibility of Assets
BRISK	:	Business Risk
LIQUID	:	Liquidity of the Company
PROFIT	:	Profitability
GROW	:	Growth of Assets and sales
NTDS	:	Non Debt Tax Shield
D W	:	Durbin Watson
SANS	:	Selling, Distribution expenses & Administrative
LI	:	Log likehood
V_u	:	Value of unlevered firm
V_L	:	Value of levered firm
SIZE	:	Natural log of Total Sales
RISK	:	The variation in the EBITD
β	:	Coefficient of Independent Variable (IV)
E_L	:	Residual

Table of Contents

LIST OF TABLES

LIST OF CHARTS AND GRAPHS

Chapter-1
Introduction

CHAPTER-ONE
INTRODUCTION

1.1 Visionary Approach:

Capital structure is a major and crucial function of financial management, basically concerned with examination of long term sources of funds comprising of two essential terms i.e., capital and structure. The funds that are accumulated from numerous sources for mobilization of resource are called capital. While, the term, structure is the management of capital in various combinations to gain productively. It is also a part of financial Structure. Capital structure of a company is known as financial plan which refers to the composition of long term sources of funds such as long term debt, equity capital, preference share capital and reserve and surplus. On the other hand, financial structure also refers to the proportionate amount of long term debt, preferred stock and equity capital including reserve and surplus, current liabilities and provision (Myer 1972: 318).[1] Thus, Capital structure and financial structure is often used interchangeably though they mean to differ in some aspects.

Since the 1st decade of 20th century, there is the starting phase of the industrial revolution, meanwhile, the capital structure has been determined as a prominent factor in playing a vital role for industrial development hereby influencing the shareholder's return and risk and market value of share. However, some of the companies do not prepare plan and design their capital structure and consequently they bear losses.

The capital structure decision can directly affect the value of firm either by changing the expected earnings or the cost of capital or by both. The optimum capital structure is obtained when the market value per share is maximum or the average cost of capital is minimum. (Panday, 1999: 258)[2]

Capital structure is the product of the market discipline and optimum capital is based on the value of company. The value of company is based on the prevailing capital market price of the securities of company. The price of the securities in the function of expected income and required rate of return. Furthermore, required rate of return of investors is determined upon risk free rate of return and risk premium, whereas risk premium is compensation for the risk involved in investment. Keeping in mind all these, the challenge for financial manager rests upon understanding how to measure and evaluate leverage when attempting to create the best optimum capital structure. The optimum capital structure is the combination of debt and equity that maximizes the total value of the firm or minimizes the weighted average cost of capital. Ezra Solomon delineates optimum capital structure and its implications as under:

> "Given that a firm has a certain structure of assets, which offers net operating earnings of given size and quality, and given a certain structure of rates in the capital market. Is there some specific degree of financial at which the market value of the firm's securities will be higher (or the cost of capital will be lowers) than at any other degree of leverage."(1963:63).

More often, Capital structure is confused with capitalization. But they define themselves on contrary, capitalization is defined on quantitative aspect of financial planning as it refers to the total amount of securities issued by a company, while capital structure is concerned with qualitative aspect referring to the kind of securities and the proportionate amount that make up capitalization (Upadhaya, 1985:799)[3.]

Though mentioned earlier, about the importance of optimum capital structure, the principles vary and is meant to define capital structure in different Perspective and is not unanimous amongst propounders. Various traditionalists have theorized NI approach, NOI approach, EBIT – EPS analysis cash flow analysis, MM approach, Pecking order theory and Agency cost theory to decide about a company's capital structure.

Thus, Capital structure decision is a significant managerial decision which influences the shareholder's return & risk. Consequently, the market value of the share may be affected by the capital structure decision subsequently; whenever funds have been raised to finance investments a capital structure decision is involved. (Panday, 1999: 574)[4]

In General, capital structure is broadly dissipated in two major constituent: Debt and Equity. Companies with no debt is said to have an all-equity capital structure. Since most has capital structure with debt & equity elements, the financial manager is highly concerned with the effects of borrowing. If firm is making money on its borrowing the shareholders are realizing higher earnings per share than in absence of debt. (Hampton, 1998 : 166)[5]

In Due course, the choice of the composition of debt and equity is made after a comparison of certain attributes of each category of internal factors related with the firm's operations and of external factors that can voluptuously affect the firm. (Hampton, 1998 : 33) [6] A great deal of controversy has developed over whether the capital structure of a firm, as determined by its financing decision affects its overall value. Traditionalists argue that the firm can lower its cost of capital and increase market value per share by the judicious use of leverage. Modigliani & miller, on the other hand, argue that in the absence of taxes and other market imperfections, the total value of the firm and its cost of capital are independent of capital structure . This position is based on the notion that, there is a conservation of investment value. (Van Horne, 2000 : 276)[7]

Thus, capital structure is only a part of the financial structure representing long term or permanent sources of its financing. Moreover, Capital structure decision in relevant to the industry. The triumph of business concern relies largely upon effective capital structure management.

1.1.1 Capital Structure: Indian and Nepalese Perspective

The importance of capital structure is found high up in either country since its liberalisation. Before 1980s Indian financial managers courted debt due to its low cost, tax advantages and the complicated procedures to be observed in garnering equity capital. The substitutability of short term debt for long term loan was another attraction. However, with the waves of

liberalization, privatization and globalization sweeping the capital market in recent years, the corporate world has started wooing equity capital in a big way. The internal debt of India is increasing year after year at 34.7 % internal debt is observed in 2010/11 whereas external debt burden is declining as the statistical figure shows that 2.1 % external debt situation is maintained during 2010/11.(Economic survey, India, 2010/11:59).The arrival of a matrix of new financial instruments such as commercial papers, asset securitization, factoring and forfeiting services, and the market related interest rate structure and their stringent conditions for lending, force modern enterprises to court equity finance. In the study conducted by Chhabi Majumdar in 1992 for his Doctoral Thesis titled, Borrowing as a Source of Financing Working Capital in The Corporate Sector in India: An Empirical Analysis" on Working Capital Financing Sources of Indian Corporate before liberalization, for the period 1981 to 1990 **(Panigrahi, 2010 : 283-296)[8],** concluded that the working capital of each firm is constituted by several types of sources like bank borrowings, public deposits, trade credit, long-term borrowings and equity capital. At the initial stage of a firm, fixed assets as well as current assets have to be financed by this equity capital, since other sources may not be easily available at that time. Subsequently, when the firms get momentum, several lenders may stretch their hands for advancing loan, but the importance of equity capital does not end altogether. On the ground of stability and security, each firm is to maintain "equity cushion" throughout its life time. In view of

this, it has been deduced in his study that there is need for financing working capital from various sources.

Until the early nineties, corporate financial management in India was a relatively drab and placid activity. There were not many important financial decisions to be made for the simple reason that firms were given very little freedom in the choice of key financial policies. The government regulated the price at which firms could issue equity, the rate of interest which they could offer on their bonds, and the debt equity ratio that was permissible in different industries. Moreover, most of the debt and a significant part of the equity were provided by public sector institutions. Gradually, with rising globalization and liberalization, the market capitalization and capital structure perception has changed drastically. The Existing Financial market scenario is relied upon Internal Equity and the Debt financing rather than equity. Most Manufacturing companies rely heavily on debt, on contrary to Service Industries who prefer Equity than debt. Moreover, Multinationals focus on long term borrowing primarily. In gist, Indian Firms regard internal Equity (Retained Earnings) as Preliminary, then debt and finally the External Equity Financing.

Nepal is one of the least developed countries, which lies between two emerging countries of Asia – China and India. Nepal is committed to obey the principles and approach of liberalization, Privatization and Globalization (LPG) as the Himalayan countries received the membership of the World Trade Organization (WTO) on April 23rd 2004. The Integration of Nepalese economy into the global economy through the platform of

global liberalization and privatization can be specified as the landmark event for the Nepalese economy. To promote the private sector in the production management through the liberal market economy and the market forces can be stated as the basic pillar of promoting the globalization. The globalization produces an environment for the Nepalese producers to enhance their competitive strength in the global market. The different potential Nepalese products can have a good scope and market facility in the various corners of the developed and the developing world. However, any slackness in efficiency management and managerial activities will cause a big damage to the Nepalese economy. There is ample scope for Nepal to reap the maximum possible advantage from the globalization by supplying the Nepalese potential output in the global market and materializing the concept of technology transfer in the favor of Nepalese economy. The situation, therefore, demands that the Nepalese planners should gear up the strategies to translate the benefits of LPG in the Nepalese soil in the years to come.

The national scenario of the foreign and domestic loan shows that, the burden of domestic loan is higher than that of the foreign loan as the statistical data shows that foreign loan increased by 4.3% in 2009/10 whereas the domestic loan could be recorded 11.5 % during the same period in Nepal.(Economic survey ,Nepal 2010/11:14)However the dependence of Nepal the foreign grants has increased significantly as the numerical data shows that 14.8 % of total government expenditure was covered by the foreign grants during FY 2009/10,(Economic survey, Nepal

2010/11:14) which is supposed to be the sizeable total by any standard for least developed country like Nepal. Considering the capital structure of Nepalese firms, they accompany high levered policy; however the long-term debt ratio is significantly low. Assets structure and size are observed positively related to leverage where as liquidity, risk, growth, non-debt tax shield are negatively related to leverage. The signs of estimates suggest that both pecking order and tradeoff theories are at work in explaining capital structure of Nepalese companies. Also, the macroeconomic factors GDP, inflation and capital market influence in firm's capital structure decisions. The study of properties of the portfolio shows that at the lower level of leverages, firm tends to employ more short-term debt than long-term debt and firm shifts to long-term debt from short-term debt in respect to increasing leverage ratio. The moderately levered firm are highly profitable than less levered and highly levered firms. It can thus, be said that there exists similar pattern of Capital structure between Nepalese and Indian manufacturing firms.

1.2 Statement of the problem:

The global financial crisis has restricted the pace of the development of manufacturing industries in the global economy. The Asian economy is affected due to such a vulnerable situation of the manufacturing industries. India is fully integrated with the world economy and thereby the negative impact of global financial crisis was also observed in the case of Indian manufacturing industries in general and tobacco industries in particular. Nepal is a land locked least developed economy, which lies in between two

emerging countries of Asia – China and India. The advantage of Nepal is that two big markets are available in its neighbouring economies. Manufacturing industries are considered as appropriate instruments for the government to carry out its policies and development activities in the country. Nepal and India have nurtured the manufacturing industries to carry out their policies and developmental activities.

Tobacco industries are rank sources of revenue generation to the government of Nepal and India. However, Nepalese tobacco industries could not help targeted revenue to the government due to socio economic and managerial crisis along with the internal conflict of the country. Nepalese industries are facing financial crises, marketing problems and lockout, strike and labour instability problems. Moreover, India is also not free from these problems due to tremendous financial stress. The observation and evidences show that, the improper management of capital structure of finance is utilized in both countries of tobacco industries. The demands of the goods of these industries are in increasing trend and increasing expectations on these industries but their operational aspect has not been satisfactory. Most of the tobacco industries are facing losses year after year. These situations clear that proper development of the economy cannot be possible due to the existing business and managerial problems along with the impact of global financial crises .

It is quite essential that some organizations should keep proper care about how the financial position in the market place can be put forward for creating value of their shareholders. Any organization is established to earn

reasonable profit by producing goods and services as per social need. For the achievement of such objectives, the organization must operate effectively and efficiently. For this, management skill is required in different activities of the organization like financing, investment, production and operation, marketing etc. Every organization requires different types of real assets to carry on the business smoothly. It should either sell its financial securities or take loans from bank or other financial institutions, in form of either debt or equity to meet its sound capital structure management. Sound capital structure management is the heart of the efficient management. But, most of the industries have been seen lacking sound management. So, the problem of this study is to look into the problem of the capital structure of the manufacturing industries in Nepal and India. Optimization of the capital structure is not relevant in the industry but decision, by and large. The product of the government decision is relevant to the industry. Unsound capital structure management of industry is national burden and demoralizes both working force and management. However, the following sensitive issues have been formulated to seek their solutions in this study:

a. Has the sizeable amount of long term debt improved the production management of tobacco industries in Nepal and India?
b. Is the long term debt management a source of income generating employment through tobacco industries in both countries?

c. Have qualitative and quantitative factors affected the composition of capital structure and cost of capital of tobacco industries in both countries?

d. What significant determinants have guided the capital structure and performances of tobacco industries?

e. Which elements have produced the positive and negative impact on risk and return position of the tobacco industry's?

f. Whether the heavy burden of debt has caused any unfavourable impact on profitability and economic status of tobacco industries?. If yes,

g. What policy measures should be adopted by tobacco industries of Nepal and India to improve the profitability and economic situation?

These are some of the fundamental issues, which urgently require proper treatment by the leading intellectuals and scholars of national and international communities. The current study focuses on these basic issues related to capital structure of tobacco industries along with the amicable solution to enrich the healthy development of financial structure of related industries in the days to come. The current study therefore focuses on the comparative study, which is a unique attempt of inter–country analysis between the private and public tobacco companies of Nepal and India.

1.3 Need and justification of the study

The world economy revives slowly and gradually after the global financial crisis. The economic growth rate of world economy is improving and is maintaining 4.5% of average annual growth rate in recent years. The

emerging and developing countries have performed better than the world economy as the statistical figure reveals that 7.5% of growth rate could be maintained in 2010. India is the consistent performer in maintaining the growth rate as Indian economy grew up by 10.4% in terms of economy growth in 2010. However, due to political instability, Nepal is lagging behind in comparison to emerging developing countries and Indian economy as Himalayan country could maintain only 4.6% of annual economic growth rate in 2010.(IMF, 2011:2)[9]

The manufacturing industry is playing important role in the economy for making infrastructure framework for economic development of the countries. Nepalese and Indian tobacco industries have a long history. Most of the people are employed in the industries. But, during the recent years, most of the manufacturing industries are suffering from increasing losses each year and similarly their financial performance is not showing satisfactory result. The deteriorated financial condition is so severe that the rational of existence and expectation of people are hopeless. To overcome their major problems, the study of proper utilization, acquisition and mobilization of capital in different resources is essential to increase the value of firm and decrease the cost of capital, simultaneously to strengthen their financial position, increase per capita income, increases EPS and domestic product for economic prosperity and upliftment of country. In this way the capital structure management is a critical aspect, which can cause financial disbalance of an industry. So this study undertakes to evaluate capital structure management of manufacturing industry.

The flexibility is one of the most serious considerations in setting up the capital structure. It also depends on the company's debt capacity. Marketability does not influence the initial capital structure but it is an important consideration to decide about the appropriate timing of security issue. Therefore, this study will have both academic as well as practical significances.

i. The primary purpose of measuring the capital structure is its use as a financial standard for evaluating the investments of industries.

ii. The debt policy of a firm is directly influenced by the cost consideration. In designing the financial policy, the firm aims at lowering down the overall cost of capital.

iii. This study is expected to provide a useful feedback to the individual's institution and also to the policy maker of the firm.

However, this study needs to recognize the major problems of capital structure and the suggestive recommendation to cure the financial illness of manufacturing tobacco industry.

1.4 Objectives of the Study

The basic objective of this study is to analyse, compare and observe the achievement of optimum capital structure of Nepalese and Indian Tobacco industries by making inter firm and inter country analysis of capital structure and to make important suggestions for their improvement. The Optimum capital structure is maximization of the value of the tobacco industries and minimization of the overall cost of capital. The optimum

capital structure is achieved only when long term debt and equity capital are effectively and efficiently mixed up. Under the guidelines of such leading objective, the following specific objectives are set to achieve optimum capital structure of tobacco industries in Nepal and India.

a. To analyze the inter-firm and inter country comparison of capital structure.

b. To analyse the basic determinants of capital structure and depict the financial status.

c. To evaluate the size, growth, efficiency, profitability, sensitivity, composition of Inter- industries' capital structure position.

d. To analyze the composition of long term debt and debt service capacity of Tobacco Industry.

e. To gauge the behavioural relationship between debt and equity capital

f. To focus on the external and internal factor affecting the capital structure management.

1.5 Scope of the study

Capital structure is important in all organization. It is to maximize wealth by increasing the stock price and to minimize the overall cost of capital. If any company set the different objective, they should not exclude any risk factor that affects the optimum capital structure. Furthermore, they should analyze the risk factor to establish sound capital structure. The usefulness of capital structure is equally significant to private and public companies either by manufacturing or non manufacturing. Therefore, the

scope of this study is related to the manufacturing tobacco industries of Nepal and India. Amongst them, four tobacco Companies have been taken as sample for the study. These are Surya Nepal pvt.ltd, Janakpur cigarette Factory, Indian (previously Imperial) tobacco company ltd, India and Godfrey Philips India Company Ltd, India.

Similarly, the current study focuses on capital structure of tobacco industries of Nepal and India which will be an aid in income generating employment in the context of Nepalese and Indian economies mainly through scientific management of tobacco industries. If the tobacco products are mostly exported to the foreign soil, the motive of poverty alleviation programme would also be supported in both the countries. Similarly, tobacco industries also promote the existing situation of trade and development of both countries. Tobacco industries promote agricultural development and tax revenue enhancement in both the countries. To sum up, tobacco industries would nurture the economic status of Nepal and India in the years to come. All these components create a wide and comprehensive coverage and scope of the current research study in global context in general and Nepalese and Indian situation in particular.

1.6 Hypothesis

The following hypothesis has been formulated and tested to achieve the objectives.

1. The capital structure of the Indian system of tobacco industries is based at scientific and systematic scale.

2. The return of capital structure is productive in the private sector of tobacco industries of Nepal and is more productive in the public sector tobacco industries in India.
3. The long term debt has enhanced the production and marketing of Indian tobacco industries and the long term debt is not properly utilised in the context of Nepalese tobacco industries.
4. There exists adverse relationship between the debt and equity financing of tobacco industries in Nepal and India.
5. The exogenous factors have affected the capital structure management of tobacco industries in Nepal and India.

1.7 Organization of the study

This study on the capital structure of tobacco/ cigarettes industries of Nepal and India has been divided into six different chapters. They are introduction, review of literature, profile of tobacco companies, research methodology, analysis and interpretation of data and summary, conclusions and recommendation.

The first chapter is introductory part. The introduction parts contain introduction, capital structure of Nepal and India, statements of problems, need and justification of the study, objectives of the study ,Scope of the study , limitations of the study, hypothesis of the study, research questions, scheme of the study and terminology and abbreviation of the study.

The second chapter is the profile of the study. This chapter considers what is tobacco and history of tobacco product, WHO report on

tobacco use, tobacco companies in India, short profile and their export oriented product of India and Nepal i.e. ITC, GPI, JCF and Surya Nepal.

The third chapter is review of related literature. This chapter includes concept of capital structure, conceptual frame work, theory of capital structure, net income approach, net operating income approach, traditional approach, Modigliani – Miller approach, pecking order theory, debt capacity theory, agency cost theory, asymmetric information theory, signalling effect theory, emerging theoretical consideration, Naive theory, optimum capital structure, determinants of capital structure, cost of capital, concept of financial leverage, efficiency of capital structure, review of empirical works up to 2009.

The forth chapter is Research Methodology. This chapter includes a glance on research methodology, research design, sources of data, data gathering instruments, data collection procedure, data processing procedure, universe, population and sample of the study, method of data analysis, factor analysis, model estimation, econometric analysis, other analytical tools, statement of hypothesis, test of hypothesis and level of significance.

The fifth chapter is appraisal of capital structure of Tobacco Company. This chapter considers visionary approach, analysis of operational aspects which includes size of equity debt and capital turnover, growth of equity and debt, sensitivity of major business factor of capital structure, efficiency of capital structure, composition of capital structure, debt profitability of capital structure, reliability test between company of

Nepal and India, determinants of capital structure ,behavioural analysis of capital structure and interrelationship between behavioural and operational aspects.

The sixth chapter is summary conclusions and recommendations. This chapter includes summary of the study, major finding and policy recommendation.

1.8 Limitations of the study

This study is not free from fallacy and it is a difficult work which requires deep and vast study about related problems to investigate the solution. Various limitations should be set in mind by a researcher for proper solutions. This study can't cover all aspects of tobacco industries due to certain time constraint and other related problems .However the current research study is based on the following limitations.

1. This study is based on only the ten years financial statements from the Fiscal year 1998/1999 to 2008/2009.
2. This study has been conducted to find out the capital structure position of tobacco industries up to 2008/2009.
3. This study investigates the comprehensive financial structure rather than technical aspects.
4. The Inflationary effects on the products have not been included in this study.
5. This study is primarily based on secondary data. However, primary data have also been used to justify the finding of the study.

6. The accuracy of data collected from behavioural analysis depends upon the biasness of the respondents to questionnaire.

7. The study is confined towards the capital structure situation of two tobacco industries (ITC, GPI, JCF, Surya Nepal) of Nepal and India each.

8. The limitation of statistical tools and econometrical tools used in the study are also the limitation of this study.

9. The industry factors, macro environment factor and inter country factors are not considered in the analysis as they also serve an impact on the analysis.

10. Some of the comparative issues such as capital structure and cost of capital, capital structure and profitability, capital structure and value of firm are not incorporated in the study.

1.9 Terminologies of the study

The following terms and abbreviation are used in this research work frequently. So they have been defined to avoid ambiguity for the purpose of the study.

Terminologies

1. Capital structure: It is the product of market discipline which influences the manager for preparing plan for sources of funds for the business.

2. Financial structure: It is the mix of all items that appear on the right hand side of the company's balance sheet.

3. Optimum Capital Structure: Optimal capital structure is the combination of debt and equity that maximizes the total value of the firm or minimized weighted average cost of capital.

4. Pecking order principle: retained earnings are the preferred source of financing followed by debt, and then common stock in this principle.

5. Agency costs: The potential difference in price is the cost of the conflict to the owners, known as agency costs. Agency costs are those costs which defines administration, structuring and enforcing of any contracts

6. Naive Theory: The naïve theory assumes that the cost of debt and the cost of equity remain stable,

7. Probability of Bankruptcy: It is the probability that the firm's cash flow is not sufficient to meet its financial obligation.

8. Financial structure: It refers to the way the firm’s assets are financed. It includes short- term debt and long term debt as well as shareholder’s equity.

9. Accounting Transparency: Explaining Credit Spreads in the short end.

Chapter Summary

The chapter incorporates the explanation of the financial components of company i.e. the capital structure, tendency of Indian and Nepalese source of business finance and the like. These materials have been sorted from the sources below.

1. Myer, J.N., Financial Statements Analysis, Prentice Hall of India pvt.Ltd.4th ed.1972, p. 381
2. Pandey, I.M. Financial Management, Vikash Publishing House, New Delhi,1999.p.258.
3. Upadhaya, K.M., Financial Management, Kalayani Publisher, New Delhi, 1985. P. 799.
4. Pandey, I.M. Financial Management, Vikash Publishing House, New Delhi, 1999.p.574.
5. Hampton, J.J. Financial Decision Making, Prentice hall of India, new Delhi, 1998.p. 166.
6. Van Horne, James C .Financial Management and Policy, 11th Ed. prentice hall of India New Delhi, 2000.p.276
7. Panigrahi, Ashok Kumar. Capital Structure of Indian Corporate: Changing Trends, Asian Journal of Management Research, 2010,pp 283 -296.
8. IMF, Economic Outlook, 2011 .P 2

9. Solomon, Ezra, and Pringle, J.J. An introduction to Financial Management, Prentice Hall of India, Pvt. Ltd. New Delhi, 1978 p. 53

10. Economic Survey 2010/2011, India. Ministry of Finance, p 59

11. Economic Survey, 2010/2011, Nepal. MOF, p 14

12. Tobacco Industry contributes highest amount of revenue to the government through excise duty and corporate tax.

Chapter-2
Profile of the Study

CHAPTER-TWO
PROFILE OF THE STUDY

2.1 Visionary Approach

This chapter of the study purposes to explore the history of tobacco and selected tobacco industry of Nepal and India. Tobacco industry plays a vital role in the economic development of the country. Therefore, history of tobacco and a short profile of selected Tobacco Manufacturing Companies of both Nepal and India have been discussed in this chapter.

2.1.1 Tobacco

Tobacco is an agricultural product processed from the leaves of plants in the genus *Nicotiana*. It can be consumed, used as an organic pesticide and, in the form of nicotine tartrate, used in some medicines (Encyclopaedia Britannica, inc., 2011)[1]. It is most commonly used as a recreational drug, and is a valuable cash crop for countries such as Cuba, China , the United States, India and Nepal etc..In consumption, it most commonly appears in the forms of smoking, chewing, snuffing, or dipping tobacco, or snuff. There are more than 70 species of tobacco in the plant genus *Nicotiana*. The word *nicotiana* (as well as *nicotine*) is in honour of Jean Nicot, French ambassador to Portugal, who in 1559 sent it as a medicine to the court of Catherine de Medici (Clonio 1550:vol 13- 509. Heading, 1550-1575 tobacco .Europe)[2]

Because of the addictive properties of nicotine, tolerance and dependence develop. Absorption quantity, frequency, and speed of

tobacco consumption are believed to be directly related to biological strength of nicotine dependence, addiction, and tolerance (Tobacco organization retrieved 2008: 9-18)[3]. The usage of tobacco is an activity that is practiced by some 1.1 billion people, and up to 1/3 of the adult population. (Saner, et al :26)[4] The World Health Organization (WHO) reports it to be the leading preventable cause of death worldwide and estimates that it currently causes 5.4 million deaths per year.(WHO, 2008: 8)[5]Rates of smoking have leveled off or declined in developed countries, but continue to rise in developing countries.

Use of tobacco is said to have been spread throughout Europe by 1600 A.D. By the eighteenth century it has been reported that tobacco was planted in large quantities by the Indians, and its use from them brought into Europe. Europe's acceptance of tobacco was nearly universal. It was smoked, chewed, and used as snuff ever since[6] (James, I., 1604)[6]

Since 1613, when John Rolfe introduced a successful experiment in tobacco cultivation in Virginia (Morison, 1965:52)[7] the leaf has assumed major social, industrial, economic and medical implications. Tobacco associated with smoking of cigarettes, and to a lesser extent, of pipes and cigars-has been popular at times for both snuffing and chewing. Indeed, until about 1870 cigarettes were relatively rare in the United States, and almost all tobacco consumed domestically was chewed during the mid-19th century (Gottsegen, 1940: 9-10)[8].

Seventeenth century quality control laws proved no more successful in the effort to relieve the depression of the industry. Renewed efforts were

made in early years of the next century, however, In 1713; the Virginia House of Burgesses established a warehouse system to enforce tobacco inspection. Forty public warehouses were created. Strong opposition to the system led the Privy Council to disallow the act in 1717, but the ensuing depression of the 1720's was convincing evidence of the need for relief. Accordingly, the system was reinstated with British approval in 1730 with public warehouses and official inspectors (Middleton, 1953: 93-121)[9]

2.1.2 WHO Report on tobacco use

The WHO report on the global tobacco epidemic notes that in the United States in 2008, the economic costs related to tobacco use approximated US$ 193 billion per year. In China, the economic costs of smoking were estimated to be US$ 5.0 billion in 2000, equivalent to US$ 25.43 per smoker over the age of 35 (WHO Report,2008)[10].However, the Nepalese and Indian government policy to regulate the tobacco use is relatively flexible. Therefore, the chances of the tobacco companies in Nepal and India are highly prospective in terms of production and export.

2.1.3 Tobacco Promotion Policy Made by Government of India and Nepal

There have been numerous interventions made by government for promoting tobacco industries in Nepal as well as India. In case of India, various acts such as Tobacco Cess Act, along with numerous provisions relating to subsidies, reduction in taxes etc has been efforted for promotion of these companies. Also in Nepal, government has been implementing strategies in year plan which has further assisted in protection of these

companies. Further, government has invested in JCF for promoting tobacco industries. Further, to protect tobacco promotion in Nepal, Nepalese government allows establishment of manufacturing unit of tobacco for exports only. However, local trading has been discouraged.

2.1.4 Tobacco Companies in India

After the independence of India in 1947, the Indian central tobacco committee (ICTC) established the central tobacco research institute for undertaking research on cigarettes and the Lanka type of tobacco. Later, four research stations were established in Tamil Nadu (in 1948 for cigarette, cheroot and chewing tobacco), Bihar (in 1950 for hookah and chewing tobacco), West Bengal (in 1952 for wrapper and hookah tobacco) and Karnataka (in 1957 for FCV tobacco). Further in 1956, the tobacco Export Promotion Council (TEPC) was established to support, protect and promote the export of tobacco.

In 1966, The Directorate of Tobacco Development was established to gather information on tobacco production, trade, marketing, export and consumption. Thereafter 1975, the tobacco Board was constituted under Tobacco Act 1975, replacing the TEPC. The tobacco Board is responsible for regulating the cultivation, production, marketing and export of FCV tobacco.

In 1980- 81, the agricultural Prices Commission recommended a minimum support price for FCV tobacco grown in light and black soils.Similarly,1983 The National Cooperative Tobacco Growers' Federation Ltd (TOBACCOFED) was established by the Ministry of

Agriculture and Rural Development to promote the production and marketing of non – FCV tobacco in India. However, TOBACCOFEF has been defunct for a long time. Auction sale of FCV tobacco was introduced for the first time by Tobacco Board in Karnataka and Andhra Pradesh in 1985. (Reddy and Gupta, 2002:1)

India has a short history of tobacco-related legislation. The first national level bills were introduced not to curtail but to build a foundation for the tobacco industry and enable it to be competitive on the international market. Early attempts to enact tobacco control legislation were insufficient and only recently has there been significant impetus to come up with a multifaceted national control measure. Pro-tobacco legislation dates back to 1975 with the Tobacco Board Act, introduced to develop the tobacco industry. It facilitated the regulation of production and curing of tobacco, fixed minimum prices, and provided subsidies to tobacco growers; the objective was to develop the Indian tobacco market and make the industry export competitive. Similarly, the Tobacco Cess Act of 1975 was enacted to collect duty on tobacco for the development of the tobacco industry. Anti-tobacco advocates have criticized these Acts because they nurtured the tobacco industry through subsidies and loose export policies. (WHO, Bulletin 81, 2003:49-50)

India is the largest producer and exporter of tobacco in the world. Production reaches 700 million kilograms annually. This, in part, can be attributed to a varied climate across the country, which allows the

consistent availability of a wide range of tobacco for export throughout the year.

Like the Indian government did for alcohol companies in 2007, it may be freeing the tobacco industry from license norms and allowing international tobacco companies to set up shop in India. The license norms don't allow international companies to directly or indirectly have stores in India. Also, foreign investment in tobacco processing is prohibited, as well as in cigarette manufacturing. By 21 June 2011, 25 companies are registered in India in tobacco sector[11].Some of the major exporting leading tobacco companies are:

- Indian Tobacco Company (ITC) Limited
- Kanhayya Tobacco Co. Ltd
- Kothari Products Limited (KPL)
- M.R Tobacco Pvt Ltd
- Sapna Enterprises
- Sri Jayalakshmi Tobacco Co Ltd
- Tej Ram Dharam Paul
- GPI LTD.

2.1.5 Selected tobacco companies of India for this study

2.1.5.1 ITC Limited

ITC was incorporated on August 24, 1910 under the name Imperial Tobacco Company of India Limited. As the Company's ownership

progressively Indianised, the name of the Company was changed **from Imperial Tobacco Company of India Limited to India Tobacco Company Limited in 1970** and then to **I.T.C. Limited in 1974**. In recognition of the Company's multi-business portfolio encompassing a wide range of businesses - Cigarettes & Tobacco, Hotels, Information Technology, Packaging, Paperboards & Specialty Papers, Agro-business, Foods, Lifestyle Retailing, Education & Stationery and Personal Care - the full stops in the Company's name were removed effective from September 18, 2001. **The Company now stands rechristened '**ITC Limited**'.**

The Company’s beginnings were humble. A leased office on Radha Bazar Lane, Kolkata, was the centre of the Company's existence. The Company celebrated its 16th birthday on August 24, 1926, by purchasing the plot of land situated at 37, Chowringhee, (now renamed J.L. Nehru Road) Kolkata, for the sum of Rs 310,000. This decision of the Company was historic in more ways than one. It was to mark the beginning of a long and eventful journey into India's future. The Company's headquarter building, 'Virginia House', which came up on that plot of land two years later, would go on to become one of Kolkata's most venerated landmarks.

ITC Limited is the public conglomerate company which headquarter is in Kolkata, India. Its turnover is $6 billion and a market capitalization of over $30 Billion. The registered office of the company is in Kolkata. It started off as the Imperial Tobacco Company, and shares ancestry with Imperial Tobacco of the United Kingdom, but it is now fully independent, and was rechristened to Indian Tobacco Company in 1970 and then to

I.T.C. Limited in 1974 .It employs over 26,000 people at more than 60 locations across India. ITC Limited completed 100 years on 24 August 2010.

The company was founded as *Wills, Watkins & Co.* by Henry Overton Wills I and his partner Watkins, who opened a shop in Castle Street, Bristol in 1786. After the retirement of his partner in 1789, it became *Wills & Co.*

In 1826 his two sons, William Day Wills and Henry Overton Wills took over the company. The company pioneered canteens for the workers, free medical care, sports facilities and paid holidays. In 1830, the company was renamed W.D. & H.O. Wills. Their first brand was *Bristol*, made at the London factory from 1871 to 1974. *Three Castles* and *Gold Flake* followed in 1878 and *Woodbine* ten years later.

ITC Limited is one of India's highest ranked privately owned companies. Forbes Magazine rated it among the world's best big companies; with ITC ranking third in those same privately owned companies for pre-tax profit.

In 1901 Sir William Henry Wills et al. formed the *Imperial Tobacco Company* from a merger of *W.D. & H.O. Wills* with seven other British tobacco companies. Imperial remains one of the world's largest tobacco companies. *Embassy* was introduced in 1914 and relaunched in 1962 with coupons. The last member of the Wills family to serve the company was Christopher, the great grandson of H.O. Wills I. He retired as sales 1969. Besides, they have also penetrated in markets of other FMCG.

ITCs strong presence in Cigarettes

Cigarettes: W. D. & H. O. Wills, Gold Flake Kings, *Gold Flake Premium*, *Navy Cut*, *Insignia*, *India Kings*, *Classic (Verve, Menthol, Menthol Rush, Regular, Mild & Ultra Mild)*, *555*, *Benson & Hedges*, *Silk Cut*, *Scissors*, *Capstan*, *Berkeley*, *Bristol*, *Lucky Strike*, *Players* and *Flake*.

2.1.5.2 Godfrey Phillips India Ltd

Godfrey Phillips India Ltd. (GPI Ltd.) is second largest cigarette maker in India. It is the number one cigarette company in North India and India's number one cigar marketing organization. GPI's headquarter is in New Delhi. GPI has five sales branches in India namely Ahmedabad branch, Mumbai branch, Chandigarh branch, Delhi branch and Hyderabad branch. It has two major manufacturing facilities at Mumbai and at Ghaziabad. As the second largest player in the Indian cigarette industry, their annual turnover exceeds INR 1800 crores (approx. US $369.6 million). GPI owns some of the most popular cigarette brands in the country like Four Square, Red and White, Jaisalmer, Cavanders and Tipper. Four Square is the leading cigarette brand franchise of Godfrey Phillips India, having a strong presence in the northern and western states of India. Major brands in this franchise are Four Square Kings, Four Square Special, Four Square Premier and Four Square Super. Currently the Four Square franchise is growing at the rate of 22% in all of India. This franchise is enjoying the patronage of millions of smokers in India.

As quoted in the brochure of GPI through the internet research,

"Due to this persisting endeavor to excel, innovate and win, we have grown to become one of the largest companies in its class, with sales of over 2,600 crores. Over the years, we have built an extensive network of distributors and retail outlets. We already hold the faith of 500 distributors and have successfully nurtured 800,000 retail outlets, with offices in eight locations across the country. As the second largest player in the Indian cigarette industry, our annual turnover exceeds INR 2600 crores (approx. USD 577.08 million). We own some of the most popular cigarette brands in the country like Four Square, Red and White, Jaisalmer, Cavanders and Tipper. Over the years we have also set our own benchmarks in innovation with revolutionary brands like Stellar, the first slim cigarette and I-gen, the first euro norm cigarette in India".(08.05.2011)

Godfrey Phillips India has two major stakeholders, one of India's leading industrial houses - the K.K. Modi Group and one of the world's largest tobacco companies, Philip Morris. The Company also enjoys a strong backing of over 12,000 shareholders. In 1936, the Comp. was originally established & developed by Godfrey Philips Ltd., London, a publicly owned cigarette & tobacco manufacturer incorporated in U.K. with extensive international operations. The Comp. manufactures & sells cigarettes, smoking tobacco & cigars.

Gradually in 1967, The Comp. made an arrangement with International Tobacco Co. who opened a factory in Northern India to manufacture on the Company's behalf. Upon the merger of D. Marcopolo

and Co. Ltd., with the Company, International Tobacco Co. Ltd., became a subsidiary of Company.

In 1968, Philips Morris International Financial Corporation, a wholly owned subsidiary of Philip Morris Inc., acquired full ownership of Godfrey Phillips limited Philips Morris International, one of five operating companies of P. M. Inc., manufacturers & markets cigarette products through affiliates & licensees throughout the world. The trademarks assigned to the Comp. by Godfrey Phillips Ltd., include 'Cavanders', 'Abdulla', 'De Reszeke', 'Brand Master' & 'Pay Master'.

In 1994, the Comp. launched a new small cigarette forthwith under the brand name Commands' in April. Then in 1995, the Comp. launched a new premium filter cigarette called originals with an imported charcoal filter for first time in the country. It also launched Red and White super 60mm long filter cigarettes. Moreover, in 1996, the Comp. continued to launch new & innovative brands in the market. During the year under report, the Comp. launched a new premium filter cigarette called ORIGINALS with an imported charcoal filter for first time in the country. Besides, they have also penetrated in markets of other FMCG.

GPIs strong presence in Cigarettes

The brands manufactured & marketed by Comp. are Black and White King Size Filter, Four Square King size Filter, Four Square Regular Filter, Cavanders Navy Cut Regular, Red and White, Anand, Leader, Cavanders Filter & Capital. In addition, the Company manufactures and sells Virgin Gold & Philip Gold Cigarette tobacco.

2.1.6. Selected tobacco companies of Nepal for this study

Development planning in Nepal is not new; the First Plan was prepared for the period1956-1961. Besides its basic economic development goals of increasing output, raising living standards of the people, etc., the Plan's tobacco-related objective dealt with increase in tobacco leaf and cigarette production. An agreement between HMG of Nepal and the Union of Soviet Socialist Republic was signed in April 1959 to set up a modern cigarette factory. By 1961 the Janakpur Cigarette Factory also setup Tobacco Research Station in Belachapi, Danusha, to conduct research on Tobacco. Prior to that there was a small factory semi-mechanised and having limited capacity of 300 million sticks per year established in 1948. The government of Nepal felt that the factory had to survive among fierce competition across the Nepal-India border.

Since the First Plan government initiated tobacco cultivation and cigarette production to meet the domestic market although prior to that demand for cigarettes was met by importing cigarettes particularly from India. The government owned and foreign assisted Janakpur cigarette factory came into full operation in January 1965 (2021) during the Second Plan period (1962-1965). The government argued that the cigarette industry in Nepal was set up to meet the demand of the domestic market. During the Third (1965-1970) and Fourth Plan (1970-1975) periods to the government's implied policy was to increase tobacco cultivation and increase cigarette production. In 1972 within the Fourth Plan period Tobacco Development Company (TDC) was established with a view to

meet the tobacco demand of the Janakpur Cigarette Factory. The main objective of the company is to increase tobacco crop production and give economic and technical advice to the factory. From the Fifth Plan (1975-1980) more attention was given to increase tobacco cash-crop production and also to increase the production of manufactured cigarettes. Production of tobacco cash crop was planned to increase to 66.7% by the end of the plan period from 10,662 metric tons in 1974/75 to 17,776 metric tons in 1979/80 .Necessary arrangements were made for chemical fertilisers, improved seeds and more land for cultivation of tobacco. The Agricultural Development Bank gave loans to farmers growing tobacco. The farmers of four districts – Siraha, Dhanusha, Mahottari and Sarlahi in the Terai were encouraged to do tobacco cultivation. Government owned Janakpur cigarette factory is in Dhanusha district and the other three districts are in the neighbourhood. The functions of TDC were further strengthened during the Fifth Plan period. During the plan period the production of Janakpur Cigarette Factory was to be increased from 3 billion sticks in 1974/75 to 4 billion sticks by 1979/80.Although the Fifth Plan document does not mention anything about the establishment of a private cigarette factory, one cigarette factory in the private sector came into existence in 1978. This was the first private sector cigarette factory established in Nepal. The Sixth Plan (1980-1985) carried on with the same plans and programmes with respect to tobacco cultivation and cigarette production as in the Fifth Plan. The Plan assigned Janakpur Cigarette Factory to manufacture 12.467 billion sticks of Cigarettes.

The Seventh Plan (1985-1990) estimated that in its first year there would be 7,000 metric tons of tobacco cash crop production. For the last year (1990) of the Plan period the target was to produce 8,000 metric tons of tobacco cash crops. Tobacco cash crop was to be increased by launching special improved variety of tobacco and regular type of tobacco production. For this farmers were to be trained in cultivating improved variety of tobacco seeds. The area under tobacco cultivation was to be increased from 8,900 hectares in 1985 to 10,000 hectares by 1990. Similarly productivity per hectare was to be increased from 0.76 metric tons to 0.82 metric tons. The Plan assigned Janakpur cigarette Factory to increase cigarette production from 12.4673 billion sticks in 1985 to 17.87 billion sticks in the last year of the Plan. During the Seventh Plan period second private sector cigarette factory (Surya Tobacco Company Pvt. Ltd.) came into existence. This factory was established on1986 with partnership of international tobacco company change Indian Tobacco Company (ITC). Now this company is the biggest cigarette factory in the country. Because of change of politics in 1991 there was a plan holiday for about two years during 1990 – 1992. The Eighth Five-Year Plan began in 1992. Despite various efforts taken by the previous government the review shows that tobacco farming met only 16 per cent demand for cigarette tobacco.

Therefore the Eighth Plan gave special emphasis on the increase of tobacco production for attaining self-reliance in this field. The Eight Plan targeted to increase tobacco farming from 6,320 M tons in 1990/91 to 9,500 M tons by the end of the Plan period so that 55 per cent of cigarette

tobacco demand would be met internally. For this credit facilities were to be provided to farmers and attempts were also to be made to produce low-nicotine cigarettes for export. During the Eighth Plan period a third private cigarette factory was established. The government did not specify in its plan document about the establishment of yet another private sector cigarette factory but it was implicit that the private sector industrial initiative was encouraged. The Ninth Plan (1997-2002), as earlier plans, recognized the contribution made by tobacco crop to the national economy. However, the situation when reviewed found that the production of tobacco and per hectare productivity was both lower than planned. Therefore the Ninth Plan also planned to increase tobacco production by improving farming by using fertilizers and improved variety of tobacco seeds. Reviewing tobacco related policies in every development plan since mid 1950s until 2002 clearly shows that the government's objective has been to increase production of tobacco leaves so that the national market for tobacco demand is fulfilled from within the country. The achievements, however, have always fallen short of targets as the amount of tobacco leaf production has continuously declined over the years. Nevertheless, the production of manufactured cigarettes has steadily increased from 1.8 billion sticks in 1980/81 to about 7 billion sticks by 2000/2001. (Karki, WHO, 2002:14-16,).

Nowadays, Nepalese Tobacco Company produces 2400 MT tobacco per year, which is the moderate cash crop in Nepal (Economic survey 2010/11:112).

2.1.6.1 Janakpur Cigarette Factory Ltd.(JCF)

JCF was established with the financial help of existing government of USSR on 29th Poush 2021 B.S. and incorporated under the company act 2021 B.S. The starting period of authorized capital was 204 lakh. The basic objective of this factory is to attain the self sufficiency in cigarettes supply in order to increase its contribution to the national economy. This factory is direct functioning under ministry of industry, commerce and supply. This factory is one of the largest public enterprises of Nepal. More than 4000 people are working in the factory. Four regional office and 60 branches and sub branch office are functioning in the country. Now, the authorized capital and paid up capital are Rs. 204000000, Rs.40837000 respectively.

JCFs strong presence in Cigarettes

YAK, Gaida, Lahure, Deurali and Upahar brands.

2.1.6.2 Surya Nepal Pvt. Ltd.(Surya Nepal Tobacco Company Pvt. Ltd).

In 1985, ITC set up Surya Nepal Tobacco Co. in Nepal as an Indo-Nepal and British joint venture. Since inception, its shares have been held by ITC, British American Tobacco and various independent shareholders in Nepal. In August 2002, Surya Nepal Tobacco became a subsidiary of ITC Limited and its name was changed to **Surya Nepal Private Limited** (Surya Nepal). The authorised and paid up capital are NPR 1,000,000,000 & NPR 336,000,000 respectively.

Surya Nepal Private Limited (SNPL) is an Indo-Nepal-UK joint venture, which started operations in Nepal in 1986. Surya Nepal is now the

largest private sector enterprise in Nepal and a subsidiary of ITC Limited, India, the balance shares are held by 20 Nepalese individual & corporate shareholders and British American Tobacco (Investment) Limited, UK.

The business of Surya Nepal includes manufacture and marketing of cigarettes and readymade garments in Nepal as well as exports of ready-made garments with a total turnover of over US $100 million.

Surya Nepal's commitment to its corporate vision "enduring value for all stakeholders" has been uncompromising through the years and is reflected in every product, process and service provided by the company. The company was awarded the prestigious FNCCI National Excellence Award during 2007 for being the best-managed corporation in Nepal. The company is also the recipient of various national safety and environmental awards and with our constant focus on systemic work processes, both our cigarette and garment factories are ISO-9001: 2000 certified.

Besides, they have also penetrated in markets of other FMCG. Now, Surya Nepal is the highest rank to provide revenue to the Nepalese government for economic development of the nation.

Surya Nepal's strong presence in Cigarettes

Surya Nepal classic, Khukuri Filter, Sikhar Menthol, sikhar Special Filter – a premium RSFT, Surya, Bijuli Filter – a RSFT.

2.1.7 Conclusion/Finding

Today, India is the largest producer and exporter of tobacco in the world. More than 700 million kilograms tobaccos are produced annually in

India and 2400 MT in Nepal. Tobacco companies of India and Nepal are highly contributed to the national economic development to the government through excise duty and corporate tax. Tobacco products is the cash crops products. Nowadays, some of the major tobacco companies of Nepal and India are highly concern in export oriented business and they also penetrate multiple nature of business i.e. FMCG, Hotels, Paperboards and packaging, agro business Information Company, group company and garments. Nepalese and Indian government policy to regulate the tobacco use is relatively flexible. Therefore, the chances of the tobacco companies in Nepal and India are highly prospective in terms of production and export.

Chapter Summary

The chapter constitutes fundamental research on sampled tobacco industries of Nepal and India. The issues have been accumulated from below references.

1. Encyclopaedia Britannica, inc., 2011, websites. Aug 6, 2011
2. Clonio 1550-1575: vol. 13 p.509. Heading, tobacco, Europe, Wikipedia the free encyclopedia.
3. Tobacco Organization Retrived 2008: 9-18, Tobacco Facts – why is tobacco so addictive
4. Saner L. Gilman and Zhou Xun, "Introduction" in Smoke; p.26 available from www.wikipedia.com.
5. WHO, 2008, Tobacco is the Single Most Preventable Cause of Death in the World Today. p.8. Available from: www.who.int/tobacco,Aug 3, 2011.
6. James, I. 1604, A Counterbalance to Tobacco, England, Available from:WWW.druglibrary.org Aug 8 ,2011 , 7.06 pm
7. Gottsegen, J. J. Tobacco-A Study of its Consumption in the United States, New York-Chicago: Pitman Publishing Corp., 1940, 8-10, 28, 87, 147, 153, 155.
8. Middleton, A. P. Tobacco Coast, Charlottesville: University of Virginia Press, 1953, 93-94, 104-107, 114-117, 120-121.
9. Morison, S. E. The Oxford History of the American People, New York: Oxford University Press, 1965, 93-94. National Interagency Council on Smoking and Health. "State Activities," Bulletin, July-September 1971, 1.
10. WHO Report, 2008, Dr Margaret Chan , Head of WHO, UN, Geneva.
11. <http> www.wikipedia.org/wiki/Category:Tobacco companies of India, Aug 6, 2011.
12. Maxwell, J. C., Jr. "Preliminary Year End Estimate," The Maxwell Report, November, 1971,:1-2.

13. Robert, J. C. The Story of Tobacco, Chapel Hill: University of North Carolina Press, 1949,: p. 11, 99-101, 106107, 117, 169, 247, 256.
14. Wagner, S. Cigarette Country, -New York: Praeger Publishers, 1971,:pp. 40, 63-64, 74, 80, 120-121, 166-173, 175, 190, 205, 216, 220.
15 . Werner, C. Tobacco Land, New York: Tobacco Leaf Publishing Co., 1922,: 100-102, 105, 358-359, 559. "Where Cigarette Makers Spend Ad Dollars Now," Business Week, December 25, 1971, 56-57.
16. Karki, Yagya Bahadur. (2002).Review and Situation Analysis for Comprehensive National Tobacco Control in Nepal. A Project Report, WHO,Regional office South Asia, New Delhi. WHO. pp. 14-15.
17. www.janakifm.org.np
18. www.jaws.org.np
19. www.who.int/tobacco
20. www.gatt.org
21. www.snpl.com.np
22. www.itcportal.com. Aug 4, 2011
23. www.godfreyphilips.com
24. www.wto.org.
25. www.who.org.

Chapter-3
Review of Literature

CHAPTER–THREE
REVIEW OF LITERATURE

3.1 Visionary Approach

The earlier studies serve as a foundation for contemporary research. These past research are a mechanism to provide continuity and linkage for current studies thereby ensuring the effectiveness of their outcomes.

In this chapter, some basic and prominent capital structure management literatures are included. It accompanies the theories with empirical evidence of capital structure management. The main purpose of literature review is to find, what research has been done in one's chosen field of study and what remains to be done. This provides the foundation for developing comprehensive theoretical framework against which hypothesis can be developed for the companies.

3.1.1 Concept of Capital Structure

Capital structure comprises of two words i.e. capital and structure, where capital refers to the funds collected from different sectors for mobilization of resource. Capital in the form of commodities has to perform the function of commodities. Capital composed are produced specially for the market and must be sold, transformed into money, hence go through the process C-M.(Marx, 1986:38)[1]. Structure is the management of capital as well as other components which can be used for production of related products. In other words, structure is the combination of different components of capital formation such as long - term debt, internal equity,

preferred stock & common stock or equity capital. Capital structure is defined as total debt to total assets at book value which influences the profitability and riskiness of the firm. (Bos and Fetherston, 1993:53-66).[2]

Sometimes, capital structure is also referred to as financial plan comprising composition of long – term source of funds such as debentures, long term debt, preference share capital and equity share capital including reserves & surpluses (i.e. retained earnings). Some companies don't make plan of their capital structure and as a result these companies bear heavy losses. The capital structure decision can directly affect the value of firm either by changing the expected earnings or the cost of capital or by both. The optimum capital structure is obtained when the market value per share is maximum or the average cost of capital is minimum. (Pandey, 1986: 258)[3]

Financial structure is the mix of all items that appear on the right hand side of the company's balance sheet. Capital structure is the mix of the long – term sources of funds used by the firm. The relationship between financial and capital structure can be expressed in equation form as;

Financial structure – current liabilities = capital structure.

Financial structure design requires answer to the following two questions; first, what should be the maturity composition of the firm's sources of funds & how should a firm best divide its total funds sources between short and long – term components? Second, in what properties relative to the total should the various forms of permanent financial be utilized? (Keown et.al.1998: 372)[4]

Financial structure refers to the way the firm's assets are financed. Financial structure is represented by the entire right hand side of the balance sheet which includes short- term debt and long term debt as well as shareholder's equity. Capital structure or the capitalization of the firm is the permanent financing represented by long- term debt, preferred stock and shareholders' equity. Thus, a firm's capital structure is only part of its financial structure.(Weston & Copeland, 1992: 565)[5]

Capital structure decision is a significant managerial decision which influences the shareholder's return & risk. Consequently, the market value of the share may be affected by the capital structure decision subsequently; whenever funds have been raised to finance investments a capital structure decision is involved. (Pandey, 1999: 574)[6]

A firm's capital structure is the relationship between the debt & equity securities that make up the firm financing of its assets. Most firms has capital structure with debt & equity elements, the financial manager is highly concerned with the effects of borrowing. If firm is making money on its borrowing , the shareholders are realizing higher earnings per share than in absence of debt. (Hampton, 1998: 166) [7]

Capital structure is the composition of debt and equity securities; this comprise a firm's financing of its assets i.e., with both debt & equity securities involved and are used in most large corporations. The choice of the amount of debt and equity is made after a comparison of certain characteristics of each kind of internal factors

related to the firm's operations and of external factors that can affect the firm. (Hampton, 1990: 33)[8]

3.1.1.1 Conceptual Framework

Capital structure of a company refers to the composition or make - up of its capitalization and it includes all long- term capital resources, viz., loans, reserves, shares and bonds. The term capitals structure means the proportion of different types of securities issued by a firm. The optimal capital structure is the set of proportion that maximizes the total values of the firm. (Schall and Haley, 1983: 339)[9]

Capital structure should not be confused with capitalization. Capitalization is a quantitative aspect of financial planning as it refers to the total amount of securities issued by a company, while capital structure is concerned with qualitative aspect as it refers to the kinds of securities and to proportionate amounts that make up capitalization.

Capitalization is the total of all types of long term capital or capital structure proportions of all types of long term and short term capital (Upadhaya: 1985: 799)[10]

The optimal capital structure is the combination of debt and equity that maximizes the total value of the firm or minimized weighted average cost of capital. (Pandey, 1999: 611).[11] optimal capital structure can be properly defined as combination of debt and equity that attains the stated management goals maximization of the firm's market value, and which minimizes the firm's cost of capital. Solomon (1963) advocated that :

> “A firm has certain structure of assets, which offers net operating earnings of given size and quality and gives a certain structure of rates in the capital market, there is some specific securities which will be higher or the cost of capital will be lower than at any other degree of leverage.”P 53[12]

Ownership ratios assist the stockholder in analyzing the present and future investment in a company. Under this ratio generally, three major groupings of ratios can be analyzed they are, capital structure ratios, earnings ratios and dividend ratios. Capital structure is the relation of debt to equity as sources of the firm's assets. The two ratios that reflect capital structure are the debt-equity ratio and the debt-asset ratio (Hampton, 1990:116). [13]

Similarly, the use of the fixed charges sources of funds such as debt and preference share capital along with the owners' equity in the capital structure is described as financial leverage or trading on equity (Pandey, 1986:205).[14]

It has been found in conceptual framework that, the traditional financial models assists to the choice of optimum capital structure policy by trading off various tax and incentive benefits of debt financing against financial distress costs. However, Optimum capital structure of firm is a combination of debt and equity which maximise the value of the firm but it cannot be clearly defined as the source and ratio of capital structure.

3.1.2 Theory of Capital Structure

The design of the firm's financing mix is the firm's permanent sources of funds that are its capital structure. The objective of capital structure management is to arrange the company's sources of funds so that its common stock price will be maximized whereas, all other factors held constant. (Kewon, et al. 1998 : 392)[15]

The capital structure decision can affect the value of the company either by changing the expected earnings or the cost of capital or both. If leverage affects the cost of capital and the value of firm, an optimal capital structure would be obtained at the combination of debt and equity that maximizes the total value of the firm (value of shares plus value of debt) or minimizes the weighted average cost of capital.(Pandey, 1986 :227)[16]

Capital structure does not provide to financial managers with a specified methodology for use in determining financing mix for maximization of shareholders wealth but financial theory does provide help to the managers for chosen appropriate debt equity financing mix which affects the firm’s value .(Gitmen,2001: 507)[17]

However, Proper sources of capital should be considered under appropriate capital structure where, the firm could maximize its value or could minimize the cost of capital. Some of the major approach has been developed the firm’s capital structure, these are:

3.1.2.1 Net Income Approach

Net Income (NI) approach is suggested by David Durand. According to this approach, the capital structure decision is relevant to the valuation of the firm. In other words, a change in the capital structure or financial leverage will lead to a corresponding change in the overall cost of capital as well as the total value of the firm. If, therefore, the degree of financial leverage as measured by the ratio of debt to equity is increased, the weighted average cost of capital will decline, while the value of the firm as well as the market price of ordinary shares will increase. Conversely, a decrease in the leverage will cause an increase in the overall cost of capital and a decline both in the value of the firm as well as market price of equity shares.

The NI approach to valuation is based on the following three assumptions;

(i) There are no taxes.

(ii) That the cost of debt is less than the equity capitalization rate/cost of equity.

(iii) That the use of debt doesn't change with the introduction of debt or change in either the cost of debt or the cost of equity.

If the firm uses no debt or if the financial leverage is zero, the overall cost of capital will be equal to the equity capitalization rate. The weighted average cost of capital will decline and will approach the cost of debt as the degree of leverage reaches one. (Khan and Jain,1998: 476-477)[18]

The essence of the Net Income (NI) approach is that, the firm can increase its value by lowering the overall cost of capital and increasing the proportion of debt in the capital structure. (Panday, 1986: 230)[19]

The use of additional debt has caused the total value of the firm to increase and the overall cost of capital to decrease. Thus, the decrease in leverage has increased the overall cost of capital consequently reducing the value of the firm. Thus, according to the NI approach, the firm can increase/decrease its total value ($V_{f)}$ and decrease/increase its overall cost of capital (K_o) as it increases/decreases the degree of leverage. As a result, the market price per share is affected. (Khan and Jain, 1998: 479)[20]

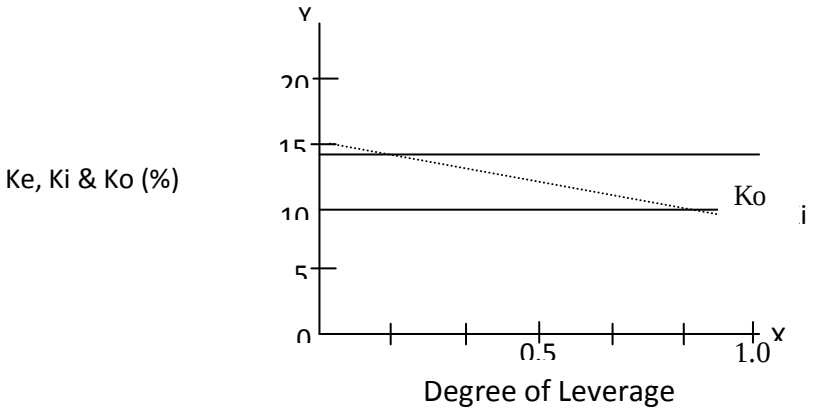


Fig. 3.1 Degree of Leverage

The relationship between the various factors (i.e. $k_{e,}$ $k_{i,}$ k_o) with the degree of leverage, on the basis of its above-mentioned assumptions can be presented by figure 3.1 as above.

The degree of leverage is plotted along the X-axis, while the percentage rate for $k_{i,}$ $k_{e\ \&}$ k_o on Y-axis. Assumptions being hold that k_e & k_i (i.e. cost of equity and cost of debt respectively) remain unchanged, as the

degree of leverage changes, both curves are parallel to the X-axis. But as the DOL increases, k_o (i.e. overall cost of capital) decreases and approaches the cost of debt where the leverage is 1.0, (i.e. $k_o = k_e$). It will be owing to the fact that there is no equity amount in the firm's capital structure. At this point, the firm's overall cost of capital would be minimum. Therefore, the significant conclusion, of the NI approach is that the firm can employ almost 100% debt to maximize its value.

Under this approach, total value of firm and k_o measured by; (Pandey, 1986: 231)[21]

$$K_O = \frac{NOI}{V_f}$$

Where, k_O = Overall cost of capital

NOI = Net operating income

V_f = Value of the Firm (i.e. B+S)

B = Market value of debt outstanding

S = Market value of stock outstanding

NI approach is an important variable in the capital structure decision of a firm. With a judicious mixture of debt and equity of a firm can evolve an optimum capital structure, which will be, the one at which value of the firm is the highest and the overall cost of capital is lowest. At that structure, the market price per share would be maximum. According to this approach, tax

exempt concept and lowering cost of debt are used any firm for maximization of profit.

3.1.2.2 Net Operating Income approach

Under the net operating income (NOI) approach, the cost of equity is assumed to increase linearly with leverage. As a result, the weighted average cost of capital remains constant and the total value of the firm also remains constant as leverage is changed (Brigham and Houston, 2004: 256).[22] This approach is diametrically opposite to the NI approach. The essence of this approach is that the leverage/capital structure decision of the firm is irrelevant. Any change in leverage will not lead to any change in the total value of the firm and the market price per shares, as the Overall cost of capital is independent of the degree of leverage (Khan, op cit: 481)[23]. According to this theory, the following propositions are based.

>Overall cost of capital or capitalization rate (k_o) is constant: – Under this proposition, the overall capitalization rate of the firm remains constant for all degrees of leverage. In this situation, the value of the firm, given the level of EBIT, is calculated as;

$$V = \frac{\textbf{EBIT}}{\textbf{Ko}}$$

In other words, the market evaluates the firm as a whole. The split of the capitalization between debt & equity is therefore, not important.

>Residual value of equity - The value of equity is a residual value, which is determined by deducting the total value of the debt (B) from the total value of the firm ($V_{f)}$. Thus, total market value of equity (S) = V_f - B.

>Changes in cost of equity capital - The cost of capital (K_e) increases with the degree of leverage. The increase in the proposition of debt in the capital structure relatively to equity shares would lead to an increase in the financial risk to the ordinary shareholders. In other words, the use of less costly debt funds increases the risk to shareholders. Thus, the advantage of debt is offset exactly by the increase in the equity-capitalization rate (K_e).

>Cost of debt (k_i) - It has two parts; they are: (i) explicit cost - represented by the rate of interest. Irrespective of the degree of leverage, the firm is assumed to be able to borrow at a given rate of interest. This implies that the increasing proportion of debt in the financial risk of the lenders and they don't penalize the firm by charging higher interest. (ii) Implicit or hidden cost - As shown in the assumption relating to the changes in K_e, increase in the decrease of leverage or the proportion of debt to equity causes an increase in the cost of equity capital. This increase in $K_{e,}$ being attributable to the increase in debt, is the implicit part of $K_{i.}$ Thus, the advantage associated with the use of debt, supposed to be a 'cheaper' source of funds in terms of the explicit cost, is exactly neutralized by the implicit cost represented by the increase in $K_{e.}$ As a result, the real cost of debt and the real cost of equity, according to the NOI approach is the same and equal to $K_{o.}$

>Optimum capital structure - The total value of the firm is unaffected by its capital structure, No matter what the degree of leverage is, the total value of the firm will remain constant. The market price of shares will also not change with the change in the debt-equity ratio. There is nothing such as an "optimum capital structure". Any capital structure is optimum, according to this NOI approach.

Other critical assumptions of the NOI approach can be explained as: the corporate taxes don't exist, the debt capitalization rate K_i is constant as K_O, the market uses an overall capitalization rate (K_O) to capitalize the net operating income, K_O depends on the business risk. If the business risk is assumed to remain unchanged, K_O is a constant (Vanhorne, 2000: 253-254)[24]

$$V_F = (B+S) = \frac{NOI}{K_O}$$

The cost of equity (K_e) will be measured as follows:

$$K_e = K_O + (K_O - K_e)\frac{B}{S}$$

$$\text{OR} \quad K_e = \frac{E}{S}$$

Where, E is simply net operating income minus interest payments and S is market value of stock.

The relationship between the various factors (i.e. K_e, K_i, K_O) with the degree of leverage, on the basis of its above-mentioned assumptions, figure 3.2 can be presented as follows;

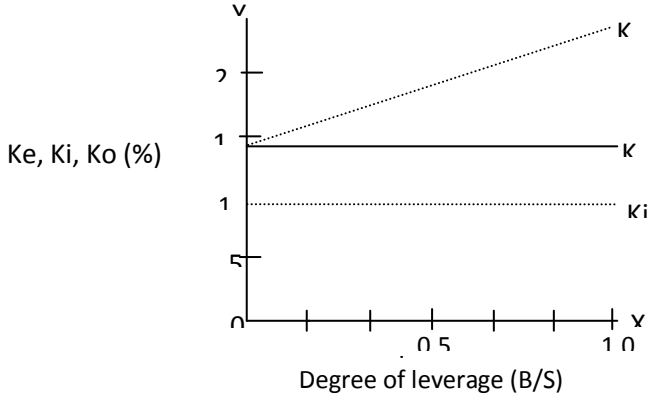


Fig 3.2 Degree of leverage

With this approach, net operating income is capitalized on overall capitalization rate to obtain the total market value of the firm. The market value of the debt then is deducted from the total market value to obtain the market value of the stock. Under this approach (NOI), the overall capitalization rate, K_o, as well as the cost of debt funds, K_i, stay same regardless of degree of leverage. The required return on equity, however, increases linearly with leverage. The critical assumption with this approach is that K_o is constant irrespective of degree of leverage. An increase in the use of supposedly 'cheaper' debt funds is offset exactly by the increase in the required equity return, K_e. Thus, the weighted average of K_e and K_i remains unchanged for all degree of leverage. As the firm increases its degree of leverage, it becomes increasingly more risky. As long as K_i remains constant, K_e is a constant linear function of the debt-to-equity ratio. Because the K_o can't be altered through leverage, the NOI approach implies that there is one optimal capital structure (Vanhorne, 2000: 253-254). [25]

In this approach, cost of debt is constant, corporate income tax do not exit and WACC remains constant. Moreover, cheaper amount of debt

cost does not affect the value of the firm. In this theory, capitalisation rate is dependent upon the business risk and capital structure is not relevant to the cost of capital. This concept is slightly differing in today's going concern manufacturing industries. The recent scenario of manufacturing industries is that they incorporate higher portion of debt with varying cost of debt and capital structure depends upon the business risk.

3.1.2.3 Traditional Approach

Traditional view, which is also known as an intermediate approach, is a compromise between the net income approach and net operating income approach. According to this view the value of the firm can be increase or cost of capital can be reduced by a judicious mix of debt and equity capital. This approach clearly implies that, the cost of capital decrease within the reasonable limit of debt and then increase with leverage .Thus, an optimum capital structure exists and occurs, when cost of capital is minimum or the value of the firm is maximized. The cost of capital declines with leverage because debt capital is cheaper than the equity capital within reasonable or acceptable limit of debt. Traditional approach is based on the following assumptions;

(i) Equity holders adjust their required rate of return proportionately for every debt inclusion

(ii) It assumes that debt holders don't really care for the level of debt inclusion and do not demand any premium for the leverage risk at least in the beginning.

(iii) The expected outcome of the behaviour of equity holders and debt holders is the benefit of cheaper debt financing cases as the cost of equity and debt increases.

This approach suggests that, the firm initially can lower its cost of capital and raise its total value through leverage. Although investors raise the required rate of return on equity, the increase in K_e does not offset entirely the benefit of using "cheaper" debt funds. (Vanhorne, 2000: 253-254)[26]

There are some variations to the traditional approach. According to one of these, the equity-capitalization rate K_e rises only after certain level of leverage and not before, so that the use of debt does not necessarily increase the cost of equity i.e. K_e. The implication is that a firm can reduce its cost of capital significantly with the initial use of leverage. Another variant of the traditional approach suggests that there is no one single capital structure but, there is a range of capital structure in which the cost of capital (K_o) is the minimum and the value of the firm is the maximum. In this range, changes in leverage have very little effect on the value of the firm. This approach clearly implies that the cost of capital decreases within the reasonable limit of debt and then increases with leverage. Thus, an optimal capital structure exits and occurs when the cost of capital is minimum or the value of the firm is maximum. The cost capital declines with leverage because debt capital is cheaper than equity capital within reasonable, or acceptable, level of debt. This statement shows that, debt

funds are cheaper than equity funds. In other words, the weighted average cost of capital will decrease with the use of debt.

According to the traditional approach, the manner in which the overall cost of capital reacts to changes in capital structure can be divided into three-stages.(Panday,1986 :236)[27]

Stage I - In this first stage, the rate at which the shareholders' capitalize their net income, i.e. the cost of equity (K_e), remains constant or rises slightly with debt. But when it increases, it doesn't increase fast enough to offset the advantage of low-cost debt. During this stage, the cost of debt (K_i) remains constant or rise negligibly. As a result, the value of the firm (V_f) increases or the overall cost of capital (K_o) fall with increasing leverage.

Stage II - In this stage, the firm has reached a certain degree of leverage, increases in leverage have a negligible effect on the value, or the cost of capital of the firm. This is because the increase in the cost of equity due to the added financial risk offsets the advantage of low cost debt within that range or at the specific point, the value of the firm will be maximum or the cost of capital will be minimum.

Stage III - In this stage, the value of the firm decreases with leverage or other way round, the cost of capital increases with leverage. This happens because; the investors perceive a high degree of financial risk and increase equity-capitalization rate by more than to offset the advantage of low-cost debt.

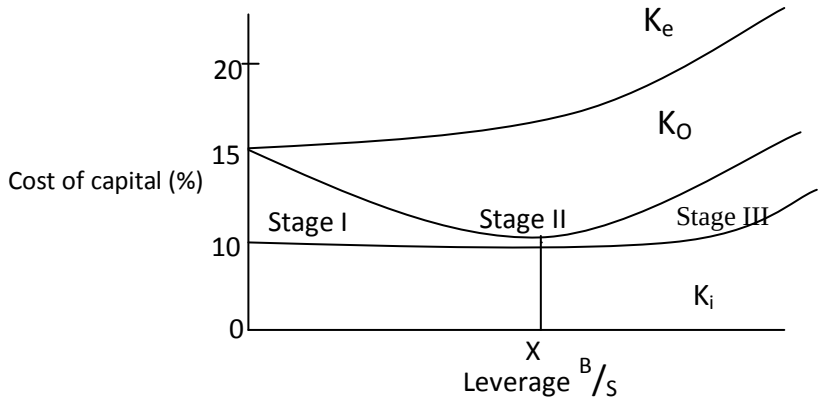


Fig 3.3 Leverage

The above figures explain that there is one variation of the traditional approach, shown in fig.3.3, K_e is assumed to risk at an increasing rate with leverage, whereas, K_i is assumed to rise only after significant leverage has occurred. At first, the weighted average cost of capital declines with leverage because the risk in K_e doesn't entirely offset the use of cheaper debt funds. As a result, the weighted average cost of capital (K_o) declines with moderate use of leverage. After a point, however, the increase in K_e more than offsets the use of cheaper debt funds in the capital structure, and K_o begins to rise. The rise in K_o is supported & further once K_i begins to rise. The optimal capital structure is the point 'X' Thus; the traditional position implies that the cost of capital is not independent of the capital structure of the firm and that there is an optimal capital structure. (Van Horne 2000: 255) [28]

3.1.2.4 Modigliani-Miller Approach (MM Approach)

Modigliani & Miller (1958) In their original proposition advocated that, the relationship between leverage and cost of capital is explained by the

net operating income approach. They make a formidable attack on the traditional approach by offering behavioural justification for having the cost of capital remained constant through all degree of leverage. (Van Home, 2000: 275).[29]

This hypothesis (MM approach) is identical with the NOI approach, and M-M argue that in the absence of taxes, a firm's market value and the cost of capital remain invariant to the capital structure changes. The original proposition of Modigliani and Miller continued his development in 1963 and 1965 which, led to the foundation of corporate finance of any firm. The M.M. cost of capital hypothesis can be the best expressed in items of their propositions I and II. However, the following assumptions, regarding the behaviour of the investors and capital market, the action of the firm and environment, are crucial for the validity of the M.M. hypothesis (Van Home, 1991:269).[30]

(i) Capital Markets are perfect; information's are less costly and readily available to all investors. There are no transaction cost, in all securities are infinitely divisible. Investors are assumed to be rational and behave accordingly.

(ii) Firms are categorized into equivalent return classes. All firms within a class have same degree of business risk.

(iii) There is no income tax. This assumption is removed latter by Modigliani and Miller.

(iv) The average expected future operating earnings of firms represented by subjective distribution of all investors are the same.

(v) Dividend payout ratio is 100 percent.

Proposition I

The M – M proposition I states that market value of a firm is independent of its capital structure. The reason is that the value of the firm is determined by capitalizing the net operating income (NOI or EBIT) at a rate for the firm risk classes (Modigliani and Miller: 1958). According to this proposition there is no relationship between the values of a firm, as the way its capital structure is made up, and there is no relationship between the average cost of capital and capital structure.

Proposition II

The proposition II states that the cost of equity rises proportionately with increase in the financial leverage in order to compensate for bearing additional risk arising from increased leverage in the form of premium.

Thus, the M - M theory in the tax contains that overall costs of capital as well as the value of the firms are independent of capital structure. The theory in a tax free is identical to the net operating income approach. It is also called, the value of levered firm V_L is equal to the value of an unlevered firm (V_U) in the same risk class i.e., $V_L = V_U$. With tax consideration MM theory reveals that its conclusion is identical to that of net income approach, which says that the value of a firm increases with

every additional unit of debt financing. Such as, the theory suggests that it is always better to have maximum debt financing.

Basic assumptions of MM hypothesis

(i) The overall cost of capital (K_o) and the value of the firm (V_f) are independent of its capital structure. The K_o and V_f are constant for all degree of leverage. The total value is given by capitalizing the expected stream of operating incomes at a discount rate appropriate for its risk class.

(ii) The cost of equity K_e is equal to the capitalization rate of a pure equity stream plus premium for financing risk or the difference between the pure equity-capitalization rate (K_e) and K_i times the ratio, i.e, the ratio of debt to equity.

The following assumption of M M approach has been made:

- Perfect capital markets i.e. securities are infinitely divisible, investors are free to buy/sell securities, no transaction costs, investors are rational & behave accordingly, information are perfect, investors can borrow without restrictions on the same terms and conditions as firm can.
- Given the assumption of perfect information and rationality, all investors have the same expectation of firm's NOI (EBIT) with which we evaluate the value of any firm.
- Business risk is equal among all firms with similar operating environments; the dividend payout ratio is 100%. And there are no taxes. This assumption is removed later.

On the basis of above-mentioned assumptions, the M-M approach has been created and this approach supports to NOI approach. Given the above stated assumptions, M-M argues that for firms in the same risk class, the total market value is independent of the debt equity combination and is given by capitalizing rate appropriate to that risk class.

The M-M proposition is based on the idea that no matter how it divides up the capital structure of a firm among debt, equity and other claims, there is a conservation of investment value. That is, because the total investment value of a corporation depends on its underlying profitability and risk, it is invariant with respect to relative changes in the firm's financial capitalization. Thus, the total pie does not change as it is divided into debt, equity and other securities. The sum of the parts must equal the whole; so, regardless of financing mix; the total value of the firm stays the same, according to M-M. In this regard, the idea is illustrated with the two pies in figure 3.4 below, different mixes of debt and equity do not alter; the size of the pie total value stays the same. (Van horne 2000: 256)[31]

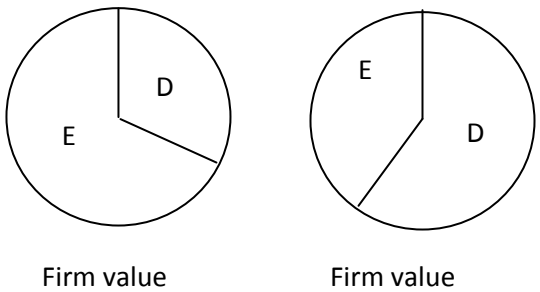


Fig. 3.4 Illustration of capital structure irrelevancy.

M-M in theirs' proposition I, argue that for firms in the same risk class, the total market value is independent of the debt equity combination

and is given by capitalizing the expected net operating income by the rate appropriate to that risk class. It can be expressed mathematically as follows;

$$V = (S+D) = \frac{\overline{X}}{K_O} = \frac{NOI}{K_O}$$

$$\text{By definition, } K_O = \frac{\overline{X}}{V}$$

Whereas,

V = market value of the firm,

S = market value of the firm's common shares,

D = market value of the debt,

X = the expected net operating income on the assets of the firm,

K_o = the capitalization rate appropriate to the risk class of the firm,

K_e = cost of equity,

K_d = cost of debt and

NOI = net operating income.

MM concludes that the total market value of the firm is unaffected by the financing mix, it follows that the cost of capital is independent of the capital structure and is equal to the capitalization rate of a pure equity stream of its class. The cost of capital function, as hypothesized by MM through proposition, it can be shown in figure 3.5, that the average cost of capital is constant and is not affected by the leverage, as follows;

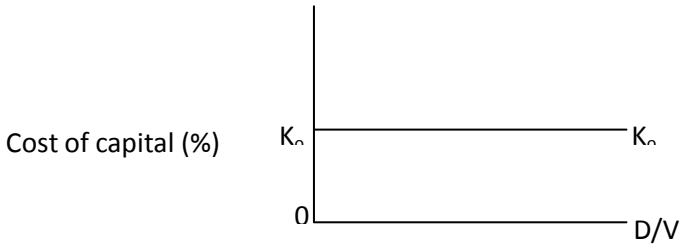


Fig.3.5: The cost of capital under MM hypothesis.

M's proposition II, which defines the cost of equity, follows from their proposition I. The cost of equity formula can be derived from MM's definition of the average cost of capital. The expected yield on equity or the cost of equity can be defined as follows; (Vanhorn 2000:244-245)[32]

$$K_e = K_O + (K_e - K_{D)} \quad \frac{D}{S}$$

This equation states that, for any firm in a given risk class, the cost of equity, K_e, is equal to the constant average cost of capital i.e. K_o, plus a premium for the financial risk, which is equal to debt-equity ratio times the spread between the constant average cost of capital and the cost of debt, $(K_o - K_d)\ {}^{D}/_{S}$. The cost of equity, K_e is a linear function of leverage, measured by ${}^{D}/_{S}$. Thus, the leverage will result in earnings per share to shareholders but also increased cost of equity. The benefit of leverage is exactly taken off by the increased cost of equity, and consequently, the firm's market value will remain unaffected. It should, however, be noticed that the functional relationship $K_e = K_o + (K_e - K_d)\ {}^{D}/_{S}$ is valid irrespective of any particular valuation theory. The important part of the MM approach is that K_o will not rise even if excessive use of leverage is made. This conclusion could be valid of the cost of borrowings, K_d, remains constant for

any degree of leverage. MM maintains that even if the cost of debt, $K_{d,}$ is increasing, the weighted average cost of capital, $K_{o,}$ will remain constant. They argue that when K_d increases, K_e will increase at a decreasing rate and may even turn down eventually. This can be presented in figure 3.6 as below;

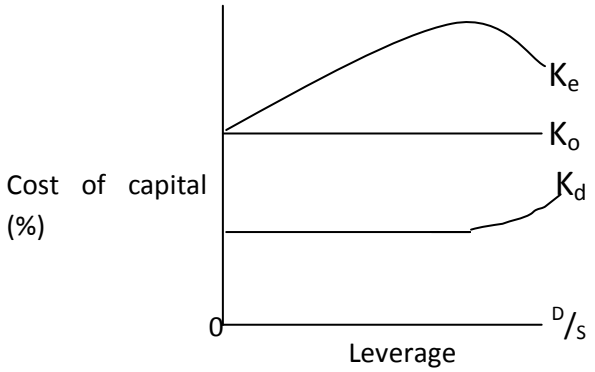


Fig. 3.6: cost of capital under MM thesis

MM insists that the arbitrage process will work and that as K_d increases, some investors actually become risk-seekers, whereas before they avoided risk. MM assumes that risk averters could become risk-seekers under extreme leverage situation doesn't seem to be plausible at all. Undoubtedly, excessive levered firm is highly risky because of the increased profitability of insolvency. It is, therefore, unlikely that the share of such firm would sell at a price higher than that of an unlevered firm. This implies that the cost of equity can't fall as leverage increases.

According to Miller 1958, the valuation of a firm is independent of its financial structure under certain assumptions. Internal and external funds may be regarded as perfect substitutes in the world where there are no transaction. Furthermore, MM concludes that, the total market value of the firm is unaffected by the financing mix of capital structure which follows

that, the cost of capital is independent of the capital structure. This theory does not support the today's capital market because today's capital market is imperfect and there are different expectations of individual investors who invest in the firm. However, DPR differs with Firm.

3.1.3 Modern theory of Capital Structure

3.1.3.1 Pecking order theory

This theory was elaborated and brought out by Myers (1984) by the name of 'Pecking order theory'. The pecking order theory is a dynamic theory. The observed capital structure of each firm will depend on its example; an unusually profitable firm in an industry with relatively slow growth (few investment opportunities) will end up with as unusually low debt-to-equity ratio. It has no intention to issue debt and retire equity. An unprofitable firm in the same industry will end up with a high debt ratio. (Weston & Copland, 1990: 606) [33]

According to the pecking order theory, retained earnings are the preferred source of financing followed by debt, and then common stock. (Ibid,: 623)[34] According to this theory management follows a preference ordering when it comes to financing. The internal financing of investment is preferred, in part because it avoids the outside scrutiny and also there is not floatation costs associated with it. But, this theory is mainly the behavioural explanation of why certain firms finance the way they do. Suppose there are three sources of funding available to firms, retained earnings, debt, and equity. Equity is subject to serious adverse selection. Debt has only minor adverse selection problems, and retained earnings

avoid the problem. From the point of view of an outside investor, equity is strictly riskier than debt. Both have an adverse selection risk premium, but that premium is larger on equity. Therefore, an outside investor will demand a higher rate of return of equity than on debt. From the perspective of those inside the firm, retained earnings are used when possible. If there is an inadequate amount of retained earnings, then debt financing will be used. Only in extreme circumstances equity is used. This is a theory of leverage in which there is no notion of an optimal leverage ratio.

3.1.3.2 Debt Capacity Theory

Debt capacity is the maximum amount of borrowing allowed by the capital market to the firm, and it can incur the bankruptcy cost before exhaustion of the debt capacity of the firm. Robichek and Myers (Alexander A & Myers C, 1965:20)[35]suggested in 1965 that bankruptcy costs might represent the major missing element and incorporating these costs within the foundations laid by MM might support the concept of an optimal capital structure. The same thing was suggested by Hirschieifer in 1970. (Hirschieifer, 1970: 264)[36] Similarly, Miller in 1960 demonstrated the importance of bankruptcy cost to explain the phenomenon of credit rationing on the basis of rational economic self-interest by lenders.(Kim,1978:45) [37] Kraus and Lichtenberger in 1973 explained the state preference model with wealth taxes and bankruptcy costs, and they suggested a stochastic dynamic programming approach to search for an optimal capital structure. (Alan et al, 1973: 911-922)[38] In 1974, Myers and

Pogue developed these following poultry theories of debt capacity. (Stewart et al, 1974:589)[39]

(i) The Lenders Chickens Out first,

(ii) The Managers Chickens Out first, and

(ii) The Shareholders Chickens out first.

(i) The first poultry of debt capacity states that if debt capacity occurs first, the optimal amount of borrowing is not obtainable and the question of an optimal capital structure does not become relevant (kim . op cit p 46)[40] because debt capacity is the most binding constraints on a firm's ability to borrow the additional funds. Lenders impose some restrictive covenant provisions in debt indenture in order to curb the managers' behaviour to indulge in the very risky investment with their money. These covenant provisions restrict the management to borrow money further and reach the optimal capital structure. So, if the limit of debt capacity is already reached before optimal capital structure, it is irrelevant.

(ii) The second of these poultry theories is added on the managerial capitalism idea. This theory states that managers may stand to lose more than shareholders in the event of firm failure. (John et al 1988: 355)[41] They have to bear the cost of failure of the firm in terms of the cost of searching the new jobs and diminution in human capital, So, managers may prefer to less amount of debt than shareholders desire and creditors supply.

(iii) The third theory, the shareholders chickens out first, is based primarily on the existence of the cost of financial distress, and it states that

there is optimal capital structure. The probability of bankruptcy increases with the increase in leverage, and as a result of this, bankruptcy costs also increase. Though Kim assumes that the bankruptcy cost is linearly related with capital structure (Kim, 1978: 45-60)[42] it is not possible to exit the linear function between bankruptcy cost and capital structure. Since, the probability of bankruptcy increases at higher rate with the use of debt. So, the function of bankruptcy cost with capital structure is not linear.

A number of theories have considered the role of financial distress costs in the firm's optimal capital structure. Kraus and Litzenberger in 1973 concluded that in complete and perfect capital markets, the presence of market imperfections-taxation of corporate profits and the existence of bankruptcy market value. They incorporated these market imperfections into a state preference framework. They drew the theory that the market value of a levered firm is equal to the unlevered market value plus the corporate tax rate times the market value of the firm's debt, less the complement of the corporate tax rate times the present value of bankruptcy costs. (Alan et al , 1973: 918)[43]

Kim in 1978 stated that in a perfect capital market where firms are subject to income taxes and costly bankruptcies, debt capacity occurs at less than one hundred percent debt financing and firms do not have optimal capital structure. The market value of the firm increases for low level of debt and decreases as financial leverage becomes extreme. (kim op cit .: 60) [44] Similarly, Lee and Barker in 1977 concluded that debt capacity level of the firm is the function of expected return and variance. Given the two

investment opportunities with the identical variance, the firm having high expected return has the high debt capacity and firm having the low variance has a high debt capacity. An investment with higher expected return or lower variance implies lower probability of bankruptcy and avoidance of bankruptcy costs. consequently, the lower risk adjusted bankruptcy cost and a much higher level of debt capacity are required to achieve optimal capital structure where marginal tax shield benefit is equal to the marginal risk adjusted cost of bankruptcy. (Lee W. Y. and Banker H.H. 1977: 1663-1664)[45]

In 1976, Scott developed the multi-period model of debt, equity and firm valuation under the assumption of real assets imperfect market. He concluded that the value of non-bankrupt firm was a function of expected earnings and the liquidating value of its assets and the optimal level of debt was an increasing function of liquidating value of the firm's assets, the corporate tax rate and the size of the firm. (Scott, 1976:50)[46] Thus, a number of authors have noted that bankruptcy costs may provide an economic rationale for the existence of a finite optimal capital structure. Kraus and Litzenberger (1973), Kim (1976), Scott (1976), Lee and Banker (1977) and Haugen and Sunbet (1978) formally introduced bankruptcy costs in their models. All these authors expect Haugen and Sunbet, claim that an optimal, finite debt-equity ratio can exist, resulting from a trade-off between the expected value of bankruptcy costs and the tax saving associated with the deductibility of interest payments. Haugen and Sunbet challenged this view of optimal capital structure by arguing that bankruptcy

costs, which affect the capital structure decisions, may be trivial or non-existent if one merely assumes that capital market prices are competitively determined may rational investors. Those who argue otherwise must presumably postulate the existence of either systematic irrationality or market environment that results in a situation wereby investors expect to buy or sell securities only at unfavourable terms. (Robert et al, 1978:392)[47]

Martin and others have summarized the fundamental format for each of those model introduced by different authors as follows: (john D Martin et al, 1988:356)[48]

$$V_L = V_U + x_1 - x_2$$

Where,

V_L = Value of levered firm,

V_U = value of unlevered firm,

X_1 = the value of interest tax saving, and

X_2 = the value of the expected bankruptcy costs.

Probability of bankruptcy is the probability that the firm's cash flow is not sufficient to meet its financial obligation. Mathematically, it is defined as : P [x P ≤ f(D)], where, x = firm's random cash flows, and f(D) = its financial obligation, and f(D) is the function of its use of debt financing. Given the probability distribution of x, the increase use of debt, increases the probability of financial distress. Then optimal financial structure lies at the debt level where, the firm's value is maximized. This dynamic equilibrium can be derived from the model (i) as follows.

Differentiating the equation (i) with respect to D, the following derivative can be derived:

$$\frac{\partial V}{\partial D} = \frac{\partial}{\partial D} x1 - \frac{\partial}{\partial D} x2 \qquad \text{(ii)}$$

The value of V in equation (ii) is maximized in the following conditions:

$$\frac{\partial x1}{aD} = \frac{\partial x2}{\partial D} \qquad \text{(iii)}$$

Here, $\frac{\partial x1}{\partial D}$ = marginal benefits of debt and $\frac{\partial x2}{\partial D}$ = marginal cost of debt. So, value of the firm is maximized when above condition given (iii) is fulfilled. Hence, the level of debt where this condition is held is the optimal level of debt. Thus, the shareholders chickens out first theory contains that the optimal capital structure exists where there is trade-off between the value of marginal benefits of tax subsidy and marginal costs of financial distress.

3.1.3.3 Agency Cost Theory

The stock price of a company owned by investors who are separate from management may be less than the stock value of a closely held firm. This potential difference in price is the cost of the conflict to the owners, known as agency costs. (Kewon, et.al.: 411).Agency cost includes (i) auditing systems to limit this kind of management behaviours, (ii) various kinds of bonding assurances by the managers that such abuses will not be practiced, and (iii) changes in organization systems to limit the ability of managers to analyze these undesirable practices. (weston & copland, 1992: 9)[49] Early 1990s, there is more attention in agency cost theory.

This theory measures the relationship between owners and managers of the firm. Management and owners are same people in the privately owned firm whereas, proprietors operate the firm to satisfy their own goals, needs and funds requirements. Ownership interests are diversified which, creates conflicts between managers and shareholders to impact the financial decision of the company's business nature.(Block & Hirt, 1992:8)[50]

Agency relationship is defined through an explicit or implicit contract. Agency costs are those costs which defines administration, structuring and enforcing of any contracts. Business creates the conflict between agent and its principal of modern business. These two parties try to maximize their own utility. So, agent always does not function in the interest of principal and unity holders do not always work in the interest of debt holders. These interest conflicts between the agent and principal, and equity holders and debt holders create the two types of agency costs-agency costs associated with the equity and debt. Monitoring, bonding expenditures and residual losses are associated with equity agency costs and opportunity wealth loss caused by the impact of debt on investment decision of the firm, the monitoring and bonding expenditure imposed on the owner-manager, and bankruptcy and reorganization costs are associated with the debt agency cost. Jensen and Meckling developed the capital structure theory based on the different agency costs in 1976. (Michael, 1976: 305-360)[51]

Jensen and Meckling developed the theory of corporate ownership based on the assumptions of the constant size of the firm and amount of

outside financing. This theory states that the actual value of the firm is the function of the agency costs incurred. It further argues that: (1) as long as capital markets are efficient, the prices of debt and outside equity reflect unbiased estimates of the monitoring cost and redistributions which the agency relationship will endanger, and (2) the selling owner- manager bears these agency costs. Thus, from the owner-manager's stand point, the optimal proportion of outside funds to be obtained from equity versus debt for a given level of internal equity is that **E** which results in minimum total agency costs.

In Fig. 3.7, agency costs are broken down into two components – total agency costs associated with the outside equity holders and total agency costs associated with the presence of debt in the capital structure. (Jensen et al, 1976: 305-360).[52]The former is incurred due to the conflict between the manager and equity holders and it is equity agency costs.

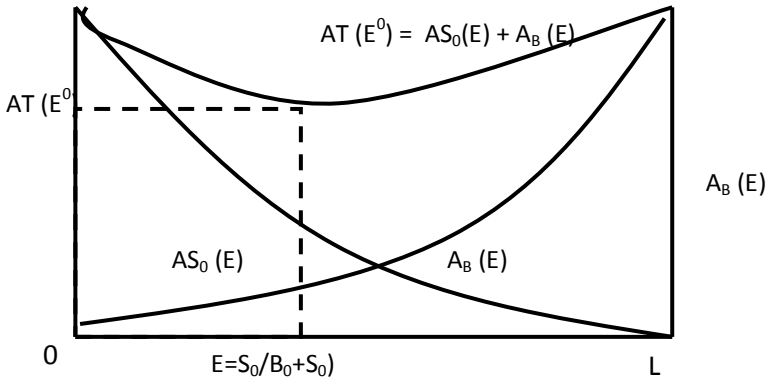


Fig 3.7 Optimum Capital Structure under Agency Cost

The latter agency cost is incurred due to the conflict between the debt holders and equity holders and it is debt agency cost. This is given by A_B (E) curve is Fig. 3.7 so, total agency cost is defined as:

AT (E) = A_{so} (E) + A_B (E).

Where,

$$E = \frac{S_o}{B + S_0},$$

So = outside equity (held by anyone outside of the firm),

B = debt (held by anyone outside of the firm), and A_T (E) = F (outside financing).

Since V = S + B, and S = S_1 +S_0, where S_1 = equity held by the manager (already). Outside equity financing is $\frac{S_0}{B + S_0}$ and outside debt financing = $1 - \frac{S_0}{B + S_0}$ (since external financing is constant).

First, let us take ASo (E). When $\frac{S_0}{B + S} = 0.$ $When$ $\frac{S_0}{B + S}$ increases, ASo(E) also increases because incentive of manager to exploit the outside equity holders increases. When E = 1, A_T(E) = A_{so} (E). A_B (E) = 0 when E = 1. That means there is no debt financing. When $E\frac{S_0}{B + S}$ increases, debt financing decreases given the constant amount of external financing. So the relationship between E and AB(E) is inverse. When E = 0, firm is financed solely by debt. So, at this point the incentives to reallocate wealth from bondholders to manager fall. These incentives fall because of these two reasons – (1) the total amount of debt fall, and therefore, it is more difficult to reallocate any given amount away from the debt holders, and (2) his share of any reallocation which is accomplished is falling. Since, S_0 is rising and hence $\frac{S_1}{S_0 + S_1}$, his share of equity is falling.

Total agency cost curve AT (E) is given for different combinations of outside debt and equity financing. At beginning when E= 0, AT(E) = AB(E) and when E = 1, At (E) = Aso (E). It declines to the certain level of E and then rises after that level. It remains minimum at specific combination of debt and equity. This combination is optimal level of capital structure.

According to the agency cost theory, different types of agent are not always perfectly associated in the firm. The agency costs arises two types of relationship in the business. One is, shareholder and debt holder and another is owner and the non owners, both being based on irregularity of information of business. Furthermore, Jensen and Meckling (1976) have described conflict between debt holders and shareholders. In reference to their study, when a company is highly levered, shareholders have incentives to engage in highly risky business, if they are successful, that will maximise in their wealth, if they are failure, and they establish control devices to the debt holder and creditors. This situation of a firm demands that the firm may be bankrupt and owners have no incentive to provide new capital for the improvement of firm.

3.1.3.4 Asymmetric information theory of capital structure

Asymmetric information theory of capital structure is primarily based on the assumption that managers and insiders possess private information about the characteristics of firm's return stream or investment opportunities (Harris & Raviv, 1991: 297-355)[53], but investors do not have the same thing. This theory has two sets of approach. In one set of approaches, the choice of the firm's capital structure signal to outside investors and in

another set of approaches capital structure is designed to mitigate inefficiency in the investment decisions that are caused by the information asymmetry.

3.1.3.4.1 Signalling effect theory with proportion of debt

In this part of the asymmetric information theory, the capital structure decision is viewed from the signalling aspect, in which the investment is assumed fixed and capital structure is assumed to serve as the signal of private information. The seminal work put forth by Ross (Ross, 1977:23-40)[54] was the first contribution of its kind on signalling hypothesis. His model is based on the assumption that the managers know the true distribution of the firm's return streams. But the investors do not. The managers, as insiders, who have monopolistic access to information about the firm's return stream, choose to unambiguously signal about the firm's future prospects if they have the proper incentive to do so. And, usually managers are provided the incentive if the firm's securities are more highly valued by the market at the same time they are also penalized if the firm goes bankrupt. In such incentive-signalling approach, the management might choose real financial variables such as financial leverage or the dividend policy as the means of sending unambiguous signal to the public about the future performance of the firm. This kind of signals cannot be mimicked by the unsuccessful or low quality firm because such firms do not have sufficient cash flows to back them up and because manager have incentives to tell the truth (Copeland & Weston, 1992)[55]. Thus, the Ross (1977) paper suggests that the managers to signal an optimistic future of

the firm can use greater financial leverage. Another signalling paper is by Leland and Pyle (1977)[56], which is based on managerial risk aversion. The inside information held by the owners can be transferred to the outside capital suppliers because it is in the owner's interest to invest a greater fraction of his/her wealth in successful projects. And the value of the firm increases with the percentage of equity held by the owner relative to what he or she otherwise would have held given lower quality projects. Thus, the owner's willingness to invest in their own project signals better quality of the project. The implication of the argument is that if the original founder of the company going public decides to keep the larger proportion of the stock, then these firms should experience greater price earnings multiples. Another implication is that if firm's value is positively related to the fractions of the owner's wealth held as equity in the firm, then the firm will have greater debt capacity and will use greater amount of debt. Although, use of debt is not signalling here, the use will represent the positive correlation of debt with the firm's value.

Signalling theory is based on asymmetric information problems. Asymmetric information gives retained earnings and debt is the better source of finance than equity when market price of equity is underpriced.

3.1.3.4.2 Interaction of investment and capital structure

The seminal work of Myers and Majluf (1984 :187-221)[57] developed investment and financing decision model based on the information asymmetry and management acting in the best interest of existing shareholders that explain the different aspects of corporate behaviour.

They showed that if the investors are less well informed than the current firm insiders about the value of firm's assets, then equity may be mispriced by the market. Under pricing of equity by market becomes severe if the firm is required to finance new projects by issuing equity, as the new investors capture more value of the projects than existing stockholders. However, in situation when new investors benefit more from the project than the existing shareholders, then projects will be rejected even if the project's net present value is positive. This case is clearly an underinvestment situation which can be avoided if the firm can finance the new project by using a security that is not so severely undervalued by the market. For example, internal funds and/or riskless debt involve no undervaluation, and therefore, will be preferred to equity (Harris & Raviv, 1991)[58]. This kind of firm's financing behaviour to avoid such underinvestment problem is termed as "pecking order" theory of financing by Myers (1984)[59], in which the firm's capital structure will be driven by firm's desire to finance new investments, first internally, then with low risk debt, and finally with equity only as the last resort. Thus, this part of the information asymmetry theory suggests that capital structure emerged as part of the solution to problem of over and under investment.

3.1.3.5 Emerging Theoretical Consideration

a. Product /Input market interaction

Product/input market interaction theory of capital structure uses the feature of theory of industrial organization and has begun to appear in the corporate finance theory. This model can be classified into two categories.

One approach in this theory is relationship between capital structure and firm's strategy when competing in the product market while another approach is relationship between capital structure and the characteristics of products and inputs. In the first approach, which is based on the relationship between the capital structure and its strategic interaction variables, the leverage is said to be higher, In this line of theory, the leverage increase is assumed to payoff to equity and affects the equilibrium product market strategy. The basic idea of this theory is that increase in leverage induces equity holders to pursue riskier strategies and to pursuing more risky strategies by adopting aggressive output policy. The firm chooses more positive debt levels. The strategic variables considered in the model are the product price and quantity. These strategies are determined to affect the behaviour of the rivals, and capital structures in turn affect the equilibrium strategies and payoffs. The next approach to capital structure determination is to identify product (input) or product market (input market) characteristics that interact in a significant way with the debt level (Harris & Raviv, 1991)[60]. Some of the examples of the product/input market factors affecting the capital structure decision are customers' need for a particular product of services, the need for workers to invest in firm specific human capital, product quality and the bargaining power of the employees or the suppliers. Thus, the model involving the product input characteristics have focused on the effect of capital structure on the future availability of products, parts and services, product quality, and the bargaining game between management and suppliers. Harris and

Raviv (1991) state that this model of capital structure has the potential to provide interesting results if investigated more specifically the relationship between capital structure and observable industry characteristics such as demand and supply conditions and extent of competition. They further opine on usefulness of explore on the impact of capital structure on the choice of strategic variables other than price and quantity. These could include advertising, research and development expenditure, plant capacity, location and product characteristics.

3.1.3.6 Naive Theory

The Naïve theory of capital structure assumes the perfect separation of investment and financing decision. Therefore, financing decisions maximizing the value of firm are decisions which minimize WACC. Moreover, the naïve theory assumes that the cost of debt and the cost of equity remain stable, regardless the amount of debt and equity issued by the firm. Because the cost of debt is supported to be lower than the cost of equity, the WACC declines with an increase in share of debt in capital structure. Thus the WACC is minimized when the firm is financed entirely by debt. The naïve theory will be refined in the part of devoted traditional theory of capital structure.

3.1.4 Optimum Capital Structure

An optimum capital structure would be obtained at that combination of debt and equity that maximizes the total value of the firm or minimizes the weighted average cost of capital (Pandey, 2000: 227)[61].

The optimum capital structure is obtained when the market value will be maximized or the cost of capital will be minimized when the real marginal cost of each source of funds is the same (Pandey, 2000: 258).[62]

According to NI approach, the optimum capital structure would occur at the point where the value of the firm is maximum, and the overall cost of capital is minimum. According to NOI approach overall cost of capital and cost of debt are constant and cost of equity increases with leverage continuously. In this approach every capital structure is optimum. According to traditional approach, there is an optimum capital structure for a company it will minimize the opportunity cost of capital and maximize the shareholder's wealth.

The objective of capital structure management is to mix the permanent sources of funds used by the firm in a manner that will maximize the firm's common stock price. Alternatively, this objective may be viewed as a search for the funds mix that will minimize the firm's composite cost of capital. It is called proper mix of funds sources i.e., the optimal capital structure (Kewon et al, op cit, 373)[63]

The optimal capital structure is approximated by the identification of target debt ratios. The target reflects the firms' ability to service fixed financing costs and also consider the business risk to which the firm is exposed (Kewon, et al op cit, 394)[64].

Here in the brief, about the optimum capital structure under different approaches can be taken as follows;

According to Net Income approach, the optimum capital structure would occur at that point where the value of the firm is maximum and the overall cost of capital is minimum. Under this approach, the firm will have the maximum value and the lowest cost of capital, when it is all debt-financed or has as much debt as possible.

According to Net Operating Income approach, overall cost of capital and cost of debt are constant and cost of equity increases with leverage continuously. As the K_O is constant, this approach implies that there is not any unique optimum capital structure. In other words, this means that, as the cost of capital is the same at all capital structure, every capital structure is optimum.

According to traditional approach, there is a capital structure and that the firm can increase the total value of the firm through the judicious use of leverage. The approach suggests that the firm initially can lower its cost of capital and raise its total value through the leverage. This approach implies that the cost of capital is not independent of the capital structure of the firm and there is an optimal capital structure. If there is an optimal capital structure for a company it will minimize the opportunity cost of capital and maximize the shareholders' wealth. Thus, to be an optimal capital structure, the combination of equity and debt should be such that cost of capital would be minimized and value of firm or shareholders' wealth would be maximised.

Similarly, financial managers should adopt the following guideline for choosing the right capital structure:

- If there are perfect market and no taxes, choose any type of capital structure which is supported by Miller and Modigliani in 1958.
- If the corporate tax rate is higher or lower whereas interest expenses are tax deductable, then the greater the amount of leverage the greater the tax savings other things being equal the company use highly debt capital.
- The effects of financial distress reduce the value of leverage to the firm the company use higher level of financial leverage.

The more difficult it is to liquidate the firm's assets; the greater is the potential penalty of financial distress. In this situation, the greater cost of financial distress the company uses lower level of financial leverage and vice versa. (Kolf, 1988:538-539)[65]

3.1.5 Determinants of the Capital Structure

The initial capital structure should be designed very carefully. The responsibility of financial manager is to deal with an existing capital structure and also make decisions for achieving the targeted capital structure. Every time, when the funds have to be procured, the financial manager weighs the pros and cons of various sources of finance and selects most advantageous sources of capital structure. Generally, the following factors should be considered whenever a capital structure decision has to be taken; (Pandey, 1986:260-269)[66]

(i) **Leverage effect on EPS** - The use of fixed sources of finance such as debt and preference share capital, to finance the assets of the

company is known as financial leverage. If the assets financed with the use of debt, yield a return greater than the cost of debt, the earnings per share increase without an increase in the owners' investment. The EPS also increases when the preference share capital is used to acquire assets. But the leverage impact is more pronounced in case of debt because the cost of debt is usually lower than the cost of preference share capital and the interest paid on debt is tax deductible. Because it affects on the EPS; financial leverage is one of the important considerations in planning the capital structure of a company. The companies with high level of earnings before interest and taxes can make profitable use of the high degree of leverage to increase return on the shareholders' equity. The firm is able to maximize the EPS when it uses the debt financing. Though, the rate of preference dividend is equal to the rate of interest, EPS is high in case of debt financing because the interest charges are tax deductible, while, preference dividends are not. The EBIT-EPS analysis is an important tool in the hands of the financial manager to get an insight into the firm's capital structure management and the financial manager can consider the possible fluctuations in EBIT and examine their impact on EPS under different financial plans.

(ii) **Cost of capital** - The debt and the preference share capital are cheaper than equity capital. The impact of financing decision on the overall cost of capital should be evaluated and the criterion should be to minimize the overall cost of capital, or to maximize the value of the firm. Generally, the combination of debt and equity, which minimizes the firm's average

cost of capital and maximizes the market value per share. In practice, there is generally a range of debt-equity ratio within which the cost of capital is minimum or the value is maximum.

(iii) **Growth and stability of sales** - Another determinant of the capital structure is growth and stability of sales. The company or firm with stable sales can employ a high degree of leverage. The likely fluctuations in sales increase the business risk. As a result, the shareholders perceive a high degree of financial risk if such companies employ debt. On the other hand, the sales of public utilities are quite stable and predictable. The expected growth in sales also affects the degree of leverage. The greater the expectation of growth, the greater the amount of external financing needed. The cheapest and most advantageous source of external financing is debt. The growth firms, therefore usually employ a high degree of leverage. The companies with declining sales should not employ debt or preference share capital in their capital structure, as they would find difficulty in meeting their fixed obligations.

(iv) **Control** - The control is the determinants of capital structure. The ordinary shareholders have legal right to elect the directors of the company. If company issues new shares, there is risk of loss of control. The shares of such a company are widely scattered. Most of the shareholders are not interested in taking active part in the company's management. They do not have time and money to attend the meetings. They are simply interested in dividends and the price of share. If they are not satisfied with the management of the company, they will sell theirs

shares to others. Thus, the best way to ensure the control and to have the confidence of the shareholders is to manage company most efficiently. A very excessive amount of debt can also cause bankruptcy i.e. complete loss of control.

(v) **Flexibility** - Flexibility is one of the most serious considerations in setting up the capital structure. It is the firms' ability to adapt its capital structure to the needs of the changing conditions. The capital structure of a firm is flexible if it has no difficulty in changing its source of funds. The company should be able to raise funds without undue delay and costs. The financing plan of the company should be flexible enough to change the composition of the capital structure. The degree of flexibility in the capital structure of a company depends on the flexibility in fixed charges, the terms of redemption and the debt capacity. Although Flexibility is most desirable, it is achieved at a cost. A company trying to obtain loans at easy terms will have to pay interest at a higher rate. Also to obtain the right of refunding, it will compensate creditors by paying a higher interest rate. Thus, the company should compare the benefits and costs of attaining the desired degree of flexibility and balance them properly.

(vi) **Size of the company** - The size of the company greatly influences the availability of funds from different sources. Generally, a small company has great difficulties in raising long-term loans. On the other hand, if it is able to obtain some long-term loan, it will be available at a higher rate of interest and inconvenient terms. Small companies depend upon share capital and retained earnings for theirs' long-term funds. The

shares of small companies are not widely scattered therefore, sometimes, the small companies limit the growth of their business to what can easily be financed by retaining the earnings. On the other hand, the shares of large company are widely distributed and it may be difficult to organize and to manage the widely scattered shareholders against the existing management team. A large company has a greater degree of flexibility in designing its capital structure. Such company can obtain the loans at easy terms as well as can sell their common stock, preference shares and debentures to the public. Because of large issues, its cost of distributing any kind of security is less than that for a small company. Thus, a company should make a best use of its size in planning the capital structure. Firm size has been studied as one of the fundamental determinants of the capital structure in most of the empirical studies. The rational for the belief that size is influential with respect to capital structure lies in the evidence that the larger firm may be more diversified, enjoys easier access to capital markets, have larger asset collaterlity, receive high credit rating for their debt issue, it is plausible that the size of the firm is positively related to the firm's capital structure. The positive relationship between firm size and capital structure was found by Marsh (1982), Friend and Lang (1988), Friend and Hasbrouck (1988), Rajan and Zingales (1995) and Booth et al (2001). The opposite observations have also been reported by among others, the studies of Kester (1986). Kim and Soren (1986) and Titman and wessels (1988).

(vii) **Marketability** - It is the readiness of investors to purchase a particular type of security in a given period of time. It doesn't influence the initial capital structure but it is an important consideration to decide about the appropriate timing of security issues. The capital markets are changing continuously. The market favors debenture issues and, at another time, it may readily accept common shares issues. Due to the changing market sentiments, the company has to decide whether to raise funds with a common share issue or with a debt issue. Thus, it should be considered in planning the capital structure to the company.

(viii) **Flotation cost** - It is not a very important factor influencing the capital structure. Flotation costs are incurred only when the funds are raised. Generally, the cost of floating a debt is less than the cost of floating equity. This may encourage a company to use debt than issuing common shares. If retaining the earnings increases the owners' capital, no flotation costs are incurred.

ix) **Asset tangibility** - Assets tangibility (TANG) has been studied as one of the independent variables affecting capital structure. Tangibility for this study has been defined as ratio of Fixed assets to total assets. According to the trade-off hypothesis, tangible assets act as collateral and provide security to lenders in the events of financial distress. Jinsen and Mekling (1976) states collaterlity also protects lenders from moral Hazards problems caused by shareholders-lenders convict. Thus, firms with higher tangible assets are expected to have high level of debt. The effect of fixed assets (the asset tangibility) on the capital structure is found positive by

numbers of studies (Long & Maliz, 1985; Titman & Wessels, 1988; Friend & Lang. 1988; Jensen. 1992; Dawns, 1994; Rajan & Zingels. 1995; Jordan et al.. 1998: Hirota. I999: Beavan & Donbold, 2000; Booth et al. 2001; and Frank and Goval. 2004). Few studies also reported the negative relation of asset tangibility and leverage (Comelli et al., 1996 and Casser & Holmes, 2003). It seems that there is an agreement to a larger degree among studies on the positive influence of asset tangibility on the leverage. Such agreement seems to support the trade off theory, which claims higher asset tangibility increases the level of debt.

x) **Profitability** - Profitability (ROA) of the firm has been another independent variable extensively examined in the empirical studies. It is commonly believed that higher the profitability higher would be the proportion of equity than debt in capital structure of a firm. This is because there is strong tendency for reserves to be large in case of profitable firm. So, it seems that firms with higher profit will be able to finance projects with internally generate funds (retained earnings) rather than depending on the debt financing. This may not be the case for non-profitable firms. which may have to depend on the external financing. According to the pecking order & (Myers, 1984), the profitability is expected to be negatively related to optimal structure level since the internally generated funds serves as the sources of capital for profitable firms. Among others, Titman and Wessel (1988), Friends and Lang (1988), and Rajan and Zingales (1995), Booth et al. (2001), and Frydenberg, (2003) clearly showed the negative relationship between profitability) and capital structure. As opposed to pecking order

theory. Profitability may also be positively related to capital structure since profitable and growing firms need more capital to exploit the opportunities. The studies that showed positive relationship of profitability with the capital structure are Long and Maliz (1985). Chawdhurv et al. (1994) and Jordan . et al. (1998), among others.

xi) **Growth** - Growth (GROW) of the firm may also have influence on the capital structure level of many studies have examined growth variables as one of the important independent variable of capital structure. The growing firms often need to expand their fixed assets. The higher credit standing coupled with the increasing demand of output extents growing firms to practice trading on equity to a much greater.ant then is possible for slow growing firms. Therefore, fast growing companies rely more heavily on external capital, especially on the use of debt. According to the pecking order theory, the growing firms may have higher level of debt as growing firms may not have adequate retained earnings and go for debt as aganist to equity'. The trade off theory suggested positive relation because high growing firms try to maintain the target debt ratio as the retained earnings increases for these firms. Consistent with this argument, the studies of Aubach (1985) and Kester (1986). Chang and rhee (1990), Thies and Klock (1992), Dawns (1994), Chatrath (1994) and Beavan and Donbold (2000), among others, concluded that growth variable is positively related to the firm's leverage. Contrarily, Chaplinsky and nehaus (1990), Rajah and Zingales (1995). Michael et al. (1999). Hirota (1999) and ushers indicated growth variable to be negatively related to the leverage. This hypothesized

the growth variable to be positively related to debt ratios. This follows the trading on equity argument. Empirical studies have measured the growth variable in different ways. Among the various measure of growth of company some important ones are rate of change in earnings. sales, dividends and retained earnings. However this study measures growth of the firm as percentage change in total sales from the last year sales figure.

xii) **Risk** - Risk (BRISK) of the firm as represented by the higher earning variability has also been considered as an important determinant of capital structure in many empirical studies. Theoretical literature argued that Greater the risks (earning variability) faced by a firm, lower is its debt level (DeAngalo & Masulis, 1980). The argument here is that an additional unit of debt increases the likelihood of bankruptcy for the firm. The negative relationship between the earning variability and capital structure has been theorized with the logic that increase in leverage increases the probability of bankruptcy and high volatility of earnings increases the uncertainty in meeting its obligations. Alternatively. it can be said that the firms with stability of earnings can insists on higher use of debt capital as it can undertake the fixed obligation debt with lesser risks. But the results of empirical literature regarding the relationship between risks and leverage are contradictory. This logic of negative relationship has been supported by the findings of Bradley et al. (1984). Titman and Wessels (1988). Friend and Hasbrouck (1988), Chang and Rlhee (1990). Jensen et al. (1992). Jordan et al. (1998). Panday (2001) among others. But. the results of the Aubach (1985). Kim and Soren (1986). Chang (1990). Lowe et al. (1994).

Jordan et al. (1998) contradicted with this logic. However consistent with the bankruptcy risk argument. it is hypothesized that there is negative relation between risk and the leverage. If the negative relation of a sound trade off theory of capital structure under bankruptcy costs argument may be validated. Although different studies have used such as changes in EBIT and variance. Standard deviation or coefficient of variation of four to five years earnings as measure of risks, this study has measured risk as percentage change in earnings before interest. Taxes and depreciation (EBITD) from last year to this year divided by last year's EBITD figure.

Moreover, business risk of the firm is measured by its degree of operating leverage. This equals the percentage change in earnings before interest and taxes over the percentage change in sales. The negative relationship between leverage and business risk is found (Babu and Jain (1997). Both agency and bankruptcy cost theories suggest the negative relation between the capital structure and business risk. The bankruptcy cost theory contends that the less stable earnings of the enterprises, the greater is the chance of business failure and the greater will be the weight of bankruptcy costs on enterprise financing decisions. Similarly, as the probability of bankruptcy increases, the agency problems related to debt become more aggravating. Thus this theory suggests that as business risk increases, the debt level in capital structure of the enterprises should decrease (Taggart 1985). Studies during 1980s show the contradictory evidence in this regard (Martin and others 1988).Studies carried out in India and Nepal also shows the contradictory evidence on the relation between

the risk and debt level. Sharma (1983) and Chamoli (1985) show the evidence against, and Garg (1988) and Paudel (1994) do for the relation consistent with the bankruptcy and agency cost theories. Thus, this study assumes the hypothesis as: business risk is negatively related to (1) total leverage, (2) long-tem leverage, and (3) short term leverage. The selection of the variables (dependent and independent) is primarily guided by the results of the previous empirical studies and the viability of data. Three measures of leverage will be used in this study. The first measure of leverage divides total liabilities by total assets. The second measure divides long-term debt by total assets. Third measure divides short-term debt to total assets. Short-term debt is defined as the portion of the company's total debt repayable within one year. This includes bank overdraft, bank loans payable within a year and other current liabilities. Long-term debt is the company's total debt repayable beyond one year. This includes long-term bank loans and other long-term liabilities repayable beyond one year such as directors' loans, hire purchase and lease obligations. The total debt includes the short term and long term debt.

xiII) **Non debt tax shield (NDTS)** - The basic argument of corporate tax theory of capital structure is that the firm will exploit the tax deductibility of the debt interest payments to reduce its tax bills. If this the case, then the firms that have other non-interest tax shields items, such depreciation. Tax credit, pension fund, have less need to exploit the debt tax sheild. In fact. if a firm in such position issues excessive debt, it may become "tax-exhausted" in the sense of having potential tax shields which it is unable to

use. Thus, the incentive to finance with debt diminishes as the non-debt tax shields (NTDS) increases, where debt is crowded out". In addition, there is a further effect that arises from the risk of bankruptcy. DeAngelo and Masulis (1980) developed a model of optimal capital structure which incorporated the impact of corporate and personal tax; and the non debt related tax shields. Their argument is that firms can use non-debt tax shield to reduce corporate tax payments. These are substitutes for the tax benefits of debt financing. Therefore, firms that have higher non-debt tax shields are likely to use less debt. DeAngello and Masulis (1980) postulate that the marginal corporate tax savings from an additional unit of debt declines as the non-debt tax shields increase. This is a result of the increased likeli;hood of bankruptcy occurring at higher debt levels. These arguments suggest that there should be negative relationship between debt and non-debt tax shields. In support of the hypothesis of DeAngelo and Masulis (1980), the study of titman and Wessels (1988). Jensen et al. (1992), Chairella et al. (1992). Shenoy and koch (1996). Kale et al. (1998). and Hfrota (1999) found negative relationship between non debt tax shield and leverage while the converse evidence have been Provided by Bradley et al. (1984). Chaplinsky and Niehaus (1990), and Dawns (1994). Despite the empirical differences, the current study hypothesizes the inverse relationship between non-debt tax shield and leverage is expected to exist. This relationship also tends to support the trade off theory. To test the hypothesized relationship the non-debt tax shield has been measured by

taking the Total annual depreciation charge to fixed asset as used by Titman and Wessel (1988) as proxy for non-dent tax shield.

xiv) **Liquidity** - Liquidity (LIQUID) of the firm may also have an impact on the capital structure decision. Contrary to the evidences of positive relationship between fixed asset and leverage, the relationship between liquidity and leverage may be expected to the negatively related. The higher liquidity of film may imply that companies with higher level of unutilized and un-invested fund may avoid use of debt in their capital. In addition, not only they avoid use of debt; rather tend to retire the sting debt and other short term obli[g]ation with the unutilized funds. Beside, funds in the form of excess liquidity may be used by the firms to finance new projects. This avoids the debt borrowing for *new* projects. All these actions due to *higher* liquidity *in* the firm result into firm's capital structure to be equity dominated. Empirical studies have also shown the negative relation of liquidity with the debt level (Lowe et el., 1994; Shenoy & Koch, 1996: and Jordan et al). With the similar argument, The negative relation of net working capital ratio with the leverage has been reported in Indian context (Sharma. 1995). Thus, consistent with the above argument this study hypothesizes the negative relationship between liquidity and leverage. The liquidity for this purpose has been measured by dividing current assets by current liabilities.

xv) **Uniqueness** - According to Titman and Wesseles (1988), selling expenses over sales has been measured as an indicator for uniqueness. This is because firms that sells products with close substitutes likely to do

less research and development since those innovations can be more easily duplicated. In addition, successful research and development projects lead to new products that differ from those existing in the market. Firms with relatively unique products are expected to advertise more and, in general, spend more in promoting and selling their products. Hence, those expenditures are expected to be positively related to uniqueness. However, in Nepalese context, this study will use the selling and administrative expenses over net sales (SANS) to measure the uniqueness of the products. There are three rationales to select this proxy in the study. First, it has been significantly tested by Titman and Wesseles (1988) as a linear function of leverage in Linear Structural Relationship (LISREL). Second, Research and Development (R&D) and advertising d advertising expenditures are not separately reported. Third, most firms in the sample are manufacturing firms. The study assumes the hypothesis as uniqueness is negatively related to (1) total leverage, (2) long-term leverage and (3) short term leverage.

Therefore, the financial manager should consider above-mentioned factors in planning their optimal capital structure of the company. If the financial manager ignores any factors, then the capital structure of a company may become a failure.

3.1.6 Assumption of Theory of Capital Structure

The following assumption has been made under this theory :

- There are no corporate or personal income tax and no bankruptcy cost.

- The ratio of debt to equity for a firm is changed by issuing debt to repurchase stock or issuing stock to pay off debt. In other words, a change in capital structure is effected immediately. In this regard, there are no transaction costs.
- The firm has a policy of paying 100% of its earnings in dividends.
- The operating earnings of the firm is not expected to grow. The expected values of the probability distributions of expected operating earnings for all future periods are the same as present operating earnings.
- The degree of leverage can be changed by selling debt to repurchase share or selling shares to retire debt. (van Horne :228)[67]
- The expected value of the subjective probability distributions of expected future operating earnings for each company, are the same for all investors in the market.
- Firms employ only two types of capital i.e. debt and equity and the business risk is assumed to be constant and independent of capital structure and financial risk. (Panday, 1986 :228)[68]

In this analysis of capital structure theories, following three rates are concerned: (van Horne: 252)[69]

(i) $k_i = \frac{F}{B}$

(ii) $K_e = \frac{E}{S}$

(iii) $Ko = \frac{NOI}{V_f}$

Where, $^{V}_{f}$ = B + S. Here, k_o is an overall capitalization rate for the firm. It is defined as the weighted average cost of capital and may also be expressed as follows;

$$^{K}_{o} = k_i \ (^{B}/_{B+S}) + K_e \ (^{S}/_{B+S})$$

Where, k_i = Cost of debt

F = Annual interest charges or total interest payment.

B = Market value of debt outstanding.

K_e = Cost of equity.

E = Earnings available to common stockholders.

S = Market value of stock outstanding.

EBIT = Earnings before interest & taxes.

k_o = Overall capitalization rate or overall cost of capital.

NOI = Net operating income or earnings.

V_f = Total market value of the firm, (i.e. B+S).

3.1.7: Concept of Cost of Capital

The term cost of capital is the rate of return required on a capital investment. It is synonymous with the term-required return. The weighted average cost of capital is a technique that measures required return in terms of the individual components of the firm's capital structure. The cost of each debt component and return on each equity component are separately identified with a weighted value. By adding together each weighted component, an overall required return can be determined; that is,

a sufficient return to cover interest payments on the firm's debt and dividends for preferred shareholders and still to provide an adequate return to common shareholders for the risk that they accept. (Hampton, 1991: 346)[70]

A firm's cost of capital serves as the linkage between the firm's financing decisions and its investment decisions. The cost of capital becomes the hurdle rate that must be achieved by an investment before it will increase shareholder wealth. The term cost of capital is frequently used interchangeably with the firm's required rate of return, the hurdle rate for new investments, the discount rate for evaluating new investments, and the firm's opportunity cost of funds. Regardless of the term used, the basic concept is the same. The cost of capital is that rate which must be earned on an investment-project if the project is to increase the value of the common stockholders' investment in the project. (Kewon et al , op cit :328)[71]

The cost of capital is the minimum rate of return on the investment projects to keep the market value per share unchanged. Thus, the costs of capital theory and valuation theory are intimately related. The wealth maximization objective requires that the shareholder's funds raised by issuing shares or by retaining net earnings, should be so utilized that the firm earns a return on them equal to the return expected by the shareholders. If the firm fails to earn the expected rate, the market value of share would fall, and the shareholders' overall wealth will be reduced. Similarly, the fund raised by issuing debt and preference capital should be

used only when they do not reduce the market value per share. The market value per share will remain unaffected by debt or preference issue if the firm earns, at least, a rate of return on the projects financed by these funds equal to the cost of raising them. However, there exist various concepts of the cost of capital, all of which are not relevant for all purposes. Thus, for a proper understanding of the application of the cost of capital in financial decision-making, its various features are as below; (Pandey, 1986:164-181)[72]

- Future cost and Historical cost:- The relevant costs are future costs. It is the future cost of capital, which is significant in financial decision-making. In designing the capital structure, the firm aims at minimizing the future cost of capital, not the costs are significant to the extent they help in predicting the future costs and provide an evaluation of the past performance when compared with standard, or predetermined costs.

- Specific and combined cost:- The cost of each component of capital (e.g., common shares, debt, preference shares etc.) is known as the component or specific cost of capital (of the specified component). The concept of the cost of capital used in this sense implies that, in order to accept or reject the investment projects, their profitability should be evaluated on different cost bases, depending on the specific sources of funds used to finance particular projects. The combined cost of capital is inclusive cost of capital from all sources; debt, equity and preference capital. Thus, it is the overall

mix of financing over time, which is important in valuing firm as an ongoing overall entity.

- Average cost of marginal cost:- It is the weighted average of the costs of each component of funds employed by the firm, the weights being the propositions of each component in the capital structure. The marginal cost of capital is the average cost of new or incremental funds raised by the firm.
- Explicit cost and Implicit cost:- The explicit cost of any sources of capital may be defined as the discount rate that equates the present value of the cash inflows that are incremental to the taking of the financing opportunity with present value of its incremental cash outflows. The implicit cost may be defined as the rate of return associated with the best investment opportunity for the firm and its shareholders that will be forgone if the project presently under consideration by the firm were accepted.

In financial decision-making, the term cost of capital should be used in the composite sense. The composite or overall cost of capital is the weighted average of the cost of various sources of funds, weights being the proportion of each source of funds in the capital structure. It should be remembered that it is the weighted average concept, not the simple average, which is relevant in calculating the overall cost of capital. The simple average cost of capital is not appropriate to use because the firms hardly use various sources of funds equally in the capital structure.

The weighted average required return could be expressed by the formula as below: (Hampton: 346)[73]

$$E(_{rtn})_{req} = (\%D_{mkt})k_i\ (1\text{-}tr) + (\%PS_{mkt})\ K_{ps} + (\%CS_{mkt})k_e$$

Whereas,

$E(_{rtn})_{req}$ = Overall required return for the firm

$\%D_{mkt}$ = Percentage in the capital structure of debt

k_i = Before cost of debt

1-tr = 1 minus the firm's corporate tax rate

$\%PS_{mkt}$ = Percentage in the capital structure of preferred stock

K_{ps} = required return on preferred stock

$\%CS_{mkt}$ = Percentage in the capital structure of common stock

k_e = required return on common stock

Specific costs of capital for various sources of finance: The specific costs of capital for various sources of finance can be discussed as below: (van horne , op cit : 208)[74]

- Cost of debt: - To drive the explicit cost of debt, we solve for the discount rate, k_i that equates the net proceeds of the debt issue with the present value of interest plus principal payments. Then we adjust the explicit cost obtained for the tax effect. After-tax cost of debt can be calculated by; $k_i = Kd\ (1\text{-}t)$.

  Whereas, k denotes the interest rate of return or yield, t denotes the marginal tax rate and k_i is the cost of debt (after tax). Because

interest charges are tax deductible, the after tax cost of debt is substantially less than the before tax cost.

- Cost of preferred stock:- The cost of preferred stock is a function of its stated dividend, this dividend is not a contractual obligation of the firm but is payable at the discretion of the board of directors. Consequently, unlike debt, it does not create risk of legal bankruptcy. To holders of common stock, however, preferred stock is a security interest that takes priority over theirs. Most corporations that issue preferred stock intend to pay the stated dividend. As preferred stock has no maturity date, and its cost may be represented as; (Vanhorne :209)[75]

$$k_p = \frac{D}{Io}$$

Whereas, D represents the stated annual dividend, I_o is the proceeds of the preferred stock issue. Cost of preferred stock is not adjusted for taxes, because the preferred stock dividend is paid after taxes. Therefore, the explicit cost of preferred stock usually is greater than that of debt.

- Cost of retained earnings:- The companies can retain earnings instead of paying dividends to the shareholders. Thus, it is sometime observed that this source of finance is cost free. But retained earnings involve an opportunity cost. The opportunity cost of retained earnings exists if the dividend is forgone by the shareholders.

However, the cost of retained earnings is measured by; (panday,1986 :177)[76]

$$k_r = \frac{D}{Po} + g$$

Whereas, 'k_r' is the cost of retained earnings. Thus, the cost of retained earnings is the return expected (i.e. dividend yield plus growth in dividends) by the common shareholders on their investment. 'Po' is the market price of the share, 'g' denotes growth rate and 'D' represents the annual dividend.

In the absence of personal taxation and brokerage costs the flotation costs of the new issue $k_e = k_r$. This implies that if dividends would have been paid to the shareholders, they could have invested these dividends in the firms of similar risk and earned, at least, a rate of return equal to k_e.

Thus, the k_e is the opportunity cost of retained earnings when (i) the shareholders do not pay any tax on dividends, and (ii) incur no brokerage costs when investing the dividend received. However, even if these assumptions hold, the cost of external equity will be higher than the cost of retained earnings, because the later does not involve any flotation costs. In practice, these assumptions do not hold.

3.1.8 Concept of Financial Leverage

A company can finance its investments by a variety of sources, such as debt, preference share capital and common stock, including reserve and surpluses. The rate of interest on debt is fixed irrespective of the

company's rate of return on assets. The company has a legal binding to pay interest on debt. The rate of preference dividend is also fixed, but the preference dividends are paid when the company earns profits. The common shareholders are entitled to the residual income, i.e. the earnings after interest & taxes and preference dividends belong to them, where the rate of equity dividends is not fixed and depends on the dividend policy of the company. The use of the fixed charges sources of funds, such as, debt, preference share capital along with the owners' equity in the capital structure is described as financial leverage.

The financing or capital structure decision is a significant managerial decision as it influences the shareholders' return & risk. Consequently, the market value of the share is affected by the capital structure decision. The company will have to plan its capital structure initially at the time of its promotion and subsequently, whenever funds have to be raised to finance investments a capital structure decision is involved. (Pandey, op Cit: 203-205)[77]

Effect of financial leverage on the shareholders' earnings:- The primary motive of a company in using financial leverage is to magnify the shareholders' earnings under favourable economic conditions. The rate of financial leverage in magnifying the earnings of the shareholders is based on the assumption that the fixed charges funds can be obtained at a cost lower than the company's rate of return on its assets. Thus, when the difference between the earnings generated by assets financed by the fixed charges funds and the cost of these funds is distributed to the

shareholders, they get additional earnings without increasing their own investments. Consequently, the earning per share or the rate of return on common shareholders' equity increases. However, the company's earnings per share or the rate of return on equity will fall if the company obtains the fixed charges funds at a cost higher than the rate of return on the company's assets. The EPS and the rate of return on equity are important figures for analyzing the impact of financial leverage. The EPS return on equity can be calculated as follows: (panday :208-208)[78]

$$EPS = \frac{(X-R)(1-t)-D}{N}$$

Whereas, X = earnings before interest & taxes (EBIT)

R = interest charges

t = tax rate

N = number of common share outstanding

$$\text{Return on equity (e)} = \frac{(X-R)(1-t)\,D}{E}$$

Where, 'E' represents the common shareholders' funds (share capital plus reserves & surpluses) or net worth.

In general terms, leverage may be defined as relative change in profits due to a change in sales. A high degree of leverage means that a large change in profits occurs due to a relatively small change in sales. In business terminology, leverage is used in two senses." (Panday, op Cit: 591-594)[79]

(i) Operating leverage and

(ii) Financial leverage.

Operating leverage refers to the use of fixed costs in the operation of the firm. A firm has a high degree of operating leverage if it employs a greater amount of fixed costs and a small amount of variable costs. On the other hand, if the firm incurs a greater amount of variable costs and employs a small amount of fixed costs, it has a low degree of operating leverage. The profits of a highly leveraged (operating) firm will increase at a faster rate than the increase in sales. However, if the sales fall, the firm with a high degree of operating leverage will suffer a great loss than a firm with low or moderate degree of operating leverage.

The degree of operating leverage (DOL) may be defined as the percentage change in profits resulting from a percentage change in sales. DOL may be expressed in the equation form as follows;

$$DOL = \frac{\text{Percent change in profits}}{\text{Percent change in sales}}$$

Or,

$$DOL = \frac{\text{Contribution margin}}{\text{EBIT}}$$

Operating leverage affects EBIT, while degree of financial leverage (DFL) affects earnings after taxes & interest.

A sound or appropriate capital structure should have the following features;

→ *Profitability*: The capital structure of the company should be most advantageous. Within the constraints, maximum use of leverage at a minimum cost should be made.

→ *Solvency*: The use of excessive debt threatens the solvency of the company. To the point debt doesn't add significant risk, it should be used. Otherwise its use should be avoided.

→ *Flexibility*: The capital structure shouldn't be inflexible to meet the changing conditions. It should be possible for a company to adapt its capital structure with a minimum cost and delay if warranted by a changed situation. It should also be possible for the company to provide funds whenever needed to finance its profitable activities.

→ *Conservatism*: The capital structure should be conservative in the sense that the debt capacity of the company should not be exceeded. The debt capacity of a company depends on its ability to generate future cash flows. It should have enough cash to pay creditors' fixed charges and principal sum.

→ *Control*: The capital structure should involve minimum risk of loss of control of the company." (panday , op cit : 258-259)[80]

3.1.9 Efficiency of Capital Structure

The relationship of operating leverage and financial leverage with the variability of a firm's profit has been widely discussed in finance literature. Financial leverage measures a firm's exposure to financial risk. Therefore degree of financial leverage indicates the percentage change in

EPS emanating from a unit percentage change in EBIT. In general, a firm's short term financing needs are influenced by current sales growth and how effectively and efficiently the firm manages its net working capital. Note that on-going short term financing needs may reflect a need for permanent long term financing, including an evaluation of the appropriate mix and the use of debt and equity, that is, the capital structure.

Financial leverage can accelerate EPS under favourable economic conditions .But the unfavourable effect of financial leverage on EPS is more severe with more debt in the capital structure when EBIT is negative. Similarly the firm's financial leverage can increase shareholders' return and as well could increase their risk.

According to Pandey (1999), the financial leverage employed by a company is intended to earn more on the fixed charges funds than their costs. The surplus (deficit) will increase (or decrease) the return on the owners equity, referred to as a double-edged sword, financial leverage provides the potentials of increasing the shareholders' wealth as well as creating the risks of loss to them.

Gaius (2007) opines that operating leverage is created by fixed operating costs, such as general administrative overhead expenses, contraction employees' salaries and mortgage or lease payment, these trends to elevate business risk. The impact of operating leverage is evident, when a given percentage changes in net sales results in a greater percentage change in operating income (EBIT). Mandelkar et al (1984) observe that DOL and DFL combine to magnify a given percentage change

in sales to a potentially much greater percentage in EBIT. Infact, operating and financial leverages together cause wide fluctuation in EPS for a given change in sales. If a company employs a high level of operating and financial leverage, even a small change in the level of sales, will have dramatic effect on EPS. A company with cyclical sales will have a fluctuating EPS, but the swings in EPS will be more pronounced if the company also uses a high amount of operating and financial leverage.(Ishola et al, ,2008 , P23-.24)[81]

Therefore, there is the need to combine degree of operating and financial leverages to see the effect of total leverage on EPS associated with a given change in turnover as a result of improved purchasing power enabled by capital structure.

3.1.10 Review of Empirical Works

3.1.10.1 Review of Empirical Works during 1980's and upto 1990's

There are many empirical studies on capital structure that took next turn after the seminar paper on agency cost theory of Jensen and Meckling (1976) and the incentive signalling approach of Ross (1977) and Leland and Pyle (1977). Though, few studies have been carried out on general trend of capital structure, industrial and firm's characteristics as an impact of leverage on cost of capital, most of studies are related to the agency cost asymmetric information theory of capital structure.

The works Masuli (1988) and Taggart (1985) highlighted on the general trend of capital structure. Masuli showed that distributed profit

account for about 22 percent of total sources of funds of non-firms, non-financial corporate business in 1986. The Figure, in average, was about 49 percent over the period of 1946 -1966 in U.S.A. Taggart (1985) in his study, provides that an account on secular trends in leverage by using varieties of measurements. He concluded that there was increasing trend of leverage in U.S.A., since the Second World War. Taggart again found that debt was 45 percent of total sources of funds for U.S.A non-financial corporation. He further showed the increasing trend of debt financing until the Second World War till 1974 and decreasing trend after 1974. In his study, he showed that debt financing was used to an unprecedented extent during the period of 1980s. It is argued that debt financing has come down to the level that is not high by historical standards after 1974. The Summarised form of these Empirical studies is presented in Table below:

Table 3.1 A glance of Empirical Studies and their finding during 1980's

Study	Area Covered	Major Findings
Flath and Knoeber (1980)	Test of MM hypothesis	Rejection
Bawen et al. (1982)	Industrial influence on leverage.	Statistically significant.
Bradley et al. (1984)	Impact of industry and firm's characteristics on leverage.	Strong industrial influence, inverse association of leverage with volatility of firm's earning, R and D and advertisement expenditure and positive association with non-debt tax shield.
Taggart (1985)	General trend of capital structure in U.S.A.	Increasing trend in post war period.

Long and Maitz (1985)	Effect of industry and firm's characteristics on leverage.	Insignificant effect on Clientele tax rate, Positive and significant effect of growth rate variance of earning, but positive and insignificant effect of the rate of depreciation on leverage.
Auebach(1985)	Effect of firm's characteristics on leverage.	Insignificant effect on Clientele tax rate, positive and significant effect of growth rate variance of earning, but positive and insignificant effect of the rate of depreciation on leverage.
Kester (1986)	Effect of industry and firm characteristics on leverage.	Industrial influence, negative impact of growth opportunity on leverage.
Kim and Sorensen (1986)	Effect of firm characteristics on leverage.	Positive effects of volatility and managerial equity ownership, and negative effect of non-debt tax shield, growth opportunities and size on leverage of the rirm.
Titman and Wessels (1988)	Determinants of capital Structure.	Negative effect of volatility non debt tax shield, profitability growth opportunities, size and uniqueness, on leverage and positive effect on fixed assets on leverage.
Wedig et al. (1988)	Determinant of capital structure for Hospital	Statistically no significant influence of ownership on capital structure negative association of leverage with volatility negative and significant association of tax shield, negative association of volatility and positive and statistically significant of collateral value with leverage.
Friend and Long (1988)	Effect of firm's characteristics on capital structure.	Positive effect of fixed assets and size: and negative effect of profitability, volatility and managerial ownership.

Mausli (1988)	General trend of capital structure.	Increasing trend.
Friend and Hasbrouck (1988)	Determinant of leverage.	Negative association of Volatility, profitability, managerial equity ownership and positive association of fixed assets, size of the firm and liquidation value with leverage.

Table 3.2 reports that the result of review of Indian Studies after 1980s. The most of the Indian studies are concerned with the impact of leverage on cost of capital.

Table 3.2 : A glance of review of Indian Studies and findings during 1980s.

Study	**Area Covered**	**Major Findings**
Bhat (1980)	Characteristics determinants of leverage	Leverage is not related with size, growth rate, degree of operating leverage, and it is negatively related to dividend payout ratio and earning rate of debt service capacity of the firms.
Pandey (1981)	Relationship between leverage, and cost of capital, effect of leverage on cost of equity and effect of tax deductibility on cost of capital.	Negative association of leverage with cost of capital negative affection cost of capital after deduction of tax effect and inconclusive result on the effect of leverage on cost of equity.
Sharma (1983)	Impact of firm's characteristics on capital structure on chemical and pharmaceutical industry (1969-78)	(i) Effect of profitability and age is negative and statistically significant. (ii)Effect of size, growth business risk and assets structure is positive and statistically significant except to the

		effect of size. (iii)Overall cost of capital has strong negative linear relation with debt equity ratio at the lower range of debt-equity and significant at higher debt equity level. (iv)Effect of debt equity on value of the firm is negative.
Matta (1984)	Industrial and firms characteristics of determinants of capital structure.	(i) Industrial influence on capital structure is significant. (ii) The financial structure of small-scale company is debt dominated especially by short-term debt and large scale Cos are highly equity biased capital structure. (iii)The rapidly growing Cos is found to have equity dominated financing along with.
Srivastava(1984)	Test of MM valuation model	Rejection of MM model
Pandey (1984)	Attitude survey of practicing manager of India.	(i) Existence of optimal capital structure. (ii) Debt capital is prerecording to equity capital (iii) Profitability quality of management and security were most important further for lending.
Singh (1981)	Capital structure of public Ltd. Companies	Size of the firm is relevant to the capital structure.
Venkatesor (1983)	Industrial influence on capital structure.	No significant industrial influences on capital structure.
Banerjee (1984)	Trend in capital structure of	(i) Average D-E ratio of

	medium and large-scale public Cos. and Central Government Cos.	medium and large scale public Ltd. Cos. is 2:1 and it is at the vicinity of 1:1 in central government Cos. (ii) Initially predominant role of equity but debt proportion is increasing in central government Cos. during the period of 1960-61 to 1969-70. (iii)Retention played negative role in the capital structure of central government Cos. during the period of 1962--63 to 1975-76. (iv) Sectoral influence on the capital structure of corporate sector.
Chamoli (1985)	Patterns of financial mix of cement industry.	(i) Sectoral influence on capital structure. (ii) D-E ratio in private sector is higher than that of public sector and is in increasing trend in both sectors. (iii) Debt capital and fixed assets, and D-E ratio and debt coverage ratio are positively related.
Pandey (1985)	Industrial and firm's characteristics as determinants of leverage (1973-74 to 1980-81)	(i) Leverage decision is independent to size, profitability, growth and industrial variation. (ii) Level of leverage is in increasing trend.
Bhattacharya	Capital structure of central public sector undertakings.	Unmanageable load of loan in capital structure of public sector undertakings effects the profitability adversely.

Quadros (1986)	Structural characteristics of a firm as a determinants of financial structure	Structural factors-size, and concentration ratio, influence the financial structure of cement industry significantly.
Mall (1986)	Trend in capital structure in medium and large-scale Pvt. Ltd. Cos. (1960-61 to 1982-83)	(i) Increasing trend in capital structure. (ii) Industrial influence. (iii) Negative correlation between D-E ratio and profitability.
Garg (1988)	Optimal capital structure along with its determinants.	(i) Industrial influence is not strong determinant of capital structure (ii) Impact of non-debt tax on leverage is positive and insignificant. (iii)Impact of earning variability on leverage is negative and insignificant. (iv)Impact of asset structure is positive and highly significant. (v) Positive association between the cost of equity and use of debt but insignificant.

Source: Harris and Raviv, 1991. The Theory of Capital Structure. pp. 331-349.

The variables affecting the decision of capital structure as selected by Indian scholars includes size of the firm, assets structure, growth rate and profitability. Sharma (1983) concluded the positive impact of size of the firm on debt equity ratio. Similarly Sharma (1983), Chamoli (1985) and Garg (1988) showed the evidences of direct association of debt-equity ratio with assets structure of the firm. Sharma (1983) suggested that there exist positive relationship between debt, equity ratio and growth rate while Matta (1984) found the negative relationship between them. Indian studies showed contradictory results on risk measured in term of business risk and

debt-equity ratio. Sharma (1983) and Chamoli (1985) concluded the positive relationship between these two variables, which is against the theoretical expectation. Garg (1988) suggested the result in agreement with the theoretical relation existing between them. Sharma (1983) and Mall (1986) found the adverse relationship between the profitability and debt-equity ratio.

Pandey (1981) tested the relationship between cost of capital and leverage, effect of leverage cost of equity and effect of tax deductibility on cost of capital in Indian context. In a cross-sectional analysis of 131 observations drawn from cotton chemical, engineering and electricity industries for the years 1968, 1969 and 1970, he found that MM independent hypothesis does not hold reliable especially in the context of India. Again, in 1984, he conducted an attitude survey of practicing managers of 30 Indian companies and drew the conclusion that Indian Practicing manager have the concept of optimal capital structure and it should be maintained by every company.

Table 3.3: Nepalese Studies, Areas Covered and Major Findings (1980-1989)

CCD,HMG, Nepal (1981)	Performance of PEs	Findings
Shrestha,M (1983)	Financial Planning	(i) Low capital gearing in public utilities in initial phase. (ii) Aggregate trend of public utilities during the period 1962-63 to 1966-67 is low, substantial decrease from 1967-68 to 1970-71 (iii) Bo pattern of aggregate trend of capital structure during the period 1966-67 to 1974–75
Shrestha, M (1985)	Capital Structure of PEs	(i) Capitalisation rate is less than satisfactory level. (ii) Capital structure is low levered in most of the selected PEs. (iii) Very imbalanced capital structure.

Source: Shrestha, M.K. 1985, Kathmandu, Prashasan: Journal of Public Administration,16(2).47.

3.1.10.2 Review of Empirical Works during 1990s and early 2000s

Agrawal and Nagararjun (1990) provided the evidences that all equity firms have greater family involvement in corporate operation than in levered firms. And managers of all equity firms have greater control of corporate voting right. This finding implies that human capital involved in the firm affects the capital structure through the agency problems. Isareal et al. (1991) revealed that there was positive association of leverage with value of the firm in agreement with results of asymmetric information model. Kale et al. (1991) derived the functional relationship between risk an optimal debt level in the De – Agelo and Masuli framework and showed this functional relationship roughly in U – shape in the empirical cross section test for two years 1984 and 1985. Kim et al. (1991) and Levey and Lazarovichporat (1985) furnished that the evidence on the market relation to the information context of financial leverage.

Kim et al (1991) concluded that the data on financial leverage, with information content, the market to changes in financial leverage and direction of the market reaction depends on financial leverage. Similarly, levey and Lozarovichporat (1985) suggested the positive market reaction to the project. Hull (1999) studied using 338 observations for 1970 – 1988 and concluded that the market reaction to leverage decrease announcement depends on how a firm's change relative to its industry norms. Both et al. (2001) and Chui et al. (2002) concluded that country factor and cultural factors are determinants of capital structure. Both et al. (2001) found debt ratios in developing countries seem to be affected by the country factor,

such as GDP growth rates, inflation rates and development of capital market. In the same way, Chui et al. (2002) studied 5551 samples firms across 22 countries considering a cultural factor that also serves prominently as determinants of capital structure. The study and finding of the above mentioned information is summarised in the table below:

Table 3.4: Description of Empirical Works during 1990s - 2000

Study	Area Covered	Major Findings
Agrawalla and Nagarajan (1990)	Factor influencing capital structure decisions of all equity firms.	(i) All equity firms have greater family involvement in corporate operation than levered firms. (ii)Managers of all equity firms have greater control of corporate voting. Rights.
Isreal et al. (1991)	Information contest of equity.	Leverage is positively related to firm value.
Kale et al. (1991)	Relation between business risk and optimal debt level.	Leverage is positively related with firm value.
Kran et al. (1992)	Information Contents (1992)	The market reacts to changes in financial leverage.
Levy and Lasarovichporat (1995)	Signaling of entrepreneur participation	The larger proportion of enterprises participation in a project the higher its stock price.
Hull (1999)	Whether Stock value is influenced by how firms change its leverage ratio, in relationship to its industry level rate ratio norms.	Market's reaction to leverage decrease announcement depends on how a firm's DE changes reactive to its industry DE norm.
Booth et al. (2001)	Country factor and institutional factors	Systematic differences in the way these ratios are affected by country factors, such as GDP growth rate, inflation rates and Development of capital market.
Chui et al. (2002)	Determinants of Capital Structure	(i) National culture affects corporate capital structures.

		(ii) Countries with high scores on the culture dimensions of "Conservatism" and "mastery" tend to have lower corporate debt ratios.
Mani and Reeb (2002)	Impact of firm international on debt financing	Firm international on is associated with a lower cost of debt financing and higher debt usage and that the relation between firm international activity and debt financing is non-monotonic.
Chang and Rhee (1990)	Firm's characteristics as determinants of capital structure	Positive association of debt with dividend pay-out ratio, dividend yield, non-tax shield, growth rate, size, earnings variability and negative association with profitability and shareholders' tax rate.
Chaplinsky and Niehaus (1990)	Determinants of inside ownership and leverage.	(i) Leverage increases with lack of growth opportunities. (ii) Leverage does not increase in free cash flow. (iii)Leverage increases with liquidation value, (iv) There is packing order.
Korajczyak et al. (1990 a)	Stock price behaviour	(i) There is no pecking order (ii) Firms tend to issue equity following abnormal price appreciation. (iii) Firms tend to issue equity when information asymmetry is smaller.
Korajczyk et al. (1990 b)	Information effect	(i) Stock price decreases more, the larger is the information asymmetry. (ii) Firms tend to issue equity when information asymmetry is the smallest.
Amidhud et al. (1990)	Choice of investment financing	(i) Leverage is positively correlated with the extent of managerial equity ownership. (ii) There is pecking order

		(iii) Capital structure is used to protect control.
Chung (1993)	Effect of asset characteristics on corporate debt policy	(i) The firm with higher assets diversification and a large fixed assets ratio tends to use more long-term debt. (ii) The firm with greater growth opportunities and higher operating risk tends to use less short term and long-term debt. (iii)The firm in regulated industries used more long-term debt.
Gupta (1990)	Factors effecting capital structure decision in general engineering and cotton textile industries	Size, business risk, interest coverage, profitability, growth variables are the major factors affecting the capital structure decision.
Arora (1992)	Pattern and determinants of capital structure in metal alloy industry of India.	The effect of size, and liquidity on debt-equity ratio is not significant but in case of profitability it is negative and significant
Sinha (1992)	Inter-industry variation in capital structure in India.	(i) The effect of growth rate and asset type on debt-equity ratio is positive and significant but in case of profitability it is negative and significant in public Ltd. Cos. (ii) The effect of size and business risk on debt-equity ratio is negative and insignificant in public Ltd. Cos. (iii) The effect of profitability scaled by sales on debt-equity ratio is negative and significant in private Cos.

Their empirical findings support the hypothesis at both national and firm levels. They found that industry recital, difference in economic performance across countries, legal systems, and development of financial institution are well-known determinants of debt equity ratio amongst

country. Mansi and Reeb (2002) suggested that firm having the average level of international diversification have about 52 basis points lower cost of debt financing, and use approximately 30 percent debt in their capital structure.

3.1.10.3 Review of Empirical Works during 2000s and early 2009s

Capital structure and credit risk is studied during 2000 and 2009 in different ways under different topics.

3.1.10.3.1 Default Risk, Debt Maturity and Levered Equity's Risk-Shifting Incentives

The work of Black & Scholes (1973), Jensen & Meckling (1976) and Galai & Masulis (1976), highlights that the equity holders of a levered firm have incentive to increase the riskiness of the firms activities after debt is in place. This equity holder and debt holder conflict, termed as asset substitution or risk-shifting follows from considering equity as any call option on the underlying firms asset with exercise price equal to the face value of debt. By increasing the asset volatility ex-post, there is a higher probability of high asset values, which benefits equity with unlimited upside potential. Volatility naturally works both ways, but with limited liability much of the downside is carried by the credit risky debt . While Parrino & Weisbach (1999) conduct a numerical study of equity holder-debt holder conflicts, and they argued that no consensus has been reached in the literature on their overall importance and magnitude. Empirical evidence of risk shifting has been found in the financial industry in 1980s, but Parrino & Weisbach (1999) further noted that the empirical evidence of cross-

sectional variations in risk-shifting behaviour across firms and industries is limited.

The underlying asset value and asset volatility are unobservable when the firm has debt outstanding. This complicates the empirical analysis and may be a partial explanation for the lack of evidence in the cross-section of firms.

Fang & Zhong (2004) are the first to use a structural model to empirically explain the risk-shifting behaviour of industrial firms using asset volatilities. They found that firms tend to increase asset volatility when facing a high default probability, which is the basic proposition from a Black & Scholes (1973) (BS) or Merton (1974) (M) approach to equity. However, as argued in Chesney & Gibson-Asner (1999 & 2001), the BSM framework does not give a description of the risk incentive problem consistent with real world observations. A consequence of the European option analogy is that equity holders would systematically adopt the projects with the highest (infinite) volatility irrespective of leverage. Indeed, the European equity model suggested that call option suffers from severe limitations, and we claim that it is not obvious how the risk incentives change as equity is studied in a richer setting. In particular, the role of debt has not been modelled in BSM as the Modigliani & Miller (1958) irrelevance of capital structure applies. What is more important is the model only allows for the most simple (non-trivial) capital structure imaginable. The firm is assumed to have one issue of zero-coupon debt. At debt maturity, the firm may either default or continue as all-equity forever. The absence of defaultable

interests or intermediate debt service is an important simplification, since the possibility of intermediate financial distress introduces a knock-out asset level breaking the analogy between equity and a European call option. Finally, since taxes and bankruptcy costs are not accounted for, risk-shifting it is reduced to a two-part zero-sum game. To incorporate such extensions to the study of risk-shifting necessitates a model capable of valuing credit risky debt in a richer environment.

3.1.10.3.2. Study on Time-homogeneous Setting

Fang & Zhong (2004) do not address debt maturity considerations and only study firms in extreme financial distress. It addresses firms with an intermediate default risk, since the risk incentives of these firms do not follow as a trivial exercise. The presence of tax shields or bankruptcy costs imply that a reduction of business risk ex- post may be incentive compatible with equity value maximization in the presence of risky debt. When the default risk is high we expect the firm to increase business risk, and the effect is expected to be more pronounced when debt maturity is long. Finally, firms with an intermediate default risk decrease business risk, or avoid risk. However, this finding also applies to firms with an intermediate default risk and long debt maturity. Hence, the agency problem is only severe on the brink of bankruptcy. Otherwise, unless the current asset volatility is very low, the interests are generally aligned at lower levels of distress.

3.1.10.3.3 Calibration and Assessment of Default Risk

As argued by Parrino & Weisbach (1999) and Fang & Zhong (2004), the empirical evidence of cross-sectional variations in risk-shifting behaviour across firms and industries is limited. The general unobservability of business risk may be a partial explanation. Brown, Harlow & Starks (1996) calculated a risk adjustment ratio that defined the ratio of two standard deviations in adjacent time-periods in a study of winners and losers in the mutual fund industry. Fang & Zhong (2004) claim to be the first to apply this measure in a direct study of risk-shifting behaviour in industrial firms without the need to proxy the asset volatility. However, they do not focus on issues related to debt maturity. Furthermore, they only compare firms facing extreme financial distress with the remainder of their sample, and hence have a limited view on intermediate and low default risk firms.

3.1.10.3.4 Capital Structure Arbitrage: Model Choice and Volatility Calibration

Capital structure arbitrage refers to trading strategies that take advantage of the relative mispricing across different security classes traded on the same capital structure. As the exponential growth in the credit default swap (CDS) market has made credit much more tradable and traditional hedge fund strategies have suffered declining returns (Skorecki, 2004)), important questions arise for hedge funds and proprietary trading desks. In particular, do credit and equity markets ever diverge in opinion on the quality of an obligor? What is the risk and return of exploiting divergent

views in relative value strategies? Although trading strategies founded in a lack of synchronicity between equity and credit markets have gained huge popularity in recent years Currie & Morris (2002) and Zuckerman (2005), the academic literature addressing capital structure arbitrage is very sparse.

Duarte, Longstaff & Yu (2005) analyze traditional fixed income arbitrage strategies such as the swap spread arbitrage, but also briefly address capital structure arbitrage. Yu (2006) cites a complete lack of evidence in favour of or against strategies trading equity instruments against CDSs. Hence, he conducts the first analysis of the strategy by implementing the industry benchmark Credit Grades using a historical volatility, which is a popular choice among professionals.

It shows that the more comprehensive model by **Leland & Toft (1996)** only adds an excess return of secondary order. However, when exploiting a wider array of inputs and securities in model calibration and identification of relative value opportunities, the result is a substantial improvement in strategy execution and returns. That Credit Grades is the preferred framework among professionals is argued in Currie & Morris (2002) and Yu (2006), while the Credit Grades Technical Document by Finger (2002) advocates for the 1000-day historical volatility. Duarte et al. (2005) and Yu (2006) solely rely on Credit Grades calibrated with a 1000-day historical volatility. When based on a large divergence between markets, both find that capital structure arbitrage is profitable on average. At the aggregate level, the strategy appears to offer attractive Sharpe ratios

and a positive average return with positive skewness. Yet, individual positions can be very risky and most losses occur when the arbitrageur shorts CDSs but subsequently find the market spread rapidly increasing and the equity hedge in elective. Due to the substantial differences in model assumptions and calibration, the key observed gap between the market and model spread fuelling the arbitrageur may be driven by model misspecification. Furthermore, key inputs may be mismeasured sending the arbitrageur a false signal of relative mispricing. Hence, there is a need to understand how the risk and return vary with model choice and calibration. These caveats are unexplored in Duarte et al. (2005) and Yu (2006).

3.1.10.3.5 Accounting Transparency and the Term Structure of Credit Default Swap Spreads

- ***Traditional structural of credit risk models with Black & Scholes***

Traditional structural credit risk models originating with Black & Scholes (1973) and Merton (1974) define default as the first passage of a perfectly measured asset value to a default barrier. While later extensions that allow for endogenous default and debt renegotiations have increased predicted spread levels, it is well-known in the empirical literature that structural models under predict corporate bond credit spreads, particularly in the short end. Reasons for the poor performance may lie in shortcomings in the models as well as factors other than default risk in the corporate bond credit spread.

As noted in Duffie & Lando (2001), it is typically difficult for investors in the secondary credit markets to observe firms assets directly, either because of noisy or delayed accounting reports or other barriers to monitoring. Instead, investors must draw inference from the available accounting data and other publicly available information. As a consequence they build a model where credit investors are not kept fully informed on the status of the firm, but receive noisy unbiased estimates of the asset value at selected times. This intuitively simple framework has a significant implication for the term structure of credit spreads. However, if firm assets periodically are observed with noise, credit spreads are strictly positive under the same limit because investors are uncertain about the distance of current assets to the default barrier.

- ***The Term Structure of Transparency Spreads***

Duffie & Lando (2001) predict accounting transparency to be an important variable in explaining credit spreads in the short end. At reasonable parameter values, the model does not predict a significant impact of accounting transparency above the 5-year maturity. However, discretionary disclosure may still imply an effect in the long end.

- ***The Accounting Transparency Measure***

The basic idea in Berger et al. (2006) is that when pricing equity, investors perceive firms permanent earnings as a geometrically weighted average of reported earnings and industry average earnings. Investors put more weight on the firms reported earnings when the accounting transparency is high.

3.1.11 More Recent Empirical Works

In addition to the above studies, there has been considerable number of empirical studies undertaken in recent years, which examined the traditional capital structured determinants. The summery of those studies sample size and period covered and the major findings are presented in the following table 3.5. Besides, the review of the despite the findings of similarity in leverage across the G-7 countries, researchers are skeptic about the findings and suggest for the further researches in this area. The specific firm characteristics that have been found to influence capital structure included the asset tangibility, size of the firm. its profitability, growth, risk, amount of non-debt tax shields, and liquidity position of the firm. The determinants of capital structure examined by the number of empirical studies during 1990s clearly portray inconsistencies in the empirical results. For example, in an attempt to establish relationship between firm size and leverage, Chaplinsky and Niehaus (1990). Chatrath (1994). Munro (1996) and Barclay, Smith and Watts (1995) find negative while Dawns (1993). Rajan and Zingales (1995), Hussain (1995). among others to find positive relationship between these two variables. The studies provide contradictory evidences regarding the growth influence on the capital structure. Chang and Rhee (1990). Thies and Klock (1992). Chiarella, Pham. Sim and Tan. (1992). Dawns (1994). Chatrath (1994) and others concluded that growth variable is positively related to the. firm's leverage whereas Chaplinskv and Niehaus (1990), Lowe et al. (1994), Rajan and Zingales (1995), and Michael, Chittenden. and Poutziouris.

(1999) and other concluded that growth variable is negatively related to the leverage. The similar disagreement has also been found on the influence of profitability on capital structure. Supporting the pecking order hypothesis, the negative relationship between profitability and leverage has been reported by Rajan and Zingales (1995). Barclay and Smith survey studies, which have examined the determinants of capital structure in the USA and Europe through survey of Chief Finance Officer, have been made under this sub section. This tabular review of related literature on the determinants of capital structure shows wide variation in the empirical findings. Such differences in the empirical results may be due to the differences in sample size, period, and the country. Among the traditional determinants of capital structure size, growth, profitability, risks, asset structure are the major variables examined in these literatures. Most of the literature presented in the 3.5 seem to agree on the direction of relationship between the leverage and the profitability (Bevan & Donbold, 2000; Pandey, 2001: Booth et al. 2001: Casser & Holmes, 2003; F donberg, 2003; & Frank & Goyal 2004. and leverage and size (Bevan & Donbold 2000; Pandey, 2001: Booth et al.2001: Antoniou et al.. 2002: Frank & Goyal. 2004 and Haung & Song. 2002).

Table 3.5 : At a Glance of Determinants of capital structure found in recent studies period

Studies	Sample	Major findings
Bevan and Donbold (2000)	1054 non financial listed UK firms over the time period from 1991-1997	Positive and highly significant relationship between long term debt and their level of growth opportunities in both 1991 and 1997. Significant positive relationship between company size and long term debt while significant negative relationship between company size and short term bank borrowing. Effect of profitability on corporate gearing is negative and highly statistically significant. Tangibility is found to be significantly positively related to the level of Long term forms of debt while negatively correlated to short term debt
pandey (2001)	Total of 106 Malaysian companies for period 1984 to 1999.	Growth and size variables have a significant positive relationship with all types of debt ratios and profitability has a significant negative relationship. Risk (earnings volatility) is negatively related with long-term debt ratios and positively with short-term debt ratios. Tangibility (fixed-assets-to-total assets ratio) has a negative association with book value and market value short-term and market value long-term debt ratios
Antoniou et al (2002)	Sample period of 1969. 1983 and 1987 for the UK, France and Germany	The effects of possible determinants of capital structure are found to be country-specific. The leverage ratio is positively affected by the size of the firm but inversely affected by market to book ratio, term-structure of interest rates and share price performance in all sample countries. Fixed-assets ratio, equity market premium, profitability and effective tax rates have different degree and direction of influence on leverage across the sample countries.

Haung and song (2002)	Sample firms of 1000 Chinese listed companies with data of up to 2000	Leverage, as measured by long--term debt ratio, total debt ratio and total liabilities ratio, decreases with profitability and increases with company size. Tangibility has a positive effect on long-term debt ratio. Firms that have experienced quick sales growth rate tend to have higher leverage while firms that have bright growth opportunities tend to have less leverage.
Caser and Holmes (2003)	Final sample of 1555 Australian firms for 1995-1998	Asset structure, Profitability and growth are important determinants of capital structure and financing. Profitability measured by ROA is negative and significant. Growth is positive for all five dependent variables and significant for Leverage. Short-term leverage and outside financing. Coefficients of risk is positive for all capital structure measured Asset structure and leverage relations found to be negative
frank and goyal (2004)	Observation of US publicity traded firms excluding financial firms for a sample years (1950-2000)	This paper examines the relative importance of many factors in the leverage decision of the US firms from 1950 to 2000. The findings are the most reliable factor are median industrial leverage (+) effect on leverage, market to book ratio (-) collateral plus profits (-) dividend paying (-) log of assets (-) and expected inflation (+). Industry substitutes a number of smaller effects.
Hass & Peeters (2006)	Panel data set for non-governmental owned firms in 10 central and eastern European countries during 1990s.	Profitability and age are found to be the robust determinants of target capital structure across countries. There is a significant negative relationship between profitability and target leverage in the total sample regression, as well as in six out of ten country regression. The negative coefficient point to information asymmetry and substantial external financing premiums in the overall regression as well as in all individual countries regression as enters positively and significantly.

3.1.12 Sum up

Capital structure is a topic that has received much attention in the financial management area. Despite the extensive body of literature surrounding the impact of capital structure, the question of optimal capital structure and determination of capital structure still remains. Capital structure decision has been a subject of controversy in finance literature. The central issues of controversy are first, the relevancy and irrelevancy of the capital structure decision in determining the value of the firm and second, if it is relevant, the factors influencing the capital structure. Traditional approach suggests that there is optimal structure for each firm, which is obtainable by the trade off between the cost and benefit of using debt in capital structure. But Net operating Income Approach and Modigliani and Miller proposition on capital structure rejected the presence of any such optimal capital structure. The review shows that decade of 1960s was centre around the MM independent hypothesis and MM tax correction hypothesis. Many researchers worked under the MM hypothesis and their results concluded that the cost of capital is the function of leverage.

During the 1970s, most of the empirical works were directed towards the area of capital structure. After the development of agency cost and asymmetric information models of capital structure theory numerous studies were carried out during the 1980s, which were based on either agency cost model or an asymmetric information model. Numerous researches conducted during 1990s till 1999s were focussed primarily on

the Determinants of leverage, Capital structure characteristics of various nature of firms, financial planning and analysis, investment financing, impact of financing on stock price volatility, optimal debt level and so on. Besides, general capital structure notion theories are also discussed with prominent attention to current financial practise associated with Default risk, risk-shifting incentives, credit default swap, calibration and assessment of default risk and so on. The study carried out during 2000s and early 2009s revealed that capital structure decisions were mostly affected by macro factors and the propositions of capital structure theories were focussed on the asset volatility and default probability, taxation and bankruptcy costs, hedging and arbitraging concepts and Product/input market interaction theory. This theory of capital structure uses feature of theory of industrial organization and has begun to appear in the corporate finance theory. This model can be classified into two categories. The one class of approaches in this theory is relationship between capital structure and firm's strategy when competing in the product market while another class of approach is relationship between capital structure and the characteristics of products and inputs. **The Accounting Transparency Measure**s, the Investors put more weight on the firms reported earnings when the accounting transparency is high.

Chapter Summary

This chapter accompanies the theoretical explanations and the notations and notion cited by various researchers. These reviews had been retrieved from the sources mentioned as under;

1. Marx, Karl. Capital: volume 2, Progress Publishers, Moscow, 1986, p.38.

2. Bos ,T and Featherstone, T.A.,(1993), Capital Structure Practices on the Specific Firm, Research in International Business and Finance, vol. 10,pp.53-66.

3. Panday, K.M., Financial Management, Vikash Publishing House, New Delhi, 1986.p 258.

4 Keown, M. & Petty, S. (1998.) Foundation of Finance. New Delhi: Prentice Hall of India Pvt.Ltd. p 372.

5. Weston, J. Fred., & Copland, Thomas E .Managerial Finance, 9th ed. The Dryden Press, New York, 1992. P 565.

6. Panday, K.M., Financial Management, Vikash Publishing House, New Delhi,1999.p 574.

7. Hampton,J.J. Financial Decision Making,Printice Hall of India, New Delhi,1998, p 166.

8. Hampton, J.J. Financial Decision Making, Printice Hall of India ,New Delhi,1999 p 33.

9. Schall, Lawrence D. & Haley, Charles W. Introduction to Financial Management, 2 nd ed, New York, Mc Graw Hill Book Co. 1983: p 339.

10. Upadhaya, K.M.,Financial Management,Kalayani Publisher, New Delhi,1985 p 799.

11. Panday, I.M. Financial Management, Vikash Publishing House, New Delhi,1999 p.611.

12. Solomon, Ezra. (1963). *The Theory of Financial Management.* New York: Columbia University.

13. Hampton, J. J. Financial Decision Making: Concepts Problems and Cases 4 th ed.1990 Prentice Hall of India pvt.ltd. New Delhi p.116.

14. Pandey, I.M., Financial Management, Vikash Publishing House, New Delhi, 1986 p. 205.

15. Keown, M. & Petty, Scott and Martin.(1998). Foundation of Finance. New Delhi: Prentice Hall of India Pvt.Ltd. p 392a

16. Pandey, I.M., Financial Management, Vikash Publishing House, New Delhi, 1986, p. 227a

17. Gitmen, Lawrence. J. (2001), Principles of Managerial Finance : 9 th ed. Asia, Pearson Education Inc./Addison Wesley longman Singapore pvt.ltd, Indian Branch, Pahadgunj Delhi, P 507.

18. Khan, M.Y. & Jain, P.K., Financial Management, Text and Problems, second edition, Tata Mc Graw Hill Publishing Company ltd., New delhi ,1998, P.476-477.

19. Pandey I.M., Financial Management, Vikash Publishing House, New Delhi, 1986, p. 230.

20. Khan, M.Y. & Jain, P.K., Financial Management, Text and Problems, second edition, Tata Mc Graw Hill Publishing Company ltd., New delhi ,1998 P.479.

21. Pandey I.M., Financial Management, Vikash Publishing House, New Delhi, 1986, p. 231.

22. Brigham E.F. & Houston, J.F. Fundamental of Financial Management, Thompson Asia Pvt .Ltd.,Singapore,2004. P 256.

23. Khan, M.Y. & Jain, P.K., Financial Management, Text and Problems, second edition, Tata Mc Graw Hill Publishing Company ltd., New Delhi ,1998, P.481.

24. Vanhorne, J.C. Financial Management and Policy: 11Th ed ,Printice Hall of India ,New Delhi 2000,pp 253-254.

25. Vanhorne, J.C. Financial Management and policy 11th ed. ,Printice Hall of India, New Delhi, 2000, pp 253-254.

26. Vanhorne, J.C. Financial Management and Policy ,Printice Hall of India ,New Delhi, 2000, pp 253-254.

27. Pandey I.M., Financial Management, Vikash Publishing House, New Delhi, 1986, p 236.

28. Vanhorne, J.C. Financial Management and Policy 11th Ed., Prentice Hall of India, New Delhi 2000,pp 253-255.

29. Vanhorne, J.C. (2000) 11ed Financial Management and Policy 11th Ed., Prentice Hall of India ,New Delhi, 2000, p 275

30. Vanhorne, J.C. Financial Management and Policy ,Printice Hall of India, New Delhi, 1991, pp 269.

31. Vanhorne, J.C. Financial Management and Policy 11th ed ,Printice Hall of India, New Delhi, 2000, p256.

32. Vanhorne, J.C. (2000) 11ed Financial Management and Policy 11th Ed., Prentice Hall of India ,New Delhi, 2000, pp 244-245.

33. Weston & Copland, Managerial Finance, 1990, p 606.

34. Weston & Copland, Managerial Finance, 1990, p 623.

35. Alexander, A. Robichek. & Stewart, C. Myers, Optimal Financing Decision, Prentice Hall Inc, New Jersey,1965 p 20.

36. J. Hirschleifer, Investment, Interest and Capital, Englewood, Cliffs, New Jersey: Prentice Hall Inc. 1970, p. 264.

37. Kim, E. Han, A Mean-variance Theory of Optimal Capital Structure and Corporate Debt Capacity, Journal of Finance, Vol. 33 No. 1, Mar 1978, p. 45.

38. Alan, Kraus and Robert, H. Litzenberger, A State Preference Model of Optimal Financial Leverage, Journal of Finance, Philadelphia USA, Vol. 28, No. 4 ,Step 1973 pp. 911-922.

39 Stewart, C. Myers & Gerald, A. Pogue, A Programming Approach to Corporate Financial Management, Journal of Finance, Vol. 29, No. 2, May 1974, p. 589.

40. Kim, E. Han, op cit, p. 46

41. Martin, John D., The Theory of Finance: Evidence and Applications Chicago: The Dryden Press, 1988, P. 355.

42. Kim, E. Han, A Mean-variance Theory of Optimal Capital Structure and Corporate Debt Capacity, Journal of Finance, Vol. 33No. 1, Mar 1978, p. 45.-60.

43. Alan, Kraus and Robert H. Litzenberger, A State Preference Model of Optimal Financial Leverage, Journal of Finance, Philadelphia USA , Vol. 28, No. 4 , Step 1973, p. 918.

44. Kim, E. Han, op. cit., p. 60.

45 Lee,W. Y. & Banker, H.H. Banker, Bankruptcy Costs and the Firm's Optimal Dept Capacity: A Positive, Theory of Capital Structure, Southern Economics Journal, Vol. 43, Apr. 1977, p. 1463-1464.

46. Scott, James H., A Theory of Optimal Capital Structure, Bell Journal of Economics, Vol. 7, no. 1 Spring 1976. p. 50.

47. Robert, A Haugen & Sunbet, Lemma W. , The Insignificance of Bankruptcy Costs to the Theory of Optimal Capital Structure, Journal of Finance, Vol. 33, No. 2, May 1978. p. 392.

48. Martin, John D., The Theory of Finance: Evidence and Applications, Chicago: The Dryden Press, 1988, P. 356.

49. Weston, J. Fred & Copeland, Thomas E., 1992, Managerial Finance, The Dryden Press, Florida, USA, P. 9.

50. Stanley, B. Block. & Geoffery, A. Hirt, (1992), Fundamental of Financial Management: 6th ed. Boston, USA,. Irwin. P. 8.

51. Michael, C. Jensen, & Willam, H. Meckling, Theory of the Firm: Managerial Behaviour Agency Costs and Ownership Structure, Journal of Financial Economics, Harvard Business School, Harvard University Press ,Buston, Vol.3, No.4, Oct. 1976, PP. 305-360.

52. Jensen, C. Michael & Meckling , H. William, Theory of Firm: Managerial Behaviour, Agency Cost & Ownership Structure, Journal of Financial Economics ,vol,3 No,4, Oct.1976, pp305-360.

53. Harris ,M. & Raviv, A. The Theory of Capital Structure, Journal of Finance, 1991, vol. 49 pp. 297-355

54. Ross, S., The Determinants of Financial Structure : The Incentive Signalling Approach ,Bell Journal of Economics, 1977, Vol. 8, Spring, pp 23-40.

55. Leland, H. & D. Pyle, Informational Asymmetries, Financial Structure, and Financial Intermediation, Journal of Finance, 1977, 32, May, 371−388.

56. Myers, S. and N. Majluf, 1984, Corporate Financing and Investment Decisions When Firms have Information that Investors do not have, Journal of Financial Economics 13, 1984, June, 187−221.

57. Harris, M. & Raviv, A . The Theory of Capital Structure , Journal of Finance ,1991, Vol. 49 pp. 297-355.

58. Myers, S.C. & Majluf ,N.S. (1984), Corporate Financing and Investment Decision When Firms have Information that Investors do not have, Journal of financial economics, 1984, vol 13, June, pp 187-221.

59. Harris ,M. & Raviv, A., The Theory of Capital Structure, Journal of Finance ,1991, Vol. 49 pp. 297-355

60. Panday, I.M. Financial Management, P 227

61. Panday, I.M Financial Management, P 258.

62. Keown, Petty, Scott & Martin, Foundation of Finance, op. cit., P.373.

63. Keown, Petty, Scott & Martin, Foundation of Finance, op. cit., P.394.

64. Kolf, Robert.w., Principle of Finance ,Boston. USA, Foresman and Company. 1988, pp 538-539.

65. Pandey, , I.M. financial Management, 1986:260-269

66. Pandey, I.M. Financial Management, 1986, p 228.

67. Pandey, I.M. Financial Management, 1986, p. 228.

68. Van horne, James C. Financial Management and Policy, p 252.

69. Hampton, John J., Financial Management and Policy 1991, p.346.

70. Kewon, Petty, Scoot & Martin, Managerial Financial, p.328.

71. Keown, Petty, Scott & Martin, Managerial Finance, op.cit., P.328.

72. Pandey I.M., Financial Management, 1986, op. cit., P.164-181.

73. Hampton, John J. Financial Decision Making, p 346.

74. Van Horne, James C., Financial Management and Policy, op.cit. P 208

75. Van Horne, James C., Financial Management and Policy, op.cit. P 209.

76. Pandey, I.M. Financial Management, 1986, op.cit p 177.

77. Pandey, I.M. Financial Management, 1986 edition op.cit p 203-205.

78. Pandey, I.M. Financial Management 1986, op.cit p 205-208.

79. Pandey, I.M. Financial Management 1986 edition op.cit p 591-594.

80. Pandey, I.M. Financial Management, 1986, op.cit p 258-259.

81. Ishola ,Rufus, Akintoye, Sensitivity of Performance to Capital Structure, European Journal of Social Science Vol. 7 No. 1, 2008 p. 23-24,1-31) Available From:<http> www.eurojournals .com.

Chapter-4
Research Methodology

CHAPTER-FOUR
RESEARCH METHODOLOGY

4.1 Visionary Approach

The quality of research study basically depends on a systematic methodology to show the better output of the research analysis. Capital structure situation of tobacco industry also needs an appropriate research method, which is also devoted to examine the capital structure in Nepalese and Indian scenario of tobacco industries. For the purpose of this study, secondary as well as primary data have been used for qualitative results.

This chapter has been divided into two sections. First section presents the research design, nature and sources of data, selection of firms, period of study, and behavioural questionnaire of corporate executives. The second section focuses on the method of data analysis which deals with multivariate tools and hypotheses testing for the measurement of the variables. In fact, the research methodology focuses on following components to evaluate and examine the implications of the various variables:

4.1.1 Research Design

The purpose of the study is to analyse the capital structure management of tobacco companies of Nepal and India. The study has been made an exploratory cum analytical design through the approach of hypothesis testing as well. The study focuses on the capital structure position of tobacco industries and suggests improvements for better

mobilization and utilization of resources. The study is based on research questions too. For the sake of drawing the conclusions, null hypothesis has been formulated and tested by the method of student –'t' values. Similarly, financial ratio, and percentage analysis have been computed and interpreted for clear picture of capital structure management of tobacco industries in Nepal and India. The research design approach uses descriptive statistics and econometric models along with inferential analysis. More precisely, it also examines the correlation and regression, inferential analysis like t test, F test and chi-square test along with Darwin Watson test, co-integration test and chow breakpoint test for, selected variables of tobacco companies. Furthermore; it also shows the casual effect relationship among leverage measures and other independent variables.

The study is concerned with past phenomena, and thereby the past information are collected, verified and analyzed systematically. For the measurement of capital structure position independent and dependent variables have been considered simultaneously. Opinions of corporate executives are also included in research design. So this study also follows the retrospective prospective research design.

4.1.2 Sources of Data

The study primarily depends on secondary data. However, primary data have also been taken into the consideration to evaluate and examine the various critical issues of the study. The secondary data are collected from the various published documents of the tobacco companies of Nepal

and India. For this study more than ten years 'financial statements, related appendix and auditor's reports have been collected. Other related documents of tobacco companies have also been collected and accounted in shaping the current research study. Moreover, secondary information have also been collected from some reputed world class publications like World Development Report 2011 (The World Bank Report),IMF's publications like International Financial Statistics(IFS),working papers along with the publications of the World Trade Organisation(WTO) like WTO's annual reports, focus and press release publications of WTO and WHO.

4.1.3 Data Gathering Instruments

The published data relating to the capital structure have been obtained from accounts departments of Tobacco industries and their related web-sites. The financial statements (Balance Sheet and Profit and Loss account) and other related documents, which are of secondary nature, are directly collected from the accounts departments and their related web site. Moreover, other relevant statistical information have also been collected through electronic media like internet services and others.

4.1.4 Data Collection Procedure

The main sources of data are the head office of tobacco industries. The study is fundamentally based on secondary as well as primary sources of data. The annual financial statements have been collected directly from the accounts departments of Head offices and web sites of related companies of Nepal and India. More than ten year's balance sheets and related expenditure are published in the books of accounts of Indian

companies. But in the case of Nepalese companies, data are not available in the published form but these are copied from the accounts departments in Xerox form. All data are collected from the fiscal year 1999 to 2009. Other related data are also collected and used to satisfy the norms of research analysis. An opinion survey with the general managers, estates managers have also been exercised in shaping the current research study.

4.1.5 Data Processing Procedure

The collected data are condensed, processed, recast and presented in the tabular form with the help of simple arithmetic rules. The entire data are converted into approximate and condensed in the form of summarised balance-sheets and profit and loss accounts. Most of the data have been compiled in one form and processed and interpreted as per the need of the study. The secondary and primary statistical evidences are presented for analytical and descriptive purposes. The type of data processing represents the clear situation of capital structure of tobacco industries of Nepal and India.

4.1.6 Universe, Population and Samples of the Study

The leading tobacco companies of the SAARC nations are considered as universe of the study. The existing Nepalese and Indian tobacco companies are considered as population of the study. In other words, the total number of public and private sector tobacco companies in Nepal and India are the population of the study. In Nepal five tobacco companies are registered. Out of them two are governmental and three are private. But at present, two companies are in existence – one in

government ownership and another in private ownership. In India, more than 25 companies are registered as private and public sectors, out of these, only nine tobacco companies hold majority export share in the business of tobacco products. Thus, two tobacco companies of Nepal and nine tobacco companies of India are considered as population of the study.

Out of these, two Nepalese tobacco companies – JCF and Surya Nepal and two Indian companies ITC and GPI are taken as samples of the study. In other words, all together four Nepalese and Indian tobacco companies like JCF, Surya Nepal, ITC and GPI established in 1965, 1986, 1910 & 1936 A.D. respectively have been accepted as samples of the study.

In order to preserve the quality management consistency of the current research study, ten fiscal years are accounted for the study which ranges in between 2000 to 2009.

In Nepal, five tobacco companies are established but two companies are running till now. In India, 25 tobacco companies are registered and working in field of tobacco. Nine companies are in highly working in the field of tobacco. Two companies of Nepal and nine companies of India are mainly focus on export oriented as well as domestic. However, JCF, Surya Nepal in Nepal and, ITC & GPI in India as selected for the nature of uniformity. Therefore, two tobacco companies in Nepalese context are selected as sample which accounts 100 percent in present scenario. In order to match the sample tobacco companies of India with Nepalese tobacco companies, two big tobacco companies of India-ITC and GPI, have also been selected , which serve here as sample of the study.

Method of data analysis

4.1.7 Use of Statistical and Analytical Tools

For the purpose of analysis of capital structure, various statistical tools, econometric models, mathematical tools and related graphs have been used. These tools are discussed in the following headings:

4.1.7.1 Statistical Tools

In order to analyse the trend and evaluate the situation of the capital structure of tobacco companies in between 2000-2009, the following statistical tools have been exercised in determining the study:

4.1.7.1.1 Inferential Analysis

The critical themes of the study have been supported and evaluated by the tools of inferential analysis. Student's t – distribution (t-test), variance ratio test (F-test), and ANOVAS (Analysis of variance) test have been exercised to analyse the critical facts by the numerical evidences. However, the qualitative variables have been evaluated by the help of chi - square test(x^2). In fact, the different tools of inferential analysis have been exercised for the justification of results concerning with the hypotheses. If the calculated values of t, F, X^2 tests are smaller than there tabulated values, the null hypotheses have been accepted. However, if the calculated values of these tools are greater than tabulated values, alternative hypotheses have been accepted at 0.05 and 0.01 level of significance.

4.1.7.1.2 Mean (Average)

The most popular and widely used measure of representing the entire data by one value is what most laymen call an “average” and what the statisticians call the arithmetic mean. Its value is obtained by sum of total observation (Σ divided by number of observation (η).In the case of tobacco industries, simple arithmetic mean is applied wherever necessary.

4.1.7.1.3 Standard Deviation

The standard deviations or the root mean square deviation is the square root of the mean of the square deviations from their mean of set of values.

The standard deviation measures the absolute variability of a distribution, the greater the amount of dispersion or, variability the greater the standard deviation, for the greater will be the magnitude of the deviations of the values from their mean. A small standard deviation means a high degree of uniformity of the observations as well as homogeneity of a series. Standard deviation is applied in selected tobacco companies where it is necessary.

4.1.7.1.4 Co-efficient of Variations (C.V.)

The coefficient of variation is the most commonly used measure of relative variation. It is used in such problems where the researcher wants to compare the variability of more than two years. Greater C.V. represents more variable or conversely less consistent, less uniform and less stable and less homogeneous. Lower C.V. represents the less variable or more

consistent, more uniform, more stable and homogeneous. This nature of C.V. is used in capital structure management of tobacco industries to analyse actual size of capital structure. In fact, the tool of C.V. is comprehensively exercised in shaping the analysis of size of debt, equity and capital turnover of capital structure of tobacco companies in Nepal and India.

4.1.7.1.5 Correlation Analysis

Correlation analysis is the statistical tool that is used to describe the degree of relationship between two or more variables. Correlation analysis enables researcher and executive to estimate costs, sales, price and other variables on the basis of some other series with which their costs, sales, or prices may be functionally related.

For the purpose of capital structure analysis of tobacco industries, Karl Pearson simple and multiple correlation coefficient analyses are applied in some related and relevant chapters wherever necessary. These are size, growth, sensitivity and efficiency of capital structure. Moreover, Charles Spearman's Correlation coefficient (rank correlation) has also been exercise to analyse the critical issues related to composition of capital structure and growth of equity and debt analysis of tobacco industries.

4.1.7.1.6 Co-efficient of Determination

The "co-efficient of correlation is one of the most widely used tool of statistical measures. It is abused in the sense that one sometimes overlooks the fact that correlation measures are nothing but the strength of

linear relationship. The square value of Co-efficient of correlation is also called co-efficient of determination (r^2).

Coefficient of correlation is applied and analyzed in growth and liquidity of, capital structure analysis of selected tobacco industries of Nepal and India. The value of the co-efficient of correlation lies between ±1 when r = +1, it means there is perfect positive correlation between the variables. When r= -1, it means there is perfect negative correlation between the variables. When r=0 there is no relationship between the two variables. For the purpose of capital structure analysis of tobacco industries, the co-efficient of determination is used to explain the variation in the dependent variable. It reveals that the variation observed in the dependent variable is explained by the coefficient of determination.

4.1.7.1.7 Regression Analysis

The approach regression analysis as a statistical tool developed by Francis Galton in 1904.When the value of unknown variable is calculated on the basis of the value of known variable then such a case is regression analysis. When there are two independent variables, the analysis concerning relationship is known as multiple correlations and the equation describing such relationship as the multiple regression equation. Simple and multiple both regression analysis have been used to evaluate and analyse the different aspects of the study.

For the analysis of capital structure of tobacco industries in Nepal and India, simple and multiple regression analyses have been applied to determine the relationship between long term debt and BRISKx6, LIQx5,

logSalesx1, TANGx3, GROWtax4, PROFITx2 and total debt and BRISK, SALES, LIQUIDITY, TANG, GROWTH, PROFIT, NTDS on and the regression line has been fitted on the basis of estimated value of dependent variable as long term debt and total debt.

4.1.7.1.8 Co-efficient of Multiple Determinations

For the purpose of capital structure analysis the co-efficient of multiple determinations is also applied to determine the growth and sensitivity analysis of capital structure. It also explains the variation in the dependent variable through the multiple regression equation.

4.1.7.1.9 Skewness

Skewness is a measure of the asymmetry of the probability distribution of a real-valued random variable. The Skewness value can be positive or negative, or even undefined. Qualitatively, a negative skew indicates that the *tail* on the left side of the probability density function is *longer* than the right side and the bulk of the values (possibly including the median) lie to the right of the mean. A positive skew indicates that the *tail* on the right side is *longer* than the left side and the bulk of the values lie to the left of the mean. A zero value indicates that the values are relatively distributed on both sides of the mean, typically but not necessarily implying a symmetric.(Gupta,2005:244-245) For the purpose of capital structure analysis of tobacco industries Nepal and India, Skewness is used to measure of capital turnover ratio and long term debt to total assets ratios between country and industry.

4.1.7.1.10 Kurtosis

According to Croxton and Cowden “A measure of kurtosis indicates the degree to which a curve of a frequency distribution is peaked or flat-topped” kurtosis is a measure of the "peakedness" of the probability distribution of a real-valued random variable,

Karl Pearson in 1905 introduced three broad patterns of peakedness which are illustrated in the following way:

(i) A peak curved is called leptokurtic(b1>3) and said to lack kurtosis or to have negative kurtosis.

(ii) An intermediate peak curved is called which is neither flat –topped nor peaked is mesokurtic (b1=3) curve.

(iii) A flat-topped curve is termed platykurtic (b1<3) or positive kurtosis.(Gupta,2005:251-252)[1]

Higher kurtosis means more of the variance is the result of infrequent extreme deviations, as opposed to frequent modestly sized deviations. Moreover, for the purpose of capital structure analysis of tobacco industries Nepal and India kurtosis is used to measure of capital turnover ratio and long term debt to total assets ratios between country and industry.

4.1.7.1.11 Standard Error

Standard error is the estimation of standard deviation of sample means in a given sampling distribution.

In regression analysis, the term "standard error" is also used in the phrase standard error of the regression to mean the ordinary least squares estimate of the standard deviation of the underlying errors. For the purpose of capital structure analysis of tobacco industries standard error is used size, growth, leverage and profitability variables.

$$SE_{\bar{x}} = \frac{s}{\sqrt{n}}$$

4.1.7.1.12 Reliability

Reliability indicates the precision of measurement scores. A measurement score is reliable when it produces consistency about the same results which is applied to the same samples of variables(Panta, 2009:193,194)[2] According to reliability and validity test, Chronbach's alpha used to measure of internal consistency of tobacco Company in Nepal and India. **Cronbach's α (alpha)** is used as coefficient of reliability of degree of leverage of capital structure of tobacco industries.. It is commonly used as a measure of the internal consistency or reliability of Tobacco Company for a certain variables i.e. degree of leverage.

Degree of accuracy is the reliability which is measurement made by the research analyser. The lower the value of alpha is likely to be an error and higher the value is reliability.(Kumar, 2006:156)[3]

Coefficient alpha is used as a default for estimating the internal consistency based on the Pearson correlation matrix in widely available software packages such as SPSS and SAS;[3](Zumbo, et al 2007:.22)[4]

However, Cronbach's alpha generally increases the inter correlation among test items which is known as internal consistency of reliability of test scores. Because inter correlations among test items are maximized when all items measure the same construct. Cronbach's alpha is widely believed to indirectly indicate the degree to which a set of items measures a single unidimensional suppressed the construct. [4](McDonald, 1999; Zinbarg, Revelle, Yovel & Li, 2005:123-133)[5].

Theoretically, alpha varies from zero to 1, since it is the ratio of two variances. Empirically, however, alpha can take on any value less than or equal to 1, including negative values, although only positive values make sense. Higher values of alpha are more desirable.

As a rule of thumb, required reliability applies to most situations as follows, which is applied in selected tobacco industries of Nepal and India.

* The value of a > 9 is excellent
* The value of a > 8 good
* The value of a > 7 is acceptable
* The value of a > 6 is questionable
* The value of a > 5 is poor
* The value of a < 5 is unacceptable (George and Mallery, 2009:223-231)[6].

$$\alpha = \frac{K}{K-1}\left(1 - \frac{\sum_{i=1}^{K}\sigma_{Y_i}^2}{\sigma_X^2}\right)$$

For this purpose of the research study, reliability test is used in leverage of capital structure of tobacco industries of Nepal and India under the consideration of above guidelines.

4.1.7.1.13 Factor Analysis

Factor analysis is to extract the minimum number of factors which are independent of each other. The independent factors generated from group of interrelated variables. Since, it is very difficult to distinguish between cause and effect relationship between variables.

Factor analysis is used to analyze large numbers of dependent variables to detect certain aspects of the independent variables (called factors) affecting those dependent variables without directly analyzing the independent variables. It enables an analyst to reduce the number of elements to be studied and to observe how they are interlinked. Factor analysis techniques are used in constructing models. Moreover, Factor analysis is used to simplify the analysis by reducing the large number of observed variables to a small number of unobserved and uncorrelated variables. Such unobserved and uncorrelated variables are termed as factors.(www.investowards.com/factoranalysis .htm.2011)[7]

A statistical approach that can be used to analyze interrelationships among a large number of variables and to explain these variables in terms of their common underlying dimensions (factors). The statistical approach involving a way of condensing the information contained in a number of original variables into a smaller set of dimensions (factors) with a minimum loss of information is factor. There are several methods of factor analysis

but these methods are not necessary to find same results, therefore, three methods of factor analysis are used to find major effectible factors,(kothari,2009:323)[8] which are:

- Principal component method
- Maximum likelihood method
- The Centroid method of factor analysis

Of the three methods of factor analysis, the Principle component method of factor analysis is used to find major factors of capital structure of tobacco industries. Principal component analysis (PCA) involves a mathematical procedure that transforms a number of possibly correlated variables into a smaller number of uncorrelated variables called principal components. The first principal component accounts for as much of the variability in the data as possible, and each succeeding component accounts for as much of the remaining variability as possible. There may be high correlation among variables, and high correlation between factor and an observed variable. But the factors themselves will be uncorrelated. There are two methods involved in principle component analysis. That is rotate and unrotate**.** For the purpose of the research study, rotated component method is used to take the major effectible factors, which shows clear vision of relationship between a variable and factors under the study.

4.1.7.1.13.1 Relationship among Communalities, Eigen values and Factor Loadings of Principle components in factor analysis

All the three (Communalities, Eigen values and Factor Loadings) are related to each other but one should know the difference among the three. Both Communalities and Eigen values measure variance, but the object they measure is different. Communalities measure the part of total amount of variance of an observed variables (transformed to z-score) explained by all factors. The total amount of variance for each variable (when transformed to z-score) will be equal to 1. On the other hand, Eigen values refer to the part of total variance of all variables (all z-variables) explained by a factor. The total variance of all z-variables when, combined together is always equal to the number of variables. The amount of Eigen values determines how many factors have to be retained whereas communalities simply show how strong the relationship between a variables and a group of factors is?. Factor loading is related to both communalities and Eigen values in the sense that communalities and Eigen values can be derive from the value of factor loading. For the purpose of research study, factor analysis is applied in determinants of capital structure of tobacco industries.

4.1.7.2 Analytical Tools

4.1.7.2.1 Model Estimation

The correlation and regression model has been estimated to examine the capital structure analysis of tobacco industries. The simple regression equation has been used in shaping the research study.

$$Y=a+bx$$

The predictions of Long term debt and equity, capital employed and sales as well as such other components have been made on the basis of simple regression analysis.

The multiple regression equation empirically tests each dependent variable Y, the total debt and long term debt by selected tobacco company related size, growth, profitability, risk, assets tangibility, Non debt tax shield and liquidity of the firm as explanatory variables. The basic multiple regression equation estimated for each dependent variable is expressed as follows:

$$Y=b_o+b_1size+b_2grow+b_3roa+b_4risk+b_5tang+b_6ntds+.....e \quad (1)$$

$$Y1=b_o+b_1size+b_2grow+b_3roa+b_4risk+b_5tang+b_6ntds+b_7liquid+....e \quad (2)$$

Y where (dependent variable) is= Long term debt

Y1 whereas, = Total debt.

The explanatory variables are included in the regression models and their predicted sign of coefficient with respect to different measure of leverage.

4.1.7.2.2 Econometric Analysis

Econometric analyses comprises the application of statistical and mathematical methods to the analysis of economic data, with a purpose of giving empirical content to economic theories and verifying them or refute them. The present work uses some econometric tools and techniques for

the analysis of time series data. These tools have been mentioned as follows:

4.1.7.2.3 Unit root test

In order to test the time series data for their stationarity unit root test has been applied. Though there are several methods to identify the stationarity of data of tobacco industries, the present work applied the Augmented Dickey Fuller unit root test .This test is based on the explanations of Dickey and Fuller, said and Dickey (1984) , Phillips and Perron(1998) etc.it is based on the following equations:

$$y_t = \alpha y_{t-1} + \varepsilon_t \; |\alpha| < 1$$

4.1.7.2.4 Multicolinearity Diagnostic

Multicolinearity in logistic regression models is a result of strong correlations between independent variables. The existence of Multicolinearity inflates the variances of the parameter estimates. That may result, particularly for small and moderate sample sizes, in lack of statistical significance of individual independent variables while the overall model may be strongly significant. Multicolinearity may also result in wrong signs and magnitudes of regression coefficient estimates, and consequently in incorrect conclusions about relationships between independent and dependent variables. The situation for Multicolinearity arises if value of multiple correlations is more than 9. Here, total debt and long term debt of tobacco industries are dependent and size, growth, profit, liquidity, tang, business risk and non debt tax shield are independent variables which are

used in sensitivity analysis of business factors with capital structure. (Maddala, 2001:268)[9]

The colinearity diagnostic statistics are based on the independent variables only, so the choice of the dependent variable does not matter. Examine Tolerance and Variance Inflation Factor for each variable. Since for each independent variable, Tolerance = 1 – Rsq, where Rsq is the coefficient of determination for the regression of that variable on all remaining independent variables, low values indicate high multivariate correlation. The Variance Inflation Factor (VIF) is 1/Tolerance, it is always >= 1 and it is the number of times the variance of the corresponding parameter estimate is increased due to multicolinearity as compared to as it would be if there were no multicolinearity. There is no formal cutoff value to use with VIF for determining presence of multicolinearity. Values of VIF exceeding 10 are often regarded as indicating multicolinearity, but in weaker models, which is often the case in logistic regression, values above 2.5 may be a cause for concern* (Allison,1999)[10].

4.1.7.2.5 Durbin Watson Test

J Durbin and G.S. Watson have explained the procedure and significance of D.W. test. D.W. test is appropriate only for the first order autoregressive scheme of selected tobacco companies. Durbin and Watson derived a lower limit (dl) and upper limit (du) which depends upon number of observation and number of explanatory variables, which is used in selected tobacco company of Nepal and India. The sampling distribution of d value depends on the value of explanatory variables and hence,

Darwin and Watson derived upper (du) limits and lower (dl) limits for the significance level for D.W values (Maddala 2001: 228). To test the hypothesis of zero auto correlation against the hypothesis of first order positive autocorrelation, the following assumptions are applied in capital structure of tobacco industries of Nepal and India.

If d.w. value = 0 then there is perfect positive autocorrelation.

If d.w. value = 4 then there is perfect negative autocorrelation.

If d.w. value > 4 –Dl then there is first order negative autocorrelation then null hypothesis is rejected.

If d.w value < dL, reject the null hypothesis of no auto correlation.

If du< d.w value <4-du, there is no auto correlation then there is accept null hypothesis.

If dl< d.w value < du, the test is inconclusive.

If 4-du < d.w value < 4-dL, the test is inconclusive.

4.1.7.2.6 Co integration test

It is to investigate the effect of deviations from the unit-root assumption on the determination of the co integrating rank of the system using Johansen's (1988, 1991) maximum Eigen value and trace tests between two companies of tobacco industries. It has investigated the properties of Johansen's maximum Eigen value and trace tests for co-integration under the empirically relevant situation of near-integrated variables.(Hjalmarsson and Österholm , 2007: 1)[11].

The innovative approach of co- integration test has been introduced to analyse the post reliability situation of DFL(Degree of financial Leverage) and DOL(degree of operating leverage) under the composition of capital structure of tobacco industries of Nepal and India.

4.1.7.2.7 Eigen Value

The **eigenvectors** of a square matrix are the non-zero vectors that, after being multiplied by the matrix, remain proportional to the original vector i.e., change only in magnitude, not in direction. For each eigenvector, the corresponding **eigenvalue** is the factor by which the eigenvector changes when multiplied by the matrix. The prefix **Eigen-** is adopted from the German word "Eigen" for "own" in the sense of a characteristically description. The eigenvectors are sometimes also called **proper vectors**, or **characteristic vectors**. Similarly, the Eigen values are also known as **proper values**, or **characteristic values**.

The mathematical expression of this idea is as follows: if *A* is a square matrix, a non-zero vector **v** is an eigenvector of *A* if there is a scalar *λ* (lambda) such that:

$$A\mathbf{v} = \lambda\mathbf{v}\,.$$

The scalar *λ* (lambda) is said to be the eigenvalue of *a* corresponding to **v**. An **Eigen space** of *A* is the set of all eigenvectors with the same eigenvalue together with the zero vectors. However, the zero vectors are not an eigenvector.(www.wikipedia.org)

4.1.7.2.8 Condition Index

Condition index was published first time in 1991 from the universities business officers at Virginia. The **Facility Condition Index** (FCI) is used in Facilities Management to provide a benchmark to compare the relative condition of a group of variables and to take the appropriate decision in the variables. The FCI is primarily used to support asset management initiatives of federal state and local government facilities organizations. This would also include universities, housing and transportation authorities, and primary and secondary school systems. Condition index is used in sensitivity condition of capital structure of tobacco industries.

4.1.7.2.9 Correlogram

In the analysis of time series data, a **correlogram** is also known as a plot of **autocorrelation.** The correlogram is a commonly-used tool for checking randomness in a data set. This randomness is ascertained by computing autocorrelations for data values at varying time lags. If random, such autocorrelations should be near zero for any and all time-lag separations. The correlogram is an excellent way of checking for such randomness of data. It should be however clear that this test applies in case of stationary of the data at first difference. Correlogram is used in the tobacco company of degree of operating leverage (DOL) variables.

4.1.7.2.10 Granger causality Models

It presents the causal relationship between two variables. It is developed by C.W.J. Granger(1969) in his article ‘ investigating casual

relations by econometric models and cross spectral methods'. This test is the statistical hypothesis test for determining what portion of cause effect on variable is useful in forecasting other variables for this purpose; this causal test is applied in capital structure of tobacco industries between sales and debt. It is based on the following equations**. (Maddala, 2001:379)**[12]

$$y_t = a_0 + a_1 y_{t-1} + a_2 y_{t-2} + \ldots a_m y_{t-m} + b_p x_{t-p} + \ldots + b_q x_{t-q} + residual_t.$$

4.1.7.2.11 Chow Breakpoint test

It provides structural breaks or window findings in the relationship between the variables. It is developed by G.C. Chow (1960). It also indicates the change in policy level of the organisation**.** This test is applied for policy change in any decision making policy of a firm. After Second World War, this test is most popular for structural breaks in decision (Chow,1960:591-605)[13]. For the purpose of the study, this test is applied when the tobacco companies change their decision according to their demands in the components of sales and debt. It is based on the following equations:

$$y_t = a + bx_{1t} + cx_{2t} + \varepsilon.$$

4.1.7.2.12 Other Analytical Tools

The following analytical tools are used in this research work:

4.1.7.2.12.1 Ratio Analysis

Ratio analysis is a widely used tool of financial analysis. The ratio reveals the relationship in a more meaningful way so as to enable one to draw conclusion from it. As the case study of capital structure situation involves ratio analysis for judging operational efficiency, the rate of return on total assets and capital employed and activity/efficiency ratio would be particularly meaningful for management and investors.

4.1.7.2.12.2 Trend Analysis

Here in this research trend percentage is calculated on the fixed base of FY 1999. Trend percentage is an important tool of interpretative analysis of the financial position of the tobacco company.

4.1.8 Statement of Hypothesis

A hypothesis is a conjectural statement of the relation between two or more variables. Hypothesis is always in declarative sentence form and they relate either generally or, specifically, variables to variables. There are two criteria for ‘good’ hypothesis and hypothesis statements. A hypothetical statement is about the relations between variables. Second hypothesis carries a clear implication for testing the stated relations. These criteria mean, those hypothesis statements ascertain two or more variables that are measurable and they specify how the variables are related.

On the conceptual frame work of the null and alternative hypothesis between tobacco industries in various variables are formulated and tested as follows:

1. Ho : There is insignificant difference in size of capital structure between Tobacco industries

   H1: There is significant difference in size of capital structure between Tobacco industries

2. Ho: There is insignificant difference in growth of capital structure between Tobacco industries.

   H1 : There is significant difference in growth of capital structure between Tobacco industries

3. Ho: There is insignificant difference in sensitivity of major business factor with capital structure between Tobacco industries

   H1 : There is insignificant difference in sensitivity of major business factor with capital structure between

4. Ho : There is insignificant difference in the efficiency of capital structure between Tobacco industries

   H1 : There is significant difference in the efficiency of capital structure between Tobacco industries

5. Ho : There is insignificant difference in the composition of capital structure between Tobacco industries

   H1 : There is significant difference in the composition of capital structure between Tobacco industries

6. HO: There is insignificant difference in the pair of sales and debt, debt-equity ratio & Profitability and Return on sales & Capital Turnover.

   H1: There is significant difference in the pair of sales and debt, debt-equity ratio & Profitability and Return on sales & Capital Turnover

7. H0: There is insignificant causal relationship between log SALES and log DEBT of tobacco company

   H1: There is significant causal relationship between logSALES and logDEBT of Tobacco Company.

8. Ho: Debt conditions are not similar

   H1: Debt conditions are similar

9. HO: Financing techniques are dependent

   H1: Financing techniques are independent

10. HO: Factors are not affecting financing decision techniques.

    H1: Factors are affecting financing decision techniques.

11. HO: there is insignificant difference among the responses of optimum capital structure, relevancy of capital structure, debt equity ratio and financial reform policy of tobacco firms.

    H1: There is significant difference among the responses of optimum capital structure, relevancy of capital structure, debt equity ratio and financial reform policy of tobacco firms.

The formulas are discussed in the concerned statistical tools to measure the significance of results of hypothesis.

4.1.9 Test of Hypothesis

In this research in order to provide a good suggestion, new experiment, observation and some of the hypothetical test are applied and decision is made in the analysis of capital structure. For the analysis of capital structure, only three types of hypothesis are tested. They are student-'t' test, analysis variance (F-test) and Darwin Watson test. Student t-test is used in size, growth, structure, efficiency, and sensitivity of capital structure wherever necessary. Analysis of variance is used for determinations of capital structure. The significance of multiple correlations can easily be seen in these topics. The test of hypothesis is based on standard deviation. For the computation of test of hypothesis, the formula is shown in appendix.

4.1.10 Level of Significance

Throughout the study 5 percent and 1 percent level of significances is used as the basis for rejection of null hypothesis.

4.1.11 Limitations of the Methodology

The major statistical and econometric tools applied in this study are relevant in ascertaining the outcome for the objectives defined. Nonetheless, every theories and models propounded to have certain limitations and assumptions. Thus, considering the fact, the limitations of the methods applied are elucidated below:

1. **Granger causality** is not sufficient to imply true causality. If both *X* and *Y* are driven by a common third process with different lags, one might still accept the alternative hypothesis of Granger causality. Yet, manipulation of one of the variables would not change the other. The Granger test is designed to handle pairs of variables, and may produce misleading results when the true relationship involves three or more variables.

2. **Factor analysis** cannot be used to predict the value of dependent variable and Parameters cannot be computed from the factor analysis of variables.

3. The result of correlation of two or more variables cannot be shown in casual effect between variables. It only shows the linear relationship between variables but does not show non linear relationship between variables. However, the third factor which might affect the relationship between variables is not shown in correlation. The little observation of variables may give the fictitious results in correlation.

4. When, the **multicolinearity** case is found between independent variables, the result of regression equation is not good, because there is no multicolinearity and autocorrelation in regression equation. It may not be omitted in dependent variable of preceding year that may affect the current year variables. There must be zero correlation between independent variable in regression but little relationship is seen in independent variables or multicolinearity. Definition of independent variable and scaling of data are major

limitation of social science to find the regression. Too many dependent variables may give significant value of multiple correlation and F square without having any significant relationship between dependent and independent variable i.e. beta. It can be applied only to the intervals and ratio scales measurement. Autocorrelation may not be seen in regression. Little observation may give the conjured results which is not utilised in variables of regression.

5. **Multicolinearity** is the one of the limitation of regression.

6. **Kurtosis and skewness** may give few information of normal curve and may give rough idea of variables for decision making.

Chapter Summary

The econometric, statistical and financial tools for analysing the companies status has been explained and have been used in computations of data in appraisal section of this research paper. However, following sources has been utilised for reference purpose to bring clarity in explanations.

1. Gupta, Santosh. 2005, Research Methodology and Statistical Techniques, New Delhi, Deep and Deep Publication pvt.ltd. p. 251-252.
2. Panta, P.R. (2009). Social Science Research and Thesis Writing, Buddha Academic Publishers and Distributors, Kathmandu, pp 193-194
3. Kumar, Ranjit, (2006).Research Methodology, Australlia, Pearson Education, p.156
4. Zumbo, B.D. (2007). Validity:Foundational Issues and Statistical Methodology. In C.R. Rao and S. Sinharay (Eds.) Handbook of Statistics, Elsevier Science B.V.: The Netherlands. Psychometrics, Vol. 26, pp. 45-79.
5. McDonald, (1999), Zinbarg, R.E., Revelle, W., Yovel, I. & Li, W. (2005). Cronbach's α, Revelle's β, and McDonald's ωH: There Relations with each other and two alternative Conceptualizations of Reliability. Psychometrika, The Netherlands vol 70, 123-133.
6. George,Darren & Paul, Mallery. (2009),SPSS for Windows, 8 th ed, Dorling Kindersley Pvt. Ltd. New Delhi. pp 223-231.
7. http://www.investorwords.com/7283/factor_analysis.html#ixzz1NeLkG15V,2011-may 28, 6.30pm
8. Kothari, C.R. (2009),Research Methodology: Method & Techniques, New age International Publishers, New Delhi, p323.

9. Maddala, G.S, (2001), Introduction to Econometrics: 3rd ed. Chichester, England, John Willey and Sons ltd. p268.

10. P.D. Allison,(1999), Logistic Regression Using the SAS System, SAS Institute, .

11. Hjalmarsson Erik and Österholm Pär (,2007) International Monetary Fund WP/07/141IMF Working Paper, Western Hemisphere Division .p 1.

12. Granger,. C.W.J. (1969), Investigating Casual Relations by Econometric Models and Cross Spectral Methods, Econometrica, Vol. 37, January, pp 24-36 as coated G.S.Maddala,(2001), Introduction to Econometrics, Wiley and sons , New Delhi: p.379.

13. Chow G.C. (1960), Test of Equality Between Sets of Coefficient in Two linear Regressions, Econometrica, 28.pp 591-605. Available From <http> www.sas.com., SAS Institute inc. 2011 Aug, 18, 7.43 AM.

14. Trace statistics is the measurement of the critical values of unit roots test of time series data.

15. Johanchon methodology is used to calculate the maximum Max Eigen Values and trace tests for co integration under the empirically relevant situation of near-integrated variables.

16. Rsq is the coefficient of determination for the regression

Chapter-5 Appraisal of Capital Structure of Tobacco Companies

CHAPTER-FIVE
APPRAISAL OF CAPITAL STRUCTURE OF TOBACCO COMPANIES

5.1 Visionary Approach

The basic objective of this study is to examine the capital structure position of tobacco industries in Nepal and India. This chapter has been set to evaluate the capital structure situation of tobacco industries throughout the financial reports from 2000 to 2009 and behavioural aspects of them. This chapter also analyses the different aspects of capital structure in precise form. These are size, growth, sensitivity, efficiency, composition, profitability and determinants of capital structure of Inter country and intercompany analysis and comparison of capital structure in between tobacco companies. Furthermore, an attempt has been made to analyse and compare the capital structure management in between the selected tobacco manufacturing companies of Nepal and India. Basically, this chapter focuses three sensitive components of data analysis:

5.1.1) The analysis of operational aspects.

5.1.2) The analysis of Behavioural Aspects

5.1.3) Interrelationship between Behavioural and operational Aspects.

5.1.1 The Analysis of Operational Aspects

In this part, some econometric models, statistical approach and ratio analysis has been applied in the analysis of data. In this part seven sub

parts are divided into different tables. For the purpose of analysis of capital structure pattern of Nepal and India, log linear model, Darwin Watson test, inferential analysis tools like t test, paired sample t test, F test, co-integration test, mean, Coefficient of Variation, Skewness, Kurtosis, Standard Deviation, reliability test, Correlation, regression analysis, Multicolinearity analysis, Variance inflation Factor, factor analysis and different models of ratio analysis are applied. It includes the following eight sub parts:

5.1.1.1 Size of Equity, Debt and Capital Turnover

Size of debt and equity of any firm are not standardised position of capital structure. It depends upon company's nature of business. Some of the companies have used more debt financing rather than equity, which would be risk and more difficult for debt financing in the days to come. There are two distinct views of the size of debt and equity position of capital structure. One is negatively related while another is positively related with the size of debt and shareholders' equity. Negatively related means high debt financing and low equity financing of capital structure. But, positively related the size of debt and equity means low debt financing and high equity financing of capital structure. These two views are not properly applicable in the size of capital structure of selected tobacco companies of Nepal and India. Therefore, Tobacco Companies of these two countries should balance the size of debt and equity financing consequencing to make sound policy for rising financing for investing on assets structure.

Proprietary ratio

Following Table 5.1 reveals the size of shareholder's equity in terms of percentage to total assets. The ratio is called proprietary ratio, which shows the relationship between the funds provided by the owners of the tobacco companies and its total assets.

Table 5.1 : Proprietary Ratios of the selected tobacco companies of Nepal and India

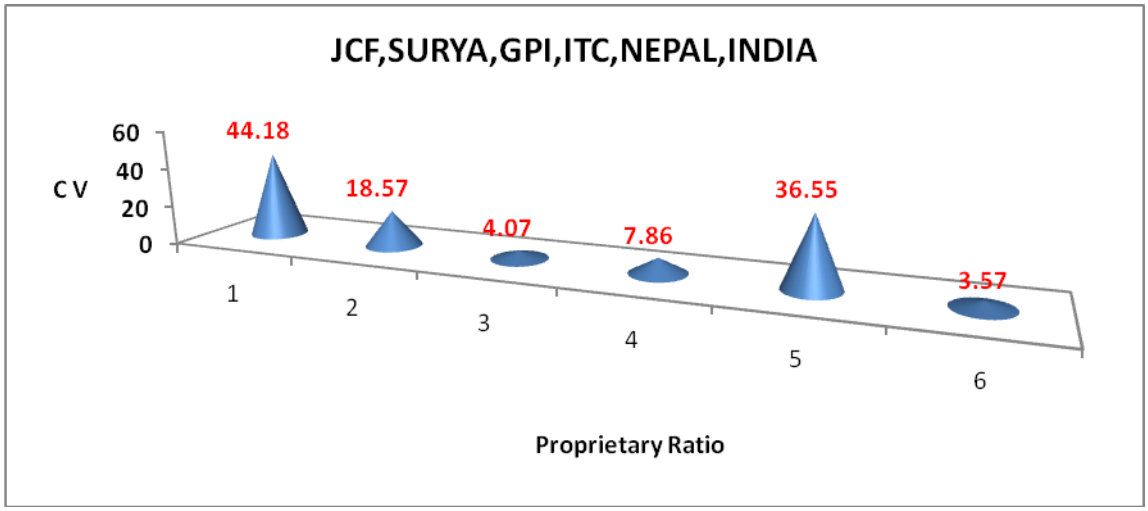
Parameters	JCF	SURYA	GPI	ITC	NEPAL	INDIA
C.V.	44.18	18.57	04.07	07.86	36.55	03.57
Mean	418.2887	149.2564	160.8771	153.5332	283.7725	157.2052
Std. Error of Mean	58.44081	8.76697	2.07014	3.81577	32.79910	1.77467
Std. Deviation	184.80607	27.72359	6.54636	12.06653	103.71988	5.61201

Source: *Computed from the Annual Reports of the Companies, FY 1999/2000-2008/2009 and Appendix-9-12*

The table 5.1 shows the size of equity in terms of percentage of total assets between industries and countries. This ratio is called proprietary ratio which shows the relationship between the funds provided by the shareholders of the company and its total assets. It means the shareholders funds invested in acquiring total assets. The higher ratio indicates that the larger size of the shareholders funds invested in total assets or vice versa. The standard error of mean between countries of proprietary ratio of India is smaller than Nepal. The statistical calculation apparently shows that among Nepalese producer, CV. Of Surya Nepal

Company is distinctly smaller than Janakpur Cigarettes Factory (JCF), which helps to conclude that Surya Nepal is more consistent in proprietary ratio analysis and it helps to conclude that JCF has high debt financing without proper policy framework. Moreover, the C.V. of Godfrey Philips India Ltd (GPI) is smaller than Indian Tobacco Company Ltd. (ITC); GPI is more consistent in terms of proprietary ratio of ITC. Furthermore, it is logical to conclude that, Indian companies are more consistent than Nepalese firm of tobacco industries.

Figure: 5. 1 Proprietary Ratio of Tobacco Companies



Source: *Computed Table from 5.1*

The figure as depicted from table sources reflects the proprietary ratio of all Nepalese and Indian firms. The ratio of Nepalese firms seems more than that of Indian firms. The flattened portion of cone represents the Indian companies and remaining is of Nepalese firms.

Long term debt to total assets

A measurement representing the percentage of a corporation's assets that are financed with loans and financial obligations lasting more than one year is called long term debt to total assets ratio. The ratio provides a general measure of the financial position of a company, including its ability to meet financial requirements for outstanding loans. A year-over-year decrease in this metric would suggest the company is progressively becoming less dependent on debt to grow their business. The calculation for the long term debt to total assets ratio is:

Long term debt to total asset ratio = long term debt / total assets

As the percentage gets higher, this means that a higher proportion of debt is used for the permanent financing for the firm as opposed to investor funds.

According to theoretical guideline higher this ratio supports the higher percentage of long term debt investing in total assets structure. The following table 4.2 reveals the size of long term debt to total assets.

Table 5.2 : Long Term Debt to Total Assets ratio of tobacco industries of Nepal and India

Parameters	JCF	SURYA	NEPAL	ITC	GPI	INDIA
C.V.	36.90	208.54	35.97	127.54	75.06	41.36
Mean	31.2771	2.7311	17.0041	4.0770	6.4889	5.2829
Std. Error of Mean	3.65443	1.80107	1.93429	1.64438	1.54012	.69094
Std. Deviation	11.55631	5.69547	6.11675	5.19998	4.87028	2.18494
Skewness	1.265	1.805	.525	1.663	-.133	-.711
Kurtosis	.404	1.594	-1.428	1.174	-2.029	-.136

Source: *Computed from the Annual reports of the companies during FY 1999/2000-2008/2009 Appendix-9-12.*

Table 5.2 shows that higher the size of this ratio indicates the higher the long term debt employed to finance the assets utilization of the company. The long term debt analysis can be analyzed through the statistical evidence of the magnitude of kurtosis. Since the values of kurtosis for JCF and Surya Nepal are .404 and 1.594 respectively and both these values are less than 3. Thus, the kurtosis analysis helps to conclude that JCF comfortably manages its long term debt than that of Surya Nepal through the strategic finance of long term debt management**.** The value of kurtosis between Indian tobacco industries are less than 3 and thereby GPI comfortably manages its size of long term debt to total assets than the size of ITC for the capital structure management of long term debt to total assets .Moreover, Nepalese firms have more comfortably managed their size of long term debt to total assets. It means 17% of the company's total assets are financed by long term debt of Nepalese Tobacco Companies which are higher than that of the Indian tobacco Companies.

Capital turnover ratio

Capital turnover is used to calculate the rate of return on common equity, and is a measure of how well a company uses its stockholders' equity to generate revenue. The higher ratio is, more efficiently a company is using its capital and also called equity turnover. This ratio indicates that how much a company could grow its current capital investment level. Low capital turnover generally corresponds to high profit margins. A high ratio indicates that the company is using its capital efficiently, but a low capital turnover ratio indicates the opposite meaning.

The following table 5.3 shows the Capital turnover ratio of Tobacco Company of Nepal and India, which is obtained dividing company's annual sales by its stockholders' equity of tobacco industry.

Table 5.3 : Capital Turnover Ratio of tobacco industries of Nepal and India

Parameters	JCF	SURYA	NEPAL	ITC	GPI	INDIA
C.V.	24.04	14.54	16.97	11.08	21.35	17.51
Mean	7.4870	3.0690	5.2780	1.8810	3.8000	2.8420
Std. Error of Mean	.56914	.14108	.28324	.06624	.25652	.15739
Std. Deviation	1.79978	.44613	.89569	.20947	.81117	.49772
Skewness	.683	-.098	.430	.848	1.701	1.648
Kurtosis	-1.616	-1.860	-1.941	.134	3.430	3.186

Source: *Computed from the annual reports of the companies during FY 1999/2000-2008/2009.Appendix 9-12*

The above table 5.3 clearly shows the relationship between sales and capital employed of tobacco industry. Capital employed includes share capital, share premium loan funds and reserve and surplus of selected tobacco company. The standard errors of mean are .5691, .1410, 0.0662 and.2565 of JCF, SURYA, ITC and GPI respectively. The C.V. of Surya Nepal is smaller than JCF capital turnover ratio which tells Surya Nepal is more reliable than JCF. Moreover, the C.V. of ITC is smaller than GPI. It means ITC has utilized its capital turnover more effectively than GPI. The C.V. of Nepalese tobacco company is smaller than Indian companies. It indicates that Nepalese tobacco industries are more comfortably utilizing their capital turnover ratios. The value of kurtosis are -1.610(JCF), -1.860

(SURYA) and GPI is more than 3, than that of ITC. It means that Nepalese tobacco industry efficiently manages its size of capital employed. Among the companies, the management of JCF is deeply surrounded by financial crisis, which is reflected in high C.V. of capital turnover ratio.

Table 5.4 : Test of Significance (t- test) and Variance Ratio Analysis (F- test) of the Debt and Equity between tobacco Industries of Nepal and India:

Table 5.4.1 Picture of Nepalese Case Study

Model	Mean JCF	S_d JCF	Mean Surya	S_d Surya	t value	F value	Std Error JCF	Std error SURYA
Propriety ratio of JCF & Surya	418.28	184.86	149.29	27.72	4.55	20.73	58.44	8.77
Long term debt to total assets ratio of JCF & surya	31.27	11.56	9.10	7.67	3.075	9.46	3.65	4.43
Capital turnover ratio of JCF &Surya	7.49	1.80	3.07	.44	7.53	56.65	.56	.14

*** $t._{05}$ (at d f 18) =1.734. $t._{05}$ (at d f 11).=1.796,F $._{05}$ at d f (18,1)=4.41 and $F._{05}$ at d f(11,1)=4.84**

Source: *Computed from the annual reports of the companies during FY 1999/2000-2008/2009.and Appendix 9 and computed from Table 5.1,5.2,5.3*

The above table exhibits individual mean, standard deviation, standard error as the supplementary elements of t and F values of

Nepalese Tobacco Companies. The above ratio of two companies reveals the relative size of debt equity ratio, Long term debt to total assets ratio and capital turnover ratio. Moreover, applying inferential analysis tools of test of significance and variance ratio test, let us formulate the hypothesis:

Proprietary Ratio

Null Hypothesis Ho: (u=0) There is insignificant difference between the mean value of ratio measuring the debt and equity in the selected tobacco industries of Nepalese firms.

Alternative Hypothesis H1= (u=1) There is significant difference between the mean value of ratio measuring the debt and equity in the selected tobacco industries of Nepalese firms.

Since the calculated value of t and F test is greater than its tabulated value at $t_{.05}$ and $F_{.05,}$ therefore, Ho is rejected. It implies that there is significant difference between the mean value ratio of debt and equity in the selected industries of Nepalese firms and it helps to conclude that JCF has high debt management as compare to Surya Nepal.

Long term debt to total assets

Null Hypothesis Ho :(u=0) There is insignificant difference between the mean value of ratio measuring the long term debt to total assets in the selected tobacco industries of Nepalese firms.

Alternative Hypothesis H1 :(u=1) There is significant difference between the mean value of ratio measuring the long term debt to total assets in the selected tobacco industries of Nepalese firms.

The above table clearly shows the long term debt to total assets relationship between Nepalese firms. Wherever, calculated value of t is greater than tabulated value at 5 percent level of significance at 11 degree of freedom. Moreover F value is greater than tabulated value; therefore, the null hypothesis is rejected. It appears that there is significant difference between the long term debts to total assets in the selected tobacco industries, which implies that Surya Nepal used long term debt only from 2000 to 2002 during the study period. It helps to infer that JCF has more utilized long term debts to its total assets structure.

Capital Turnover

Null Hypothesis Ho:(u=0) There is insignificant difference between the mean value of ratio measuring the capital turnover ratio in the selected tobacco industries of Nepalese firms.

Alternative Hypothesis H1 :(u=1) There is significant difference between the mean value of ratio measuring the capital turnover ratio in the selected tobacco industries of Nepalese firms.

The above table clearly shows that, the calculated value of t test and F value are higher than tabulated value, therefore, Ho is rejected. It is, therefore, imperative to conclude that capital turnover ratio of mean value is significantly different from its mean values of Nepalese tobacco industry. This ratio shows the relationship between net sales and capital employed. Moreover, this ratio shows how efficiently the capital invested in the business is being used into the sales of Nepalese tobacco companies. The standard deviation of Surya Nepal is lower than JCF. The Standard norms

shows the higher the ratio, better the efficiency of utilization of capital funds and concludes that Surya Nepal has better profitability position than JCF due to efficient utilization of capital into the business.

Table 5.4.2 : Picture of Indian Case Study

Model	Mean ITC	Sd ITC	Mean GPI	Sd GPI	t value	F value	Std error ITC	Std error GPI
Proprietary ratio of ITC & GPI	153.53	12.06	160.87	6.54	1.692	2.86	3.82	2.07
Long-term debt to total assets ratio of ITC & GPI	4.07	5.19	6.48	4.87	1.07	1.145	1.64	1.54
Capital turnover rati of ITC &GPI	1.88	.21	3.80	.81	7.24	52.44	.06	.25

*** $t_{.05}$ (at df 18)=1.734. ,F $_{.05}$ at df (18,1)=4.41**

Source: *Computed from the annual reports of the companies during FY 1999/2000-2008/2009.and Appendix—9 and computed from Table 5.1, 5.2, 5.3*

Proprietary Ratio

Null Hypothesis Ho:(u=0) There is insignificant difference between the mean value of ratio measuring the debt and equity in the selected tobacco industries of Indian firms.

H1=(u=1) There is significant difference between the mean value of ratio measuring the debt and equity in the selected tobacco industries of Indian firms.

Since the calculated value of t and F are greater than its tabulated value at $t_{.05}$ and $F_{.05}$ therefore, Ho is accepted. It implies that there is insignificant difference between the mean values of proprietary ratio of Indian tobacco firm.

Long term debt to total assets

Hypothesis Ho:(u=0) There is insignificant difference between the mean value of ratio measuring the long term debt to total assets in the selected tobacco industries of Indian firms.

H1=(u=1) There is significant difference between the mean value of ratio measuring the long term debt to total assets in the selected tobacco industries of Indian firms.

The above table clearly presents the long term debt to total assets relationship between Indian firms, whereas calculated value of t is lesser than tabulated value at 5 percent level of significance at 18 degree of freedom. Therefore, null hypothesis is accepted. Moreover F value is lesser than tabulated value at 5 percent level of significance. It is, therefore, apparent that there is insignificant difference between the long term debts to total assets in the selected tobacco industries in India.

Capital Turnover

Hypothesis Ho:(u=0) There is insignificant difference between the mean value of ratio measuring the capital turnover ratio in the selected tobacco industries of Indian firms

Hypothesis H1:(u=1) There is significant difference between the mean value of ratio measuring the capital turnover ratio in the selected tobacco industries of Indian firms

The numerical value of inferential analysis clearly shows that the calculated value of t test and F value are higher than its tabulated values at 5 percent level of significance, therefore Ho is rejected and conclude that, capital turnover ratio of mean value is significantly different between its mean value of Indian tobacco firms.

Table 5.5: A comparative size of capital structure of Tobacco Companies Between Countries

Parameter	**NEPAL** proprietary ratio	**INDIA** proprietary ratio	**NEPAL** Long term debt to total assets ratio	**INDIA** Long term debt to total assets ratio	**NEPAL** capital turnover ratio	**INDIA** capital turnover ratio
Mean	283.7725	157.2052	17.0041	5.2829	5.2780	2.8420
Std. Error of Mean	32.79910	1.77467	1.93429	.69094	.28324	.15739
Std. Deviation	103.71988	5.61201	6.11675	2.18494	.89569	.49772
Variance	10757.813	31.495	37.415	4.774	.802	.248
Skewness	1.365	.466	.525	-.711	.430	1.648
Std. Error of Skewness	.687	.687	.687	.687	.687	.687
Kurtosis	.992	.806	-1.428	-.136	-1.941	3.186
Std. Error of Kurtosis	1.334	1.334	1.334	1.334	1.334	1.334
Sum	2837.73	1572.05	170.04	52.83	52.78	28.42

Source: Computed from Table 5.1, 5.2, 5.3.

The mean of proprietary ratio, long term debt to total assets ratio and capital turnover ratio of Nepal is larger than that of India. Similarly, Indian firm is negatively skewed and the kurtosis of both Nepalese and

Indian firms in case of Long term debt to total asset ratio and only Nepal in case of capital turnover ratio is negative.

5.1.1.2 Growth of Equity and Debt

The Pecking Order Theory of Capital Structure assumes that firm managers or insiders possess private information about the characteristics of the firm's return stream or investment opportunities, which is not known to common investors. In an attempt to explain, some financing behaviour that is not consistent with the prediction of static trade-off theory such as a negative relationship between profitability and leverage. Myers (1984) emphasizes that internal funds and external funds are used hierarchically. He refers to this as a '*Pecking Order Theory'* which states that firms prefer to finance new investment, first internally with retained earnings, then with debt and finally with an issue of new equity.

In modern business, separation of owners and business creates the conflict between agent and its principal. These two parties try to maximize their own utility. So, agent always does not function in the interest of principal and unity holders do not always work in the interest of debt holders. These interest conflicts between the agent and principal, and equity holders and debt holders create two types of agency costs--agency costs associated with the equity and debt. However, the financing with Debt or equity should depend upon the decision based on the long run sustainability of the firm.

According to Agency Cost Theory equity controls the firm but pecking order theory implies the positive relationship between debt level

and growth rate of capital structure. The growth of long term debt and equity of Tobacco Company shows the financial as well as earning health and growing situation of the company. Negative growth of equity and positive growth of debt at the same time indicate the poor nature of capital structure of company. The following table measures the growth situation of debt and equity of Tobacco Company. Regression model and Darwin-Watson test have also been used for verifying the firm's capital structure of Nepalese and Indian tobacco companies,

Computation and interpretation

Testing of Hypothesis:

Applying one tailed student t-test, F value and DW Test of growth trend of debt and equity.

Null Hypothesis Ho:(u=0) There is insignificant difference between the mean value of ratio measuring the size of long term debt and equity in the selected tobacco company of Nepalese firm.

Alternative Hypothesis Ho:(u=1) There is significant difference between the mean value of ratio measuring the size of long term debt and equity in the selected tobacco company of Nepalese firm.

The models are used for intra-industry comparison considering the long term debt and equity.

Table 5.6 : Model Analysis of long Term Debt and Equity of Nepalese Tobacco Firm

Company	R	R Square	Adjusted R Square	Std. Error of the Estimate	Results						
					t cal	F value	Intercept	Slope	DW Test	Result	Compound growth rate
JCF	.657	.432	.361	40.78	-2.466	6.079	211.6	-.793	1.630	sig	8.05, -2.43
SURYA	.642	.412	.338	4.63	-2.366	5.59	12.08	-.041	1.242	sig	-69.05, 9.26

***t $_{.05}$ at 10 d.f = 1.883,F $_{.05}$ at 10,1 d.f. =241.882**

Source: Computed from the annual reports of the companies during FY 1999/2000-2008/2009.and Appendix 3 , 4& 9,10

Regressing debt on equity of JCF through the linear regression model,

Y=211.6-0.793x

The statistical calculation of slope value specifies that there exits adverse relationship between debt (y) and equity(x) value of firms. The numerical value of slope helps to conclude that if equity increases by 79.3 percent, the burden of debt decreases by 100 percent for the company and vice versa.

The regression package of coefficient of determination (r^2) motivates to draw the perception that 43.2 percent change in the value of dependent variable is only explained by the regression equation of JCF firms.

The inferential analysis tool of test of significance (t test) clearly reveals that the calculated t is less than its tabulated value at 5 percent level of significance and thereby null hypothesis is accepted. It analyses

that there does not exit any fundamental difference between long term debt and equity.

The econometric tool of D W Test lies in between (DU, 4-DU) in the range of no autocorrelation, which signifies that null hypothesis is accepted. It explains that the relationship between long term debt and equity is valid and it also explains that long term debt depends upon equity of JCF firm. The compound growth rate of long term debt and equity are 8.05 and -2.83 respectively, which indicate that the burden of loan has mounted up whereas the volume of shareholder equity approaches towards downwards direction.

Moreover, over the course of 10 year investment pattern, the proportion of debt grew from 97.62% to 211.73% (Appendix 3 & 4) providing compound annual growth rate of 8.05%.Similarly, financing from equity declined from 114.25% to 89.31% bestowing negative return of -2.43%. While regressing debt on equity of Surya Nepal through the linear regression model,

Y=12.086-.o41x

The regression equation of slope value specifies that there exists adverse relationship between long term debts(y) to equity value of the firms. The numerical value of slope of long term debt to equity helps to conclude that if equity increases by 4.10 percent the long term debt decreased by 100 percent and vice versa of the Surya Nepal firm.

Moreover, the compound growth rates of long term debt and equity are -69.05 and 9.26 percent respectively. Despite such numerical values the observation shows that Surya Nepal has significantly declined its debt burden and has increased the magnitude of equity.

The Regression package of coefficient of determination (r^2) motivates to draw the perception that 41.2 percent changes in the value of dependent variable is only explained by the regression equation of Surya Nepal. Moreover, the inferential analysis tool of test of significance (t test) clearly reveals that the calculated value is less than its tabulated value, thus null hypothesis is accepted. It analyses no existence of any fundamental difference between long term debt and equity.

The econometric tool of D W test lies in-between inconclusive Zone,(DU,DL) it cannot be explained that the relationship is valid or not and conclude that the long term debt is partially used throughout the span of ten years.

Table 5.7 : Model Analysis of long Term Debt and Equity of Indian Tobacco Firm:

Firm	R	R Square	Adjusted R Square	Std. Error of the Estimate	Result					
					t	F value	intercept	slope	DW Test	Result
ITC	.081	.007	.118	45.99	-.229	.053	38.48	-.027	2.44	Sig, no Auto cr C.G rate -- 5.59,14.63
GPI	.327	.107	-.004	499.29	-.980	.961	796.76	.-2.407	3.147	Sig negative auto c.g rate 40.94,10.36

***t .o5 at d.f(10) =1.833 , F. 05 at df(10,1) =4.965 a.Predictors: (Constant), Equity x**

***Calculated D.W.2.44 & 3.147 RESULT: no auto correlation and negative auto correlation**

Source: *Computed from the annual reports of the companies during FY 1999/2000-2008/2009 Appendix 1, 2, 11, & 12.*

The above table 5.7 exhibits the Regression equation, coefficient of correlations with their t- values and coefficient of determination for long term debt and equity of the selected tobacco industries of Indian Firms and formulating the hypothesis.

Null Hypothesis Ho:(u=0) There is insignificant difference between the mean value of ratio measuring the size of long term debt and equity in the selected tobacco company of Indian firm.

Alternative Hypothesis H1:(u=0) There is significant difference between the mean value of ratio measuring the size of long term debt and equity in the selected tobacco company of Indian firm.

Regressing debt on equity of ITC through the linear regression model.

Y=38.48 -0.027x

The statistical calculation of slope value specifies that there exits adverse relationship between debt (y) and equity(x) value of firms. The numerical value of slope helps to conclude that if equity increases by 2.7 percent the burden of debt decreases by 100 percent for the company and vice versa.

The regression package of coefficient of determination (r^2) motivates to draw the perception that .07 percent change in the value of dependent variable is only explained by the regression equation of ITC firms. The inferential analysis tool of test of significance clearly reveals that the calculated t-value is less than its tabulated value having null hypothesis accepted. Thus, it clearly says that there is no existence of any fundamental difference between long term debt and equity.

The econometric tool of D W test lies in range of no autocorrelation (2.44), which signifies that null hypotheses are accepted. It explains that the relationship between long term debt and equity is valid and also explains dependence of long term debt upon equity of ITC firm.

Similarly, table 5.7 exhibits the compound growth rate of long term debt and equity are 5.59and 14.63 percent respectively.

The regressing debt on equity of GPI through the linear regression model shows the statistical calculation of slope value to have adverse

relationship between debt (y) and equity(x) value of firms**.(Y=796.76-2.407x).** The numerical value of slope helps to conclude that if equity increases by 2.41 percent the burden of debt would decrease by 100 percent for the company and vice versa.

The regression package of coefficient of determination (r^2) motivates to draw the perception that 10.7 percent change in the value of dependent variable is only explained by the regression equation of GPI firms. The inferential analysis tool of test of significance clearly reveals that the calculated 't' is less than its tabulated value. Thus, null hypothesis is accepted. It analyzes that there does not exist any fundamental difference between long term debt and equity.

The econometric tool of D W Test lies in-between in the range of negative autocorrelation (3.147), which signifies that a null hypothesis of no autocorrelation is rejected. It means there is no valid relationship between long term debt and equity variable of GPI firm. Similarly, the compound growth rate of long term debt and equity are 40.94 and 10.36 percent respectively.

Table. 5.8 : Regression Analysis of Sales and Capital Employed of Nepalese firms.

Firm	R	R Square	Adjusted R Square	Std. Error of the Estimate	ANOVAs		t-test		Regression value			
					F	Sig.	t cal	Sig.	intercept	slope	D W Test	Result
JCF	.301[a]	.091	-.023	75863.34	.796	.398[a]	-.89	.39	563371.46	-.349	1.66	Sig , no auto r
SURYA	.879	.772	.744	6.3175	27.15	.001	5.21	0.001	137683.35	1.632	1.11	Sig, inclusive

*** $t_{.05}$ at df(10)=2.228, $F_{.05}$ at a. Predictors:(Constant), capital employed x df(10,1)=4.965**

Source: *Computed from the annual reports of the companies during FY 1999/2000-2008/2009.and Appendix-3, 4, 7, 8, 9, 10 & 17.*

Null Hypothesis Ho:(u=0) There is insignificant difference between the mean value of ratio measuring the sales and capital employed of Nepalese tobacco company.

Alternative Hypothesis H1:(u=0) There is significant difference between the mean value of ratio measuring the sales and capital employed of Nepalese tobacco company.

Regressing sales and capital employed through the linear regression model.

Y=563371.468**-0.** 349 **x**

The statistical calculation of slope value specifies that there exits adverse relationship between capital employed (y) and sales value(x) of

JCF. The numerical value of slope helps to conclude that if sales increase by 34.9 percent the burden of capital employed decreases by 100 percent for the company and vice versa.

The regression package of coefficient of determination (r^2) motivates to draw the perception that 9.10 percent change in the value of dependent variable is only explained by the regression equation of JCF.

The inferential analysis tool of test of significance clearly reveals that the calculated t-value is less than its tabulated value, therefore null hypothesis is accepted which helps to conclude that there is insignificant any fundamental difference between sales and capital employed of JCF.

The econometric tool of D W test lies in range of no auto correlation, which signifies that, it cannot be, established the valid relationship between capital employed and sales variable of JCF firm.

Similarly regressing capital employed and sales of Surya Nepal through the linear regression model shows the statistical calculation of slope value to have positive relationship between capital employed (y) and sales(x) value of firms **(Y=**137683.350 +1.632**x).** The numerical value of slope helps to conclude that if sales increases by 163.2 percent the capital employed also increase by 100 percent for the company and vice versa.

The regression package of coefficient of determination (r^2) motivates to draw the perception that 77.2 percent change in the value of dependent variable is only explained by the regression equation of Surya Nepal firms.

The inferential analysis tool of test of significance clearly reveals that the calculated t is higher than its tabulated value. Thus, null hypothesis is rejected. It means that there is an existence of fundamental difference between capital employed and sales.

The econometric tool of D W test lies in-between in the range of inclusive, which helps to draw the perception that, whether there is any expiation of the validity of relationship or not.

Similarly regressing capital employed and sales of Surya Nepal through the linear regression model shows the statistical calculation of slope value to have positive relationship between capital employed (y) and sales(x) value of firms **(Y=**137683.350 +1.632**x).** The numerical value of slope helps to conclude that if sales increases by 163.2 percent the capital employed also increase by 100 percent for the company and vice versa.

The regression package of coefficient of determination (r^2) motivates to draw the perception that 77.2 percent change in the value of dependent variable is explained only by the regression equation of Surya Nepal firms.

Table. 5.9 : Regression analysis of Sales and Capital Employed of Indian firm

Model Summary													
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	ANOVAs		t-test		Result	slope	DW Test		Result
					F	Sig.	T	Sig.	Intercept value			Df	
ITC	.993	.985	.983	45860.268	536.42	00	23.161	0.0	70127.036	.850	1.398	10	sig
GPI	.955	.912	.901	5288.98	83.107	00	9.116	0.0	-17674.377	.821	1.664	10	sig

* a. Predictors: (Constant), Sales
b. Dependent variable: ,Capital employed

** Calculated D.W. result: no auto correlation individually and both no autocorrelation zone.

Source: *Computed from the annual reports of the companies during FY 1999/2000-2008/2009.and Appendix-1, 2, 5, 6, 11 & 12, 17.*

The inferential analysis tool of test of significance clearly reveals that the calculated t is higher than its tabulated value. Thus, null hypothesis is rejected, which analyzes that there is an existence of any fundamental difference between capital employed and sales of Indian Firms.

The econometric tool of D W test lies in-between in the range inclusive.

Null Hypothesis Ho:(u=0) There is insignificant difference between the mean value of ratio measuring the capital employed and sales of selected tobacco company of Indian firm.

Alternative Hypothesis Ho:(u=0) There is significant difference between the mean value of ratio measuring the capital employed and sales of selected tobacco company of Indian firm.

Regressing capital employed and sales of ITC through the linear regression model**,**

Y=70127.036 +**.850x**

The statistical calculation of slope value specifies that there exits positive relationship between capital employed (y) and sales(x) value of firms. The numerical value of slope helps to conclude that if sales increases by 85 percent the burden of capital employed also increase by 100 percent for the company and vice versa.

The regression package of coefficient of determination (r^2) motivates to draw the perception that 98.5 percent change in the value of dependent variable is explained only by the regression equation of ITC firms.

The inferential analysis tool of test of significance clearly reveals that the calculated t-value is greater than its tabulated value; therefore, null hypothesis is rejected. It analyzes that there does exist any fundamental difference between capital employed and sales.

The econometric tool of D W test lies in range of no autocorrelation, which signifies that null hypotheses are accepted. It cannot be established the valid relationship between capital employed and sales variable of ITC firm.

Similarly, regressing capital employed and sales of GPI through the linear regression model shows the statistical calculation of slope value to have positive relationship between capital employed (y) and sales(x) value of firms**.(Y=**-17674.377 + .821**x).** The numerical value of slope helps to conclude that if sales increases by 82.1 percent the burden of capital employed would increase by 100 percent for the company and vice versa.

The regression package of coefficient of determination (r^2) motivates to draw the perception that 91.2 percent change in the value of dependent variable is only explained by the regression equation of GPI firms.

The inferential analysis tool of test of significance clearly reveals that the calculated t is greater than its tabulated value. Thus, null hypothesis is rejected. It analyzes that there does exist any fundamental difference between capital employed and sales.

The econometric tool of D W test lies in-between in the range of no autocorrelation, which signifies that the null hypotheses are accepted and it helps to conclude that it cannot be established the valid relationship between capital employed and sales variable of GPI firm.

5.1.1.3 Sensitivity of major business factors with Capital Structure

The major sensitive business factors viz; Profit, sales, growth, liquidity, risk and tangibility are taken into consideration to measure the sensitivity with the capital structure component i.e., with debt. The sensitivity, here, refers to the extent of influence of these fundamental factors upon the debt composition of the firm. In the mean time,

multicolinearity analysis is used to evaluate the same. However, six predictors for LTDR have been used for the measurement and Seven Predictors for Total debt measurement. The variation in predictors is due to the insinuation of short term Liabilities in total debt computation.

Computation & Interpretation:

a) Multiple regression analysis of Leverage ratio of Tobacco Company with LTDR and TDR

This ratio shows the multiple regression analysis of long term debt and other independent factor. The independent variables are business risk liquidity, natural logarithm value of sales, tangibility of assets and growth trend of total assets.

Table 5.10 : An Econometric Analysis and statistical Analysis of Leverage ratio with LTDR of JCF & Coefficient of JCF

Model				t	sig	Multi Colinearity Statistics					
		Beta	Std. Error			Tolerance	VIF	S. Error of r	R	R^2	D.W Test
JCF	(Constant)	1083.05	709.61	1.526	.224			4.65	.938	.838	2.564
	logSalesx1	-79.216	52.469	-1.510	.228	.087	11.495				
	PROFITx2	.022	.652	.034	.975	.035	28.746				
	TANGx3	.662	1.597	.415	.706	.316	3.164				
	GROWtax4	.067	.365	.185	.865	.112	8.903				
	LIQx5	.229	6.876	.033	.976	.390	2.563				
	BRISKx6	.049	.019	2.495	.088	.234	4.267				

*$t_{.05}$ at df(10)=2.228, $t_{.01}$=3.169 Dependent Variable: LTDRy

Source: *Computed from the annual reports of the companies during FY 1999/2000-2008/2009 Appendix 9*

Formulating the regression equation considering LTDR as dependent variable,

Y=a+b1x1logsales+b2x2profit+b3x3TANG+b4x4GROW+b5x5LIQ+b6x6BRISK+……

The statistical calculation (Table4.9) signifies that there exits adverse relationship between long term debt and sales of JCF. In fact, the numerical value of slope clearly shows that if sales increases by 7921.6 percent, the long term debt of JCF declines by 100 percent. It implies that JCF can get rid of long term debt management, if it enhances the volume of sales by 7921.6 percent practically. However, there exists positive relationship between long term debt and the volume of profit, tangibility of assets, and growth of total assets, liquidity and business risk. The statistical calculation of multiple regressions identifies that the long term debt increases by 100 percent, if JCF manages to increase profit, tangible assets growth of total assets, liquidity and business risk by 2.2, 66.2, 6.7, 22.9, and 4.9 percents respectively and vice versa. The numerical value of r is very high (.938) and thereby it looks as like a clean case of multicolinearity, which is supported by the magnitude of S.E. of .465. The econometric tool analysis the D.W. values lie between greater than DL and less than DU which is 2.564. It is the spurious relationship case between dependent (*LTDR*) and independent variables (*(Constant), BRISKx6, LIQx5, and logSalesx1, TANGx3, GROWtax4, and PROFITx2)* and it does not analyse real picture of the variables and the companies.

Table 5.11 : ANOVAs of Long Term Debt and other group of Independent Variables of JCF

Model		Sum of Squares	d.f	Mean Square	F	F .05
JCF	Regression	1137.079	6	189.513	8.766	8.941
	Residual	64.856	3	21.619		Sig .05
	Total	1201.935	9			

Source: Computed from the annual reports of the companies during FY 1999/2000-2008/2009 Appendix 13

*N=10-1=9 year, n-k-1=10-7-1, k-1

Formulating the hypothesis for Analysis of variance (ANOVA)

HO: There is insignificant variance between long term debt and group of independent variable.

H1: There is significant variance between long term debt and other independent variable.

Since the calculated value of ANOVA (8.76) is less than the tabulated value at 5% level of significance and thereby the null hypothesis is accepted. It implies that the variance between long term debt and other independent variable is negligible and insignificant especially in the field of capital structure management.

1. Total Debt Ratio (TDR) of JCF

This ratio shows the Beta analysis, Durbin Watson test and multiple correlation analysis of Term Debt Ratio and other Independent factor of JCF.

Table 5.12 : Econometric Analysis and Statistical Analysis of Leverage Ratio (TDR) of JCF

Model		Beta analysis and		Student t - Test	Test	Colinearity Statistics Tolerance	Colinearity Statistics VIF				
		Beta	Std. Error	T	Sig			S.E	R	R^2	D.W.
JCF	(Constant)	992.657	258.852	3.835	.062			1.71	.996	.993	3.003
	Sales	-68.134	19.122	-3.563	.071	.087	11.518				
	Profit	.368	.245	1.504	.271	.034	29.850				
	Liquidity	-8.522	6.908	-1.234	.343	.053	18.919				
	Tang	1.680	1.016	1.654	.240	.106	9.470				
	Growth	.320	.145	2.207	.158	.096	10.401				
	NTDS	-11.575	13.872	-.834	.492	.018	54.572				
	B Risk	.008	.008	1.079	.394	.212	4.712				

**t $_{.05}$ df(9)=2.262,t$_{.01}$=3.250 and t$_{.05}$ at df 10=2.228*

Source: *Computed from the annual reports of the companies during FY 1999/2000-2008/2009 Appendix 9*

Formulating the regression equation considering TDR as dependent variable,

Y=a+b1x1logsales+b2x2profit+b3x3TANG+b4x4GROW+b5x5LIQ+b6x6NTDS+b7x7BRISK+……

The statistical calculation (Table 5.12) signifies that there exists adverse relationship between total debt and sales, liquidity and Non debt tax shield (NTDS) of JCF. In fact the numerical value of slope clearly shows that, if the sales increase by 6813.4, liquidity increases by 852.2 and NTDS increase by 1157.5 percent, the total debt of JCF declines by 100 percent. It implies that JCF can get rid of total debt management, if it enhances the

volume of sales by 6813.4, liquidity by 852.2 and NTDS by 1157.5 percent practically. However, there exists positive relationship among total debt and the volume of profit, tangibility of assets, growth of total assets, and business risk. The statistical calculation of multiple regressions identifies that the total debt increases by 100 percent, if JCF manages to increase profit, tangible assets growth of total assets, and business risk by 36.8, 168.0, 32.0 and .8 percents respectively and vice versa. The numerical value of r is very high (.996) and thereby it looks like a clean case of multicolinearity, which is supported by the magnitude of SE of 1.71. The econometric tool analyses that DW value (2.564) lies between greater than DL and less than DU and, therefore, it is the case of spurious relationship between dependent and independent variables.

According to VIF Index, if co-linearity statistics exceeds more than 10, then such a case approaches towards multicolinearity. The table 5.12 clearly indicates that VIF indices in the case of sales, liquidity, and NTDS exceed 10; thereby these cases are inclining towards the case of multicolinearity. However, the Tangibility of assets and Business risks' VIF Indices are less than 10 and thereby these variables are not inclined towards multicolinearity. However, the colinearity index exceeds more than 2.5 and, therefore, these variables heading towards the concern zone of Multicolinearity.

Table 5.13 : ANOVAs of Total Debt and other group of Independent Variables of JCF

Model		Sum of Squares	Df	Mean Square	F	Sig.
JCF	Regression	776.659	7	110.951	37.889	.026[a]
	Residual	5.857	2	2.928		
	Total	782.515	9			

***F .05 at df(7,2)=19.35**

Source: *Computed From Table 5.12 and Appendix 13*

Formulating the hypothesis for Analysis of variance (ANOVA)

HO: There is insignificant variance between long term debt and other independent variable

H1: There is significant variance between long term debt and other independent variable

Since the calculated value of ANOVA (37.88) is greater than the tabulated value at 5% level of significance and thereby the null hypothesis is rejected. It implies that the variance between total debt and other independent variable is significant specifically in the field of capital structure management.

Table 5.14: Multicolinearity Diagnostics of JCF

Mode of	Dimension	Eigen value	Condition Index	Variance Proportions							
				Constant	Sales	Profit	Liquidity	Tang	Growth	NTDS	B Risk
JCF	1	5.015	1.000	.00	.00	.00	.00	.00	.00	.00	.00
	2	1.941	1.607	.00	.00	.01	.00	.00	.02	.00	.02
	3	.864	2.409	.00	.00	.01	.00	.00	.00	.00	.16
	4	.153	5.717	.00	.00	.07	.00	.00	.29	.00	.16
	5	.016	17.911	.00	.00	.00	.08	.05	.23	.01	.25
	6	.009	23.721	.00	.00	.06	.00	.14	.00	.02	.11
	7	.001	85.380	.00	.00	.04	.90	.69	.08	.97	.12
	8	2.211	1505.948	1.00	1.00	.81	.02	.12	.39	.01	.18

Source: C*omputed from Table 5.12 & Appendix 9 & 13.*

According to theoretical guideline, the R^2 is very high and F ratio is highly significant but the individual t – ratios are all insignificant. This is an evidence of the multicolinearity problem. If several Eigen values are closed to zero or if the condition index exceeds 15, these variables are to be highly inter correlated. Multicolinearity can also be examined by evaluating the condition index. Condition index are calculated as the square root of the ratios of the largest Eigen value to each successive Eigen value of variables. The condition index of greater than 15 indicates that a possible problem of multicolinearity while index greater than 30 suggest a serious problem of colinearity in regression model. The above table shows the Eigen value and condition index in all dimensions and for the multiple regression models. In all dimension of Eigen value, it does not exceed 15, therefore, it can be concluded that the multicolinearity problems does not exist in estimated model of regression of tobacco industries.

The condition indices of sales profit and liquidity are less than 15 and thereby these cases are not infected by multicolinearity problem. The tangibility of assets, growth of assets' condition indices lies between 15 and 30 and thereby these variables are surrounded by the problems of multicolinearity. However the NTDS and business risks' condition indices are more than 30, which reveal the case of the serious problem of multicolinearity in regression model. The probable reasons are basically due to unfavorable exogenous factors such as inappropriate tax policy working opposite to country economic requirement, insurgency of conflicts between ethnic groups, Lack of Improvisation and slow growth of Privatization, Inefficient utilization of Human Resource, Absence of Government Interest on Productive sectors and such other variables as well.

2) Total Debt Ratio (TDR) of Surya Nepal

This ratio shows the Beta analysis, Durbin Watson test and multiple correlation analysis of Term Debt Ratio and other Independent factor of Surya Nepal Tobacco Company.

In terms of computation, the dependant variable taken is TDR and the independent variables are (Constant), NTDS, LIQ, BRISK, GROW, PROFIT, TANG SIZEx.

Table 5.15 : Multiple regression analysis, multiple correlation, determinants of correlation, colinearity statistics and Darwin Watson test of Leverage ratio (TDR) of Surya.

Model				t	Sig.	Colinearity Statistics					
		Beta	Std. Error			Tole-rance	VIF	S.E	R	R^2	D.W.
SURYA	(Constant)	136.049	526.240	.259	.820			4.05	.979	.959	1.920
	SIZEx	-4.803	32.779	-.147	.897	.010	101.128				
	PROFIT	.578	1.008	.574	.624	.033	30.206				
	LIQ	-6.090	6.571	-.927	.452	.217	4.615				
	TANG	.380	.571	.666	.574	.024	41.483				
	GROW	.249	.280	.888	.468	.213	4.694				
	BRISK	.105	.228	.460	.691	.307	3.252				
	NTDS	-7.170	5.306	-1.351	.309	.060	16.631				

Source: *Computed from the annual reports of the companies during FY 1999/2000-2008/2009.and Appendix 10 & 13*

Formulating the regression equation considering TDR as dependent variable,

Y=a+b1x1SIZElogsales+b2x2profit+b3x3TANG+b4x4GROW+b5x5LIQ+b6x6BRISK+b7x7NTDS……

The statistical calculations in Table 5.15 signifies that there exists adverse relationship between total debt and sales, liquidity and NTDS of Surya. In fact, the numerical value of slope clearly shows that if sales increases by 480.3, liquidity increases BY 609 and NTDS increase by 717 percent, the total debt of Surya Nepal declines by 100 percent. It means that Surya Nepal Tobacco Company can get rid of total debt management if it enhances the volume of sales by 480.3, liquidity by 609 and NTDS by 717percent practically. However, there exists positive relationship between

total debt and the volume of profit, tangibility of assets, growth of total assets, and business risk. The statistical calculation of multiple regression identifies that the total debt increases by 100 percent if Surya Nepal manages to increase profit, tangible assets growth of total assets, and business risk by 57.8,38.0,24.9 and10.5 percent respectively and vice versa. The numerical value of r is very high (.979) and thereby it looks like a clean case of multicolinearity, which is supported by the magnitude of SE of 4.05. The econometric tool analysis the D.W. values lies between greater than DL and less than DU which is 1.928. It is the case of spurious relationship between dependent and independent variables.

According to VIF Index, if colinearity statistics exceeds more than 10, then in such a case it approaches towards Multicolinearity. The table 4.14 clearly indicates that VIF indices in the case of sales, profit, TANG, and NTDS exceed 10 thereby these cases are inclining towards the case of multicolinearity. However, the Liquidity, growth of assets and Business risks' VIF Indices are less than 10 and thereby these variables are not inclined towards multicolinearity. However, the colinearity index exceeds more than 2.5 and, therefore, these variables heading towards the concern zone of Multicolinearity.

Table 5.16 : ANOVAs of Total Debt and other group of independent Variables of Surya Nepal

Source of variation		Sum of Squares	d f	Mean Square	F	$F_{.05}$
Surya Nepal	Regression	761.052	7	108.722	6.633	19.35
	Residual	32.780	2	16.390		Sig .137
	Total	793.832	9			

Source: *Computed from table 5.15 & Appendix 12*

Formulating the hypothesis for Analysis of variance (ANOVA)

HO: There is insignificant variance between long term debt and other independent variable

H1: There is significant variance between long term debt and other independent variable.

Since the calculated value of ANOVA (6.63) is lesser than the tabulated value at 5% level of significance and thereby the null hypothesis is accepted. It implies that the variance between total debt and other independent variable is negligible and insignificant specified in the field of capital structure management of Surya Nepal.

3) Long Term Debt Ratio (LTDR) of Surya Nepal

The variation in LTDR of Surya Nepal can also be examined through the inferential tool of analysis of variance (ANOVA). The numerical evidence of ANOVA can also be verified by the help of following statistical schedule**:**

Table 5.17 : ANOVAs of Long Term debt and other group independent variables of Surya Nepal:

Source of Variation		Sum of Squares	Df	Mean Square	F	F.05
SURYA NEPAL	Regression	183.365	6	30.561	.845	8.941
	Residual	108.453	3	36.151		Sig .608
	Total	291.817	9			

Source: *Computed from Table 5.16& Appendix 13*

Formulating the hypothesis for Analysis of variance (ANOVA)

HO: There is insignificant variance between long term debt and other independent variable

H1: There is significant variance between long term debt and other independent variable.

The above table clearly exhibits that the calculated value of ANOVA (.845) is lesser than the tabulated value at 5% level of significance and thereby the null hypothesis is accepted. It means the variance between Long term debt (LTDR) and other independent variable is negligible and insignificant specifically in the field of capital structure management of Surya Nepal.

Table 5.18 : Multiple Regression Analysis, Multiple Correlation, Determinants of Correlation, Colinearity Statistics and Darwin Watson test of Leverage Ratio (lTDR) of Surya Nepal.

Model		Beta	Std. Error	T	Sig.	S.E	R	R^2	D.W.
SURYA	(Constant)	-285.988	365.508	-.782	.491	6.012	.793	.628	1.955
	SIZE×1	19.387	24.898	.779	.493				
	PROFIT×2	-.837	1.353	-.618	.580				
	LIQ×3	.656	9.436	.070	.949				
	TANG×4	.549	.658	.835	.465				
	GROW×5	.036	.370	.096	.930				
	BRISK×6	.245	.337	.727	.520				

Source: *Computed from the annual reports of the companies during FY 1999/2000-2008/2009 and Appendix 10 & 13*

Formulating the regression equation considering LTDR as dependent variable,

Y=a+b1x1logsales+b2x2profit+b3x3TANG+b4x4GROW+b5x5LIQ+b6x6BRISK+……

The statistical calculations as per Table 5.18 clearly show that there is adverse relationship between long term debt and profit of Surya Nepal. In this situation, the numerical value of slope clearly illustrates that if profit increases by 83.7 percent, the long term debt of Surya Nepal also decreases by 100 percent, which means that Surya Nepal can get rid of long term debt management if it enhances the volume of profit by 83.7 percent practically. However, there exists positive relationship between long term debt and the volume of sales, tangibility of assets, and growth of

total assets, liquidity and business risk. The statistical calculation of multiple regressions identifies that the long term debt increases by 100 percent, if Surya Nepal manages to increase sales, tangible assets growth of total assets, liquidity and business risk by 1938.7,54.9,3.6 and 24.5 percents respectively and vice versa. The numerical value of r is high (.793) and thereby it doesn't look like a case of multicolinearity, The SE of multiple regressions is the magnitude of se of6.012 The econometric tool analysis the D.W. values lies between greater than DL and less than DU which is 1.955. It is the case of spurious relationship between dependent and independent variables.

4) Long Term Debt Ratio (LTDR) of ITC, India:

In terms of computation, the dependant variable taken is LTDR and the independent variables are (Constant), BRISK, LIQ, SIZEx, GROW, TANG, PROFIT.

Table 5.19 : Multiple Regression Analysis, Multiple Correlations, and Determinants of Correlation, Colinearity Statistics and Darwin Watson Test of Leverage ratio (LTDR) of ITC:

Model		Beta	Std. Error	T	Sig.	R	R^2	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
ITC	Constant	177.564	22.897	7.755	.004	.997[a]	.993	.979	.75237	3.145
	SIZEx	-8.340	.889	-9.381	.003					
	Profit	-5.794	.839	-6.904	.006					
	LIQ	41.719	4.553	9.162	.003					
	Tang	1.033	.234	4.414	.022					
	Grow	.318	.058	5.490	.012					
	B Risk	.170	.093	1.821	.166					

Source: *Computed from the annual reports of the companies during FY 1999/2000-2008/2009.and Appendix 11 & 13*

Formulating the regression equation considering LTDR as dependent variable,

Y=a+b1x1logsales+b2x2profit+b3x3TANG+b4x4GROW+b5x5LIQ+

b6x6BRISK+……

The statistical calculations showed in table 5.19 signify that there is adverse relationship between long term debt and sales of ITC. The numerical value of slope also clearly exhibits that if sales increases by 834 percent and profit increase by 579.4 percent then the long term debt of ITC declines by 100 percent. It implies that ITC can get rid of long term debt management if it enhances the volume of sales by 834 percent and profit by 579.4 percent practically. However, there exists positive relationship between long term debt, tangibility of assets, and growth of total assets, liquidity and business risk. The statistical calculation of multiple regressions identifies that the long term debt increases by 100 percent, if ITC manages to increase tangible assets, growth of total assets, and liquidity and business risk by 4171.9, 103.3, 31.8 and 17 percent respectively and vice versa. The numerical value of r is very high (.997) and thereby it looks like a clean case of multicolinearity, which is supported by the magnitude of SE of .75. The econometric tool analysis the D.W. values lies between greater than 4-DL which is 3.145. It is the case of negative autocorrelation between dependent and independent variables. It means it is invalid relationship between dependent and independent variable.

Table 5.20 : ANOVAs of Long Term Debt and other group of Independent Variables of ITC

Source of variation		Sum of Squares	Df	Mean Square	F	Sig.
ITC	Regression	241.781	6	40.297	71.189	.003[a]
	Residual	1.698	3	.566		
	Total	243.479	9			

***F .05 at df(6,3)=8.41**

Source: *Computed from Table 5.19 & Appendix 13*

Formulating the hypothesis for Analysis of variance (ANOVA)

HO: There is insignificant variance between long term debt and other independent variable

H1: There is significant variance between long term debt and other independent variable.

Since the calculated value of ANOVA (8.76) is greater than the tabulated value at 5% level of significance and thereby the null hypothesis is rejected. It implies that the variance between long term debt and other independent variable is significant specifically in the field of capital structure management of ITC.

5) Total Debt Ratio (TDR) of ITC, India

In terms of computation, the dependant variable taken is TDR and the independent variables are, BRISK, LIQ, SIZEx, GROW, TANG, PROFIT and NTDS of ITC as exhibits below.

Table 5.21 : Multiple Regression Analysis, Multiple Correlation, Determinants of Correlation, Colinearity Statistics and Darwin Watson test of Leverage Ratio (TDR) of ITC

Model				T	Sig.	Colinearity Statistics			Adjusted R Square		Durbin-Watson
		B	Std. Error			Tolerance	VIF	R	R^2	s.e	
TDR	(Constant)	205.731	18.472	11.137	.008			.999	.991	.606	3.517
	SIZEx	-9.141	.717	-12.753	.006	.102	9.759				
	PROFIT	-4.034	.683	-5.908	.027	.037	26.912				
	LIQ	29.983	3.673	8.163	.015	.041	24.206				
	TANG	.381	.267	1.426	.290	.044	22.769				
	GROW	.702	.047	14.865	.004	.244	4.099				
	BRISK	-.408	.084	-4.847	.040	.068	14.735				
	NTDS	1.439	2.030	.709	.552	.226	4.430				

Source: *Computed from the annual reports of the companies during FY 1999/2000-2008/2009.and Appendix 13*

Formulating the regression equation considering LTDR as dependent variable,

Y=a+b1x1logsales+b2x2profit+b3x3TANG+b4x4GROW+b5x5LIQ+b6x6BRISK+b7x7NTDS……

The numerical evidence of statistical calculation in table 5.21 explains that there exists adverse relationship between total debt and sales, profit and business risk of ITC. Similarly, the numerical value of slope clearly shows that if sales increase by 914.1, Profit increases by 403.4 and business risk also increases by 40.8 percent, but the total debt of ITC decreases by 100 percent. It implies that ITC can get rid of total debt

management if it enhances the volume of sales by 914.1, profit by 403.4 and Business risk by 40.8 percent practically. However, there exists positive relationship between total debts and the liquidity, tangibility of assets, growth of total assets, and non debt tax shield. The statistical calculation of multiple regression identifies that the total debt increases by 100 percent if ITC manages to increase liquidity, tangible assets growth of total assets, and non debt tax shield by 2998.3,38.1,70.2 and143.9 percent respectively and vice versa. The numerical value of r is very high (.999) and thereby it looks like a clean case of multicolinearity, which is supported by the magnitude of SE of 0.61. The econometric tool analysis the D.W. values lies in between greater than 4-DL which is 3.517. It is the case of negative autocorrelation between dependent and independent variables of ITC, which indicates that the relationship between the variables is spurious.

According to VIF Index, if colinearity statistics exceed more than 10, then in such a case it approaches towards multicolinearity. The table 5.21 clearly indicates that VIF indices in the case of, profit, liquidity and TANG, exceed 10 thereby these cases are inclining towards Multicolinearity. However, the sales, growth of assets and non debt tax shield's VIF Indices are less than 10 and thereby these variable are not inclined towards multicolinearity. However, the colinearity index exceeds more than 2.5 and, therefore, these variables heading toward the concern zone of multicolinearity.

Table 5.22 : ANOVAs of Total Debt and other group of Independent Variables of ITC:

Model Source of variation		Sum of Squares	Df	Mean Square	F	$F_{.05}$
TDR	Regression	359.918	7	51.417	139.934	19.35
	Residual	.735	2	.367		Sig .001
	Total	360.653	9			

Source: Computed From Table 5.21. & Appendix-13.

Formulating the hypothesis for Analysis of variance (ANOVA)

HO: There is insignificant variance between long term debt and other independent variable

H1: There is significant variance between long term debt and other independent variable

Since the calculated value of ANOVA (139.93) is greater than the tabulated value at 5% level of significance and thereby the null hypothesis is rejected. It implies that the variance between total debt and other independent variable is significant specifically in the field of capital structure management of ITC.

Table 5.23 : Multicolinearity Diagnostics of ITC

Model	Dimension	Eigen value	Condition Index	Variance Proportions							
				(Constant)1	SIZE x 2	PROFIT 3	LIQ 4	TANG 5	GROW 6	BRISK 7	NTDS 8
ITC	1	7.659	1.000	.00	.00	.00	.00	.00	.00	.00	.00
	2	.282	5.214	.00	.00	.00	.00	.00	.04	.02	.00
	3	.042	13.546	.00	.00	.00	.01	.00	.37	.06	.00
	4	.012	25.231	.00	.00	.00	.05	.00	.54	.25	.01
	5	.003	47.793	.00	.06	.00	.00	.01	.00	.00	.08
	6	.002	68.434	.01	.03	.02	.01	.00	.00	.06	.26
	7	.000	134.898	.03	.02	.01	.00	.65	.02	.51	.63
	8	4.435 E-5	415.585	.95	.89	.97	.93	.34	.03	.10	.02

Source: Computed from the annual reports of the companies during FY 1999/2000-2008/2009.and Appendix 11 & 13

According to theoretical guideline, the r^2 is very high and f ratio is highly significant but the individual t – ratio are all insignificant. This is an evidence of the Multicolinearity problem. If several Eigen values are close to zero or if the condition index exceeds 15, these variables are to be highly intercorrelated. Multicolinearity can also be examined by evaluating the condition index. Condition index are calculate the square root of the ratios of the largest Eigen value to each successive Eigen value of variables. The condition index of greater than 15 indicates that a possible problem of multicolinearity while index greater than 30 suggest a serious problem of colinearity in regression model. The above table shows the Eigen value and condition index in all dimensions and for the multiple regression models. In all dimension of Eigen value does not exceed 15, it can be concluded that the multicolinearity problems does not exist in estimated model of regression of tobacco industries.

The condition indices of sales and profit are less than 15 and thereby these cases are not infected by multicolinearity problem. The liquidity condition indices lie between 15 and 30 and thereby these variables are surrounded by the problems of multicolinearity. However the TANG, GROW, NTDS and business risks' condition indices are more than 30, which reveal the case of the serious problem of multicolinearity.

6) Long Term Debt Ratio (LTDR) of GPI India

The variation in LTDR of GPI can also be examined through the inferential tool of analysis of variance (ANOVA). The numerical evidence of ANOVA can also be verified by the help of following statistical schedule. In terms of computation, the dependant variable taken is LTDR and the independent variables are (Constant), BRISK, TANG, LIQ, GROW, SIZEx, PROFIT.

Table 5.24 : ANOVAs of long Term Debt and other Independent Variables of GPI

Model source of variation		Sum of Squares	D.f	Mean Square	F_{cal}	$F_{.05}$
GPI	Regression	204.665	6	34.111	11.590	8.941
	Residual	8.829	3	2.943		Sig...035
	Total	213.494	9			

Source: Computed from Table 5.23 & Appendix 13

Formulating the hypothesis for Analysis of variance (ANOVA)

HO: There is insignificant variance between long term debt and other independent variable

H1: There is significant variance between long term debt and other independent variable

Since the calculated value of ANOVA (11.590) is greater than the tabulated value at 5% level of significance and thereby the null hypothesis is rejected. It implies that the variance between Long term debt and other

independent variable is significant specifically in the field of capital structure management of GPI.

Table 5.25 : Multiple Regression Analysis, Multiple Correlation, Determinants of Correlation, Colinearity Statistics and Darwin Watson test of Leverage Ratio (LTDR) of GPI

Model		B	Std. Error	T	Sig.	R	R^2	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
GPI	(Constant)	-149.719	40.349	-3.711	.034	.979[a]	.959	.876	1.71556	2.934
	SIZEx	12.451	3.363	3.703	.034					
	PROFIT	1.216	.834	1.457	.241					
	LIQ	-20.553	8.888	-2.312	.104					
	TANG	.997	.245	4.078	.027					
	GROW	.185	.078	2.359	.099					
	BRISK	-.173	.113	-1.530	.223					

Source: Computed from the annual reports of the companies during FY 1999/2000-2008/2009.and Appendix 12 & 13

Formulating the regression equation considering LTDR as dependent variable,

Y=a+b1x1logsales+b2x2profit+b3x3TANG+b4x4GROW+b5x5LIQ+b6x6BRISK+……

The statistical calculation (Table 5.25) explains that there exits adverse relationship between long term debt and liquidity and business risk of GPI. In fact the numerical value of slope clearly shows that if LIQUIDITY AND BUSINESS RISK increases by2055.3 and17.3 percent, the long term debt of GPI declines by 100 percent. It implies that GPI can get rid of long term debt management if it enhances the amount of liquidity by 2055.3 percent and business risk by 17.3 percent practically. However, positive

relationship exists among long term debt and sales, profit, the tangibility of assets and growth of total assets. The statistical calculation of multiple regressions identifies that the long term debt increases by 100 percent if GPI manages to increase sales, profit, tangible assets and growth of total assets by 1245.1, 121.6, 99.7 and 18.5 percent respectively and vice versa. The numerical value of r is very high (.979) and thereby it looks like a clean case of multicolinearity, which is supported by the magnitude of SE of 1.715. The econometric tool analysis the D.W. values lies between greater than 4-DL which is 2.93. It is the case of negative autocorrelation between dependent and independent variables. It indicates that the relationship between the variables is spurious.

7) Total Debt Ratio (TDR) of GPI India

The variation in TDR of GPI can also be examined through the inferential tool of analysis of variance (ANOVA). The numerical evidence of ANOVA can also be verified by the help of following statistical schedule**:**

Table 5.26 : ANOVAs of Total debt and other independent variables of GPI

Model source of variation		Sum of Squares	d.f	Mean Square	F	$F._{O5}$
GPI	Regression	496.053	7	70.865	1.625	19.35
	Residual	87.209	2	43.604		Sig .210
	Total	583.262	9			

Source: *Computed From Table 5.25 & Appendix 13*

Formulating the hypothesis for Analysis of variance (ANOVAs)

HO: There is insignificant variance between long term debt and other independent variable

H1: There is significant variance between long term debt and other independent variable

Since the calculated value of ANOVA (1.625) is greater than the tabulated value at 5% level of significance and thereby the null hypothesis is accepted. It implies that the variance between total debt and other independent variable is insignificant specifically in the field of capital structure management of GPI.

Table 5.27 : Multiple Regression Analysis, Multiple Correlation, Determinants of Correlation, Colinearity Statistics and Durbin Watson test of Leverage Ratio (TDR) of GPI

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Colinearity Statistics		R	R 2	Adjusted R Square	Std. Error Estimate	Durbin-Watson
		B	Std. Error	Beta			Tolerance	VIF					
GPI	(Constant)	-160.208	197.823		-.810	.503			.922	.850	.327	6.603	2.481
	SIZEx	2.864	22.009	.094	.130	.908	.144	6.967					
	PROFIT	6.002	4.316	1.506	1.391	.299	.064	15.691					
	LIQ	-21.081	35.287	-.308	-.597	.611	.281	**3.559**					
	TANG	2.629	2.146	1.168	1.225	.345	.082	12.152					
	GROW	.633	.365	1.043	1.734	.225	.207	4.837					
	BRISK	-.726	.654	-1.655	-1.110	.382	.034	29.725					
	NTDS	.280	26.039	.017	.011	.992	.028	35.220					

Source: *Computed from the annual reports of the companies during FY 1999/2000-2008/2009.and Appendix 12 & 13*

Formulating the regression equation considering LTDR as dependent variable,

Y=a+b1x1logsales+b2x2profit+b3x3TANG+b4x4GROW+b5x5LIQ+b6x6BRISK+b7x7NTDS……

The statistical calculation (Table 5.27) explains that there exits adverse relationship between total debt and liquidity and business risk of GPI. In fact the numerical value of slope clearly shows that if liquidity and business risk increases by 2108.1 and 72.6 percent, the total debt of GPI declines by 100 percent. It implies that GPI can get rid of total debt management if it enhances the amount of liquidity by 2108.1 percent and business risk by 72.6 percent practically. However, positive relationship exists among total debt and sales, profit, the tangibility of assets, NTDS and growth of total assets. The statistical calculation of multiple regressions identifies that the total debt increases by 100 percent if GPI manages to increase sales, profit, tangible assets NTDS and growth of total assets by 286.4,600.262.9,28 and 63.3 percent respectively and vice versa. The numerical value of r is very high (.922) and thereby it looks like a clean case of multicolinearity, which is supported by the magnitude of SE of 6.60. The econometric tool analysis the D.W. values lies between greater than 4-DL which is 2.481. It is the case of inconclusive between dependent and independent variables. It indicates that the relationship between the variables is spurious.

According to VIF Index, if colinearity statistics exceeds more than 10 than such a case approaches towards Multicolinearity. The table 5.27

clearly indicates that VIF indices in the case of, profit, TANG, BRISK and NTDS, exceed 10 thereby these cases are inclining towards the case of multicolinearity. However, the sales, liquidity and growth of assets VIF Indices are less than 10 and thereby these variables are not inclined towards multicolinearity. However, the colinearity index exceeds more than 2.5 and therefore these variables heading towards the concern zone of Multicolinearity.

Table 5.28 : Multicolinearity Diagnostics of GPI Tobacco Company

Model	Dimension	Eigen value	Condition Index	Variance Proportions							
				(Constant) 1	SIZEx 2	PROFIT 3	LIQ 4	TANG 5	GROW 6	BRISK 7	NTDS 8
GPI	1	6.875	1.000	.00	.00	.00	.00	.00	.00	.00	.00
	2	.783	2.962	.00	.00	.00	.00	.00	.04	.02	.00
	3	.297	4.807	.00	.00	.00	.00	.00	.23	.03	.00
	4	.037	13.590	.00	.00	.00	.00	.02	.00	.00	.01
	5	.004	44.131	.00	.00	.00	.19	.16	.04	.00	.06
	6	.003	48.707	.00	.00	.00	.15	.19	.04	.00	.06
	7	.000	152.194	.07	.01	.92	.61	.05	.49	.82	.27
	8	4.365	396.854	.93	.99	.07	.04	.59	.15	.13	.61

Source: *Computed From Table 5.27 & Appendix 13*

According to theoretical guideline, the r^2 is very high and f ratio is highly significant but the individual t – ratio are all insignificant. This is an evidence of the multicolinearity problem. If several Eigen values are close to zero or if the condition index exceeds 15, these variables are to be highly intercorrelated. Multicolinearity can also be examined by evaluating the

condition index. Condition index are calculated by the square root of the ratios of the largest Eigen value to each successive Eigen value of variables. The condition index of greater than 15 indicates that a possible problem of multicolinearity while index greater than 30 suggest a serious problem of colinearity in regression model. The above table shows the Eigen value and condition index in all dimensions and for the multiple regression models. In all dimension of Eigen value does not exceed 15, it can be concluded that the multicolinearity problems does not exists in estimated model of regression of tobacco industries.

The condition indices of sales profit and liquidity are less than 15 and thereby these cases are not infected by multicolinearity problem. However the TANG, GROW, NTDS and business risks' condition indices are more than 30, which reveal the case of the serious problem of multicolinearity.

If the goal is to understand how the various X variables impact Y, then Multicolinearity is a big problem of Indian tobacco companies. One problem is that the individual P values can be misleading (a P value can be high, even though the variable is important). The second problem is that the confidence intervals on the regression coefficients will be very wide. The confidence intervals may even include zero, which means it can't even be confident whether an increase in the X value is associated with an increase, or a decrease, in Y. Because the confidence intervals are so wide, excluding a subject (or adding a new one) can change the coefficients dramatically and may even change their signs.The problem of

multicolinearity erupt mainly due to, heavily related tax on tobacco cost, social responsibility problems, tobacco production control policy followed by WHO and government, Interest conflict of Tobacco farmer and company, labor management disputes and inadequate sources of fund and Import and export policies of WTO.

5.1.1.4 Efficiency of Capital Structure Analysis

This part of the study purposes to analyze how efficiently capital structure can be managed for tobacco industries in Nepal and India. The main motto of any firm is to invest fund in business to make sales and earn more profits lowering costs as well as financial risk. The efficiency of company's capital structure shows how the company's total assets are directly managed by the debt capital. The efficient management of capital structure helps to minimize the level of financial risk and maximize the return in business, which eventually, increases the market value of the firm. Three ratios have been computed for the efficiency measurement of capital structure for these tobacco firms. These are capital employed turnover ratio, interest coverage ratio and return on capital employed. These ratios exhibit how the permanent capital has been utilized by the tobacco companies to earn more profit with regards to the payment of fixed interest bearing charges. Therefore, the capital structure of tobacco companies reflects the significant impact on its long term sources of capital as debt and earning health of the firm.

Computation & Interpretation:

The Capital Employed Turnover Ratio and Interest coverage ratio for comparing the intra industry firms have been considered. However, risk analysis through computation of Standard Deviation and Standard Error of mean has also been used. It can be explained as under:

Table 5.29 : Capital Employed Turnover Ratio and Interest coverage Ratio of Tobacco industry of Nepal and India.

Table 5.29.1 Nepalese Scenario

Ratios	JCF Mean	Se mean	JCF SD	Surya Nepal Mean	Se mean	Surya Nepal SD	t-values	d.f.	Result	F value
Capital employed turnover ratio	7.486	.569	1.80	3.069	.1407	.44	7.526	18	Significant at 1%	56.65
Interest coverage ratio	.407	1.48	4.70	1186.	715.3	1892.7	2.009	18	Insignificant at 5%	4.39

***t .05 at 10 d.f = 1.883,F .05 at 10,1 d.f. =241.882**

Source: *Appendix 9 & 10.*

Hypothesis Ho:(u=0) There is insignificant difference between the mean value of ratio measuring the capital employed turnover ratio in the selected tobacco industries of Nepalese firms.

H1=(u=1) There is significant difference between the mean value of ratio measuring the capital employed turnover ratio in the selected tobacco industries of Nepalese firms.

Capital employed turnover ratio shows the relationship between sales and capital employed. Capital employed indicates the total of long term debt and shareholders' equity.

The above table 5.29.1 shows that the calculated value of t is greater than its tabulated value at $t_{.05}$ and, therefore, Ho is accepted. It implies that there is insignificant difference between the mean values of capital employed turnover ratios of Nepalese tobacco firms.

Hypothesis Ho:(u=0) There is insignificant difference between the mean value of ratio measuring the interest coverage ratio in the selected tobacco industries of Nepalese firms.

H1=(u=1) There is significant difference between the mean value of ratio measuring the interest coverage ratio in the selected tobacco industries of Nepalese firms.

The above table clearly shows the relationship of interest coverage ratios between Nepalese tobaccos firms wherever, the calculated value of t is lesser than its tabulated value at 5 percent level of significance at 18 degree of freedom. Therefore, the null hypothesis is accepted. Moreover calculated F value is lesser than tabulated value. Therefore, it can be clear that, there is insignificant difference between the interest coverage ratios in the selected tobacco industries of Nepalese firms.

Table 5.29.2 Indian Scenario

Ratios	ITC Mean	Se mean ITC	ITC SD	GPI Mean	Se mean	GPI SD	t-values	d.f.	Result	F value
Capital employed turnover ratio	1.88	.06	0.21	3.80	.25	.81	7.24	18		52.44
Interest coverage ratio	331.24	149.11	471.53	43.33	5.75	18.19	1.93	18		3.72

***t .05 at 10 d.f = 1.883,F .05 at 10,1 d.f. =241.882**

Source: *Appendix 11 & 12*

Hypothesis Ho :(u=0) There is insignificant difference between the mean value of ratio measuring the capital employed turnover ratio in the selected tobacco industries of Indian firms.

H1=(u=1) There is significant difference between the mean value of ratio measuring the capital employed turnover ratio in the selected tobacco Industries of Indian firms.

Since the calculated value of t is greater than its tabulated value at $t_{.05}$ and, therefore, Ho is accepted. It implies that there is insignificant difference between the mean values of capital employed turnover ratios of Indian tobacco firms.

Hypothesis Ho:(u=0) There is insignificant difference between the mean value of ratio measuring the interest coverage ratio in the selected tobacco industries of Indian firms.

H1= (u=1) There is insignificant difference between the mean value of ratio measuring the interest coverage ratio in the selected tobacco industries of Indian firms.

The above table clearly exhibits that the calculated value of interest coverage ratio of t is lesser than tabulated value at 5 percent level of significance at 18 degree of freedom. Therefore, the statistical evidence proves that null hypothesis is accepted. Moreover, calculated F value is lesser than tabulated value. It can be clear that there is insignificant difference between the interest coverage ratios in the selected tobacco industries of India.

The table below highlights the comparative outputs for analyzing the return on capital employed between firms and industries of Nepal and India.

Table 5.30 : Comparative Rank Correlations of ROCE between Countries

Name of Rank	Correlation		Indian case		Nepalese case	
			ITC	GPI	JCF	SURYA
Spearman's rho	ITC	Correlation Coefficient	1.000	.079	1.000	-.891**
		Sig. (2-tailed)	.	.829	.	.001
		N	10	10	10	10
	GPI	Correlation Coefficient	.079	1.000	-.891**	1.000
		Sig. (2-tailed)	.829	.	.001	.
		N	10	10	10	10

Source: *Computed from Appendix 9-12*

The numerical calculation of Charles spearman's rank correlation coefficient shows that there exists positive correlation between the return on capital employed between two Indian tobacco companies ITC and GPI. The numerical calculation helps to conclude that if the magnitude of capital employed increases by 7.9 percent, the volume of return increases by 100 percent and vice versa.

However, the numerical calculation of Charles spearman's rank correlation coefficient shows that there exists negative correlation between the return on capital employed between two Nepalese tobacco companies JCF and SURYA. The numerical calculation helps to conclude that if the magnitude of capital employed increases by 89.1 percent, the volume of return decreases by 100 percent and vice versa as it is seen from the appendix 9, there exists negative ROCE for JCF. Similarly, the returns on SURYA NEPAL in terms of capital employed have increased gradually. Since, the rank correlation defines the cumulative analysis of return on capital employed, it can thus be interpreted that the negative correlation is because of the decreasing return of JCF that outweighs the increasing return of Surya Nepal.

Table 5.31 : JCF & Surya Nepal rank Correlations of ROCE (Nepalese Case)

			JCF	SURYA
Spearman's rho	JCF	Correlation Coefficient	1.000	-.891**
		Sig. (2-tailed)	.	.001
		N	10	10
	SURYA	Correlation Coefficient	-.891**	1.000
		Sig. (2-tailed)	.001	.
		N	10	10

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

Source: *Appendix 9 & 10*

The numerical calculation of Charles spearman's rank correlation coefficient shows that there exists negative correlation between the return on capital employed between two Nepalese tobacco companies JCF and SURYA. The numerical calculation helps to conclude that if the magnitude of capital employed increases by 89.1 percent, the volume of return decreases by 100 percent and vice versa. As it is seen from the appendix 9 , there exists negative ROCE for JCF. Similarly, the returns on SURYA NEPAL in terms of capital employed have increased gradually. Since, the rank correlation defines the cumulative analysis of return on capital employed, it can thus be interpreted that the negative correlation is because of the decreasing return of JCF that outweighs the increasing return of Surya Nepal.

5.1.1.5 Composition of Capital Structure analysis

Debt equity composition shows the appropriate pattern of external and internal funds of any firm. Shareholders' equity and business risk affect the cost of capital and market value of the firm. Appropriate capital structure is the combination of debt equity according to Modigliani Miller for maximising the Profitability without tax but Tobacco Company pays maximum portion of tax paid on sales and profit. The modern and other theory demonstrates to maintain optimum capital structure for maximising the shareholders' wealth. The following table shows the nature of capital structure composition of Nepalese and Indian tobacco companies.

Computation & Interpretation:

Table 5.32 : Debt Equity Ratio and Capital Gearing Ratio of Nepalese & Indian Tobacco Company.

Table 5.32.1 Nepal

Ratios	JCF Mean	Se mean	JCF SD	Surya Nepal Mean	Se mean	Surya Nepal SD	t-values	d.f	Result	F value
Debt Equity ratio	3.18	0.58	1.84	0.49	008	0.27	4.55	18		20.72
Capital Gearing Ratio	1.02	0.15	0.49	85.35	80.31	139.11	2.15	11		4.66

Source: *Computed from the annual reports of the companies during FY 1999/2000-2008/2009.and Appendix 9-10*

Applying inferential analysis tools of test of significance and variance ratio test, let us formulate the hypothesis

Hypothesis Ho:(u=0) There is insignificant difference between the mean value of ratio measuring the debt and equity in the selected tobacco industries of Nepalese firms.

H1 : (u=1) There is significant difference between the mean value of ratio measuring the debt and equity in the selected tobacco industries of Nepalese firms.

Since the calculated value of t is greater than its tabulated value at $t_{.05}$ and, therefore, Ho is rejected. It implies that there is significant difference between the mean value ratio of debt and equity in the selected tobacco industries of Nepalese firms.

Hypothesis Ho:(u=0) There is insignificant difference between the mean value of ratio measuring the long Capital gearing ratio in the selected tobacco industries of Nepalese firms.

Hypothesis H1:(u=1) There is insignificant difference between the mean value of ratio measuring the Capital gearing Ratio in the selected tobacco industries of Nepalese firms.

The above table clearly shows the capital gearing ratio relationship between Nepalese firms. Wherever, calculated value of t is lesser than tabulated value at 5 percent level of significance at 11 degree of freedom .The null hypothesis is accepted. Moreover calculated F value is lesser than its tabulated value and it can be clear that, there is insignificant difference between the capital gearing ratios of the selected tobacco industries.

Table 5.32.2 India

Ratios	ITC Man	Se mean ITC	ITC SD	GPI Mean	Se mean	GPI SD	t- values	d.f.	Result	F value
Debt Equity Ratio	0.51	0.04	0.14	0.17	0.02	0.05	7.03	18		49.44
Capital Gearing Ratio	41.62	8.48	26.83	48.41	30	94.89	0.21	18		0.04

Source: *Computed from the annual reports of the companies during FY 1999/2000-2008/2009.and Appendix 11-12.*

Applying inferential analysis tools of test of significance and variance ratio test, let us formulate the hypothesis:

Hypothesis Ho:(u=0) There is insignificant difference between the mean value of ratio measuring the debt and equity in the selected tobacco industries of Indian firms.

H1 : (u=1) There is significant difference between the mean value of ratio measuring the debt and equity in the selected tobacco industries of Indian firms.

Since the calculated value of t is greater than its tabulated value at t.05 and, therefore, Ho is rejected. It implies that there is significant difference between the mean value ratio of debt and equity in the selected industries of Indian firms.

Hypothesis Ho:(u=0) There is insignificant difference between the mean value of ratio measuring the Capital gearing ratio in the selected tobacco industries of Indian firms.

Hypothesis H1:(u=1) There is insignificant difference between the mean value of ratio measuring the Capital gearing Ratio in the selected tobacco industries of Indian firms.

The above table clearly exhibits the capital gearing ratio relationship between Indian firms wherever, calculated value of t is lesser than tabulated value at 5 percent level of significance at 11 degree of freedom .The null hypothesis is accepted. Moreover, calculated F value is lesser than tabulated value and it can be clear that, there is insignificant difference between the capital gearing ratios of the selected tobacco industries.

Test for Equality of Means between Series

Test for Equality of Means between Series of Nepal and India are calculated below the table.

Table 5.33: ANOVAs of Debt Equity Ratio of Nepal and India

Source of variation	Sum of Sq.	Mean Square	d.f.	F Ratio	F.05	Result
Between Samples	59.18701	19.72900	3	22.45	2..87	Not significant
Within samples	31.63127	0.878646	36			
Total	**90.81828**		**39**			

Source: *Computed from the annual reports of the companies during FY 1999/2000-2008/2009.and Appendix 9-12*

Ho : Null hypothesis :There is insignificant variations between debt & equity ratio between Nepalese and Indian tobacco companies

H1 : Alternative hypothesis: There is significant variations between debt & equity ratio between Nepalese and Indian tobacco companies.

Since the calculated value of F is greater than that of the tabulated value and hence, alternative hypothesis is accepted, which implies that debt equity ratio variations are significant in the tobacco companies of Nepal and India.

Table 5.34 Analysis of Variation (ANOVA) of Capital Gearing Ratio of Nepal and India

Source of variation	Sum of Sq.	Mean Square	d.f.	F Ratio	F.05	Result
Between Samples	21382.02	7127.339	3	1.637500	2..93	Significant
Within samples	126224.6	4352.574	29			
Total	147606.7		32			

Source: *Computed from the annual reports of the companies during FY 1999/2000-2008/2009.and Appendix 9-12.*

Ho: null Hypothesis: There is insignificant variation in capital gearing ratio between Nepalese and Indian tobacco companies

H1: Alternative hypothesis: There is significant variation in capital gearing ratio between Nepalese and Indian tobacco companies.

Since the calculated value of F is less than that of the tabulated value and hence, null hypothesis is accepted, which helps to draw the perception that capital gearing ratio variations are insignificant in the tobacco companies of Nepal and India.

Table 5.35 : Debt Composition percentage of Nepal and India

Year	JCF		Surya		ITC		GPI	
	Bank	Other	Bank	Other	Bank	Other	Bank	Other
2000	66.49	33.51	100	0	71.06	28.94	100	0
2001	50.46	49.54	100	0	65.87	34.13	100	0
2002	39.47	60.53	100	0	70.02	29.98	100	0
2003	49.37	50.63			39.77	60.23	100	0
2004	57.89	42.11			26.12	73.88	100	0
2005	49.99	50.01			36.15	63.85	100	0
2006	57.81	42.19			28.12	71.88	100	0
2007	41.86	58.14			30.26	69.74	100	0
2008	81.21	18.79			2.60	97.40	100	0
2009	81.92	18.08			6.55	93.45	100	0
Average	57.6473	42.3527	100	0	37.65045	62.34955	100	0
c.v.	0.26	0.33	0.19	0.00	0.62	0.37	0.29	0

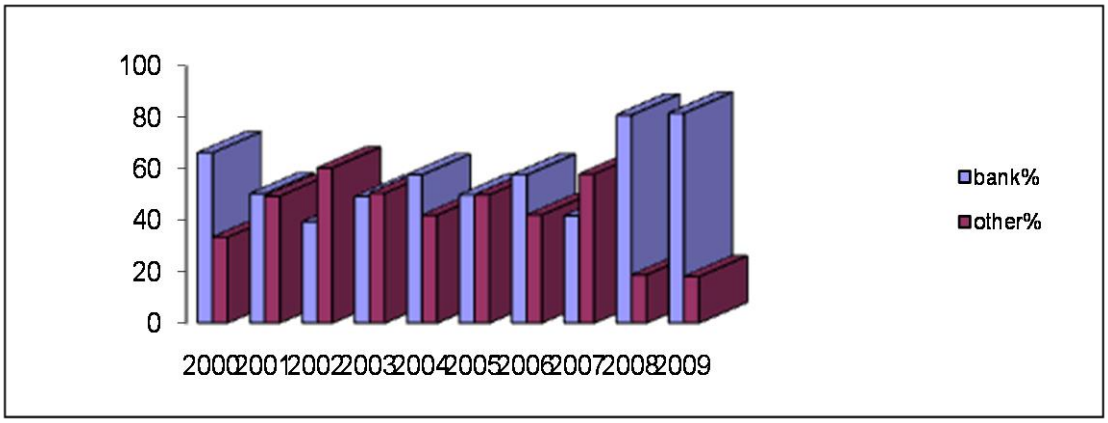
*** Jcf parts of other loan are provident fund**
*** Itc parts of other loan are fixed deposit, term loan and promissory note.**
Source: *Computed from the annual reports of the companies during FY 1999/2000-2008/2009.and Appendix 14*

The above table 5.35 shows that, the composition of debt used in business for promotion. Bank and other type of long term loan are used in business.

The bank loan of JCF is higher than Surya Nepal Tobacco Company. Besides, Bank Loan of JCF has used Provident Fund of staffs which is considered as other segments of loan management. During the study period other type of loan is in decreasing trend but bank loan has increased during 2008 and 2009.The coefficient of variation of JCF is 26 percent of bank loan and 33 percent of other type of loan. This analysis

indicates that bank and other type of loan are highly used by JCF in contrary to Surya Nepal. It also reveals that CV value of Surya Nepal is distinctly smaller than that of JCF and others. Such statistical figures help to conclude that Surya Nepal is more consistent in minimising the burden of loan. ITC has used 37.65 percent of bank loan, which is higher than GPI .The ITCs bank loan is in decreasing trend but other type of loan is in increasing trend. Other type of loan for ITC incorporates fixed deposit, term loan and promissory note. The coefficient of the variation helps to infer that bank loan of ITC is higher than GPI. It means ITC has used more debt than GPI for business promotion. Thus, ITC is more consistent in managing the comprehensive loan burden in the production management. It can thus be concluded that the Indian firms adhere to their companies capital structure policies and decisions whereas in case of Nepalese Tobacco firms, JCF doesn't have stringent policies for guiding their debt compositions unlike Surya Nepal Tobacco Industries, which constitutes better management control over capital structure decisions.

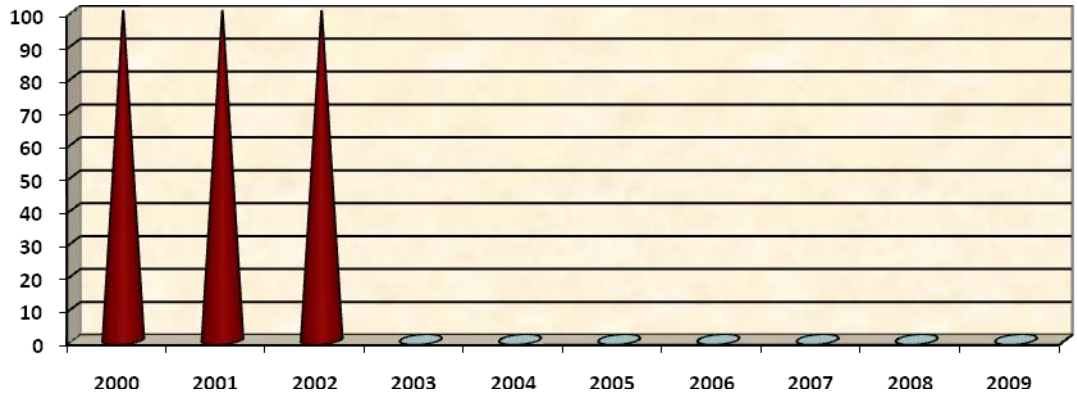
Fig 5.2 Composition of Long Term Debt of JCF



Source: *Computed From Table 5.35*

The above figure shows that, the bank loan has increased in the first year and has gradually declined in succeeding seven years. However, for last two years the debt portion from bank has increased in comparison to loan from other sources.

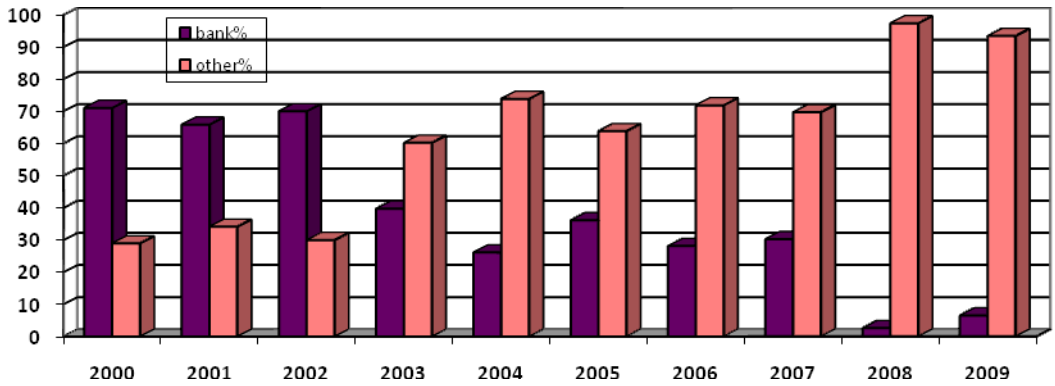
Fig 5.3 Composition of Long Term Debt of Surya Nepal



Source: *Computed From Table 5.35*

The above figure depicts the usage of long term debt i.e., Bank Loan by company for three years only. However, thereafter the company runs from its internal financing (equity).

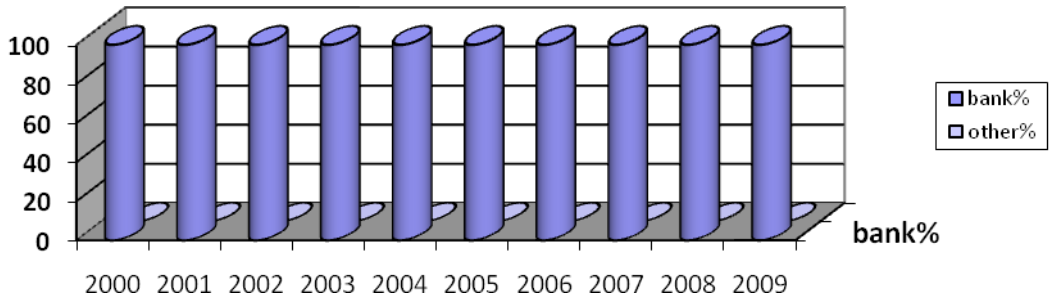
Fig 5.4 Composition of long term debt of ITC



Source: *Computed From Table 5.35*

In case of debt financing, the company has utilized fund from bank financing for three years and gradually has focussed on loan from other sources thus, reducing concentration on bank loans. It may be possibly due to comparative low cost of fund for usage of loan from other sources.

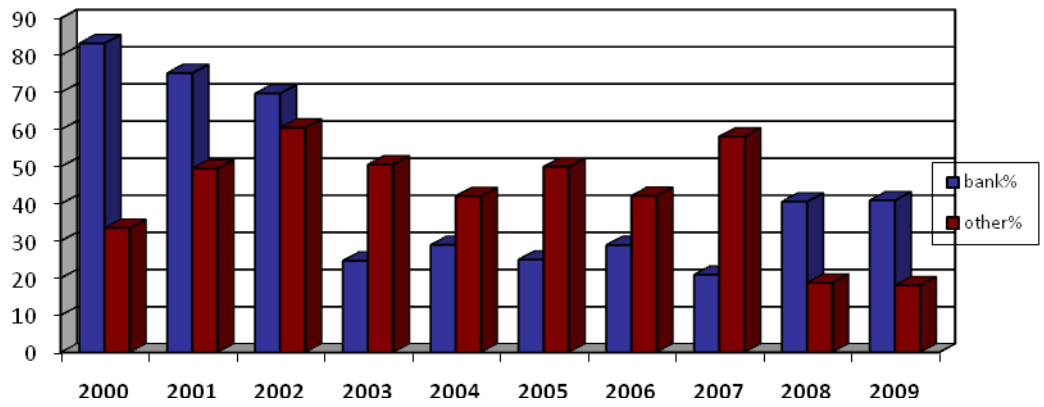
Fig 5.5 Composition of long term debt of GPI



Source: *Computed From Table 5.35*

The above figure reflects the usage of fund of GPI from bank loan. Further, the company hasn't focussed on any other sources of financing rather than bank loan in every consecutive year.

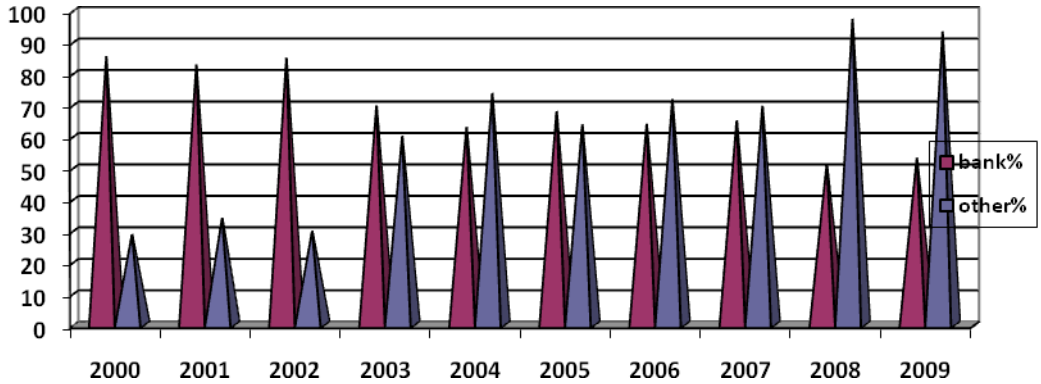
Fig 5.6 Composition of Long term Debt of Nepalese Company



Source: *Computed From Table 5.35*

From the above figure, we can see that the company has gradually reduced the usage of bank loan in succeeding years and has slowly concentrated on loans from other sources. Despite this, the company has on average reduced its concentration of debt financing in capital structure.

Fig 5.7 Composition of Long-term Debt of Indian Company



Source: *Computed From Table 5.35*

As reflected by above figure, In case of Indian firm, the concentration of debt financing is more in comparison to that of equity one. However, the concentration of bank loan has gradually reduced with increase in debt from other sources.

5.1.1.6 Debt Profitability Analysis of Capital Structure

The debt profitability resembles the analysis between return and debt components. Particularly, the analysis is done on the basis of two perspective; accounting and financial. The interpretation differs as per the ratios defined under each heads. In accounting analysis, paired sample t-test is applied whereas in case of financial analysis, stationarity and non-

stationarity test is defined using co-integration test. The detailed breakdown is as under mentioned;

A.) Accounting Ratios Analysis

Under accounting ratio analysis, paired sample test is used for sales and debt, debt-equity ratio & Profitability and Return on sales & Capital Turnover.

Table 5.36 : Pair Sample Test of JCF

	Pair components	Paired Differences					t	df	Sig. (2-tailed)	r	$t_{.05}$
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference						
					Lower	Upper					
Pair 1	Sales – Debt	.45300	.299	.0947	.23860	.667	4.780	9	2.226	-.490	2.226
Pair 2	Debt Equity Ratio – Profit ability	317.59	195.93	61.959	177.427	457.75	5.126	9	2.226	-.865	2.226
Pair 3	Return Sales – Capital Turnover Percentage	-754.75	193.55	61.208	-893.214	-616.28	-12.331	9	2.226	-.897	2.226

Source: *Appendix 3, 7, 9*

Now formulating the hypotheses of different pair group of t test, which affects each other, are as under.

Ho: There exists insignificant correlation between the paired variables (Capital employed and return on sales, debt equity ratio and profitability and pair of sales and debt)

H1: There exists significant correlation between the paired variables (Capital employed and return on sales, debt equity ratio and profitability and pair of sales and debt)

Since the calculated values of t for pair 1 and pair 2 are greater than that of t.05 and thereby it helps to accept alternative hypothesis. Such statistical analysis helps to conclude that the variables of pair 1 and pair 2 are significantly correlated with each other. However, the calculated t value of pair 3 is distinctly lower than that $t_{.05}$, which helps to accept null hypothesis. It implies that the variable of pair 3 is not properly correlated with each other. The inferential analysis of the test of significance motivates to specify that capital employed and return on sales of pair 1 and pair 2 of sales and debt is significantly correlated with each other. If these components are focused by the entrepreneurs', income employment generated can be promoted in the Nepalese soil. Thus, these components should be developed promptly for the social sector development of Nepal.

Table 5.37 : Paired Samples Test of Surya Nepal

		Paired Differences					t	df	Sig. (2-tailed)	r	t.05
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference						
					Lower	Upper					
Pair 1	Capital turn over - ros	291.55	46.88	14.826	258.013	325.094	19.664	9	.000	-.321	2.226
Pair 2	De ratio - profitability	13.56	24.07	7.612	-3.653	30.785	1.782	9	.108	.596	2.226
Pair 3	Sales size – debt size	1.33	.286	.0907	1.132	1.543	14.752	9	.000	.949	2.226

Source**:** *Appendix 4, 8 & 10*

Now formulating the hypotheses of different pair group of t test, which affects each other areas under.

Ho: There exists insignificant correlation between the paired variables (Capital employed and returns on sales, debt equity ratio and profitability and pair of sales and debt).

H1: There exists significant correlation between the paired variables (Capital employed and returns on sales, debt equity ratio and profitability and pair of sales and debt).

Since the calculated values of t for pair 1 and pair 3 are greater than that of t.05 and thereby it helps to accept alternative hypothesis. Such statistical analysis helps to conclude that the variables of pair 1 and pair 3 are significantly correlated with each other. However, the calculated t value of pair 2 is distinctly lower than that t .05, which helps to accept null hypothesis. It implies that the variables of pair 2 are not properly correlated with each other. The inferential analysis of the test of significance motivates to specify that capital employed and return on sales of pair 1 and pair 3 of sales and debt sizes significantly correlated with each other. If these components are focused by the entrepreneurs', income employment generation can be promoted in the Nepalese soil. Thus these components should be developed promptly for the social sector development of Nepal.

Table 5.38 : Paired Samples Test of ITC

		Paired Differences					t	df	Sig. (2-tailed)	r	$t_{.05}$
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference						
					Lower	**Upper**					
Pair 1	Capital turnover – ros	169.02	18.77	5.935	155.60	182.455	28.47	9	.000	.516	2.226
Pair 2	DE Ratio - profitability	22.37	13.50	4.271	12.715	32.040	5.239	9	.001	.413	2.226
Pair 3	Debt size – sales size	-.832	.236	.0747	-1.001	-.662	-11.13	9	.000	.964	2.226

Source: Computed from the *annual reports of the companies during FY 1999/2000-2008/2009.and Appendix 1, 3 & 11*

Now formulating the hypotheses of different pair group of t test , which affects each other areas under.

Ho: There exists insignificant correlation between the paired variables (Capital employed and returns on sales, debt equity ratio and profitability and pair of sales and debt)

H1: There exists significant correlation between the paired variables (Capital employed and returns on sales, debt equity ratio and profitability and pair of sales and debt)

Since the calculated values of t for pair 1 and pair 2 are greater than that of t.05 and thereby it helps to accept alternative hypothesis. Such statistical analysis helps to conclude that the variables of pair 1 and pair 2 are significantly correlated with each other. However, the calculated t value of pair 3 is distinctly lower than that t .05, which helps to accept null hypothesis. It implies that the variable of pair 3 is not properly correlated with each other. The inferential analysis of the test of significance motivates

to specify that capital employed and return on sales of pair 1 and pair 2 of debt equity ratio and profitability is significantly correlated with each other. If these components are focused by the entrepreneurs', income employment generated can be promoted in the Indian soil. Thus these components should be developed promptly for the social sector development of India. Moreover, these components focused by the firms of ITC to develop the image of emerging enterprises on global economy in general and Asian soil in particular.

Table 5.39: Paired Samples Test of GPI

		Paired Differences					t	df	Sig. (2-tailed)	r	$t_{.05}$
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference						
					Lower	Upper					
Pair 1	Capital turnover – ROS	370.35	82.078	25.955	311.63	429.07	14.26	9	.000	-.519	2.226
Pair 2	DE Ratio – Profitability	-4.933	4.962	1.569	-8.483	-1.382	-3.14	9	.012	.268	2.226
Pair 3	Debt Size – Sales Size	-1.579	.448	.141	-1.899	-1.258	-11.15	9	.000	.780	2.226

Source: *Appendix 2, 6 & 12*

Now formulating the hypotheses of different pair group of t test, which affects each other areas under.

Ho: There exists insignificant correlation between the paired variables (Capital employed and returns on sales, debt equity ratio and profitability and pair of sales and debt)

H1: There exists significant correlation between the paired variables (Capital employed and returns on sales, debt equity ratio and profitability and pair of sales and debt).

Since the calculated values of t for pair 1 is greater than that of t.05 and thereby it helps to accept alternative hypothesis. Such statistical analysis helps to conclude that the variables of pair 1 are significantly correlated with each other. However, the calculated t value of pair 2 and 3 are distinctly lower than that t .05, which helps to accept null hypothesis. It implies that the variables of pair 2 and Pair 3 are not properly correlated with each other. The inferential analysis of the test of significance motivates to specify that capital employed and return on sales of pair 1 is significantly correlated with each other. If this component is focused by the entrepreneurs', income employment generated can be promoted in the Indian soil. Thus these components should be developed promptly for the social sector development of India. Moreover, these components focused by the firms of GPI to developed the image of emerging enterprises on global economy in general and Asian soil in particular.

B) Financial Ratios Analysis (EBIT and EPS Analysis)

Under this analysis, reliability test for leverage is computed and co integration test has been performed for reliable leverage. In addition, Granger Causality test for ROS, ROA **and ROCE** is also taken into consideration.

Table 5.40 : Reliability Test of leverage Variable of Tobacco Company between Country

Realivility of leverage variables	4 Tobacco Company	Scale Statistics of 4 tobacco Company			
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Mean	Variance	Std. Deviation	No. of Items
.606	.487	17.9600	6639.773	81.48480	12

Source: *Appendix 9-12*

The reliability (Table 5.40) test of Nepalese and Indian tobacco company shows the greater than 0.5 of Cronbach's Alpha. It means the leverage analyses are done because the data are valid for leverage analysis of capital structure. For this purpose co integration test, correlogram and unit root test are applied for the condition of leverage position of capital structure.

i) Co integration test between Tobacco Company of Nepal and India

Moreover, the theory of co integration tries to study the interrelationships between long run movements of time series data. When the data is unit root or not stationary, co-integration test is applied. Co integration test shows whether there exists the long run relationship or not by its nature of data. The null hypothesis of co integration test is, there is insignificant correlationship of DFL and DOL between Nepalese and Indian Tobacco Company.

Table 5.41 : Unrestricted Co Integration Rank Test of JCF

Hypothesized No. of CE(s	Eigenvalue	Trace Statistic	5 Percent Critical Value	1 % Percent Critical Value
None	0.654090	14.32079	15.41	20.04
At most 1 *	0.517378	5.828172	3.76	6.65
Hypothesized No. of CE(s	Eigenvalue	Max-Eigen Statistic	5 Percent Critical Value	1 % Percent Critical Value
None	0.654090	8.492614	14.07	18.63
At most 1 *	0.517378	5.828172	3.76	6.65

**(**) denotes rejection of the hypothesis at the 5%(1%) level*
Trace test indicates no co integration at both 5% and 1% levels
Max-Eigen value test indicates no co integration at both 5% and 1% levels
Lags interval (in first differences): 1 to 1 and Trend assumption: Linear deterministic trend.
Source: *Appendix 9*

H0: There is no Co integration between two variables Degree of operating leverage and Degree of financial leverage of JCF

H1: There is Co integration between two variables Degree of operating leverage and Degree of financial leverage of JCF

The above table 5.41 shows the co integration relationship between two variables in 1 to 1 lag intervals of Trace test and Max Eigen values. There seems to be no co integrating relationship between 2 variables of JCF that is DOL and DFL. The Degree of financial leverage and degree of operating leverage are not co integrated because Trace Statistics and Max- Eigen values (14.32 & 8.49) are less than 5 % and 1% critical values of level of significance, thus the null hypothesis of no co integration is accepted and conclude that there is no co integration between two variables of JCF in 1 % level of significance. The null hypothesis that at most 1 co integrating relationship is rejected at 5% level of significance since trace statistic and Max –Eigen statistic are lesser than critical values. The numerical figure

shows that it concludes the degree of financial leverage and degree of operating leverage are no co integrated in the JCF tobacco company of Nepal.

Table 5.42 : Unrestricted Co integration Rank Test of Surya Nepal

Hypothesized No. of CE(s	Eigen value	Trace Statistic	5 Percent Critical Value	1 % Percent Critical Value
None	0.792083	13.14731	15.41	20.04
At most 1 *	0.070212	0.582388	3.76	6.65
Hypothesized No. of CE(s	Eigen value	Max-Eigen Statistic	5 Percent Critical Value	1 % Percent Critical Value
None	0.792083	12.56492	14.07	18.63
At most 1 *	0.070212	0.582388	3.76	6.65
***(**) denotes rejection of the hypothesis at the 5%(1%) level**				
Trace test indicates no co integration at both 5% and 1% levels				

Max-eigenvalue test indicates no co integration at both 5% and 1% levels
Source: *Appendix 10*

The table 5.42 shows that there is no co integrating relationship between 2 variables of Surya Nepal that is DOL and DFL., The Degree of financial leverage and degree of operating leverage are not co integrated because Trace Statistics and Max- Eigen values (14.32 & 8.49) are less than 5 % and 1% critical values, thus the null hypothesis of no co integration is accepted and conclude that there is no co integration relationship between two variables of Surya Nepal.

Table 5.43 : Unrestricted Co integration Rank Test of ITC

Hypothesized No. of CE(s	Eigen value	Trace Statistic	5 Percent Critical Value	1 % Percent Critical Value
None	0.778301	17.72219	15.41	20.04
At most 1 *	0.507785	5.670719	3.76	6.65
Hypothesized No. of CE(s	Eigen value	Max-Eigen Statistic	5 Percent Critical Value	1 % Percent Critical Value
None	0.778301	12.05147	14.07	18.63
At most 1 *	0.507785	5.670719	3.76	6.65
***(**) denotes rejection of the hypothesis at the 5%(1%) level**				
Trace test indicates 2 co integrating equation(s) at the 5% level				
Trace test indicates no co integration at the 1% level				

Max-eigenvalue test indicates no co integration at both 5% and 1% levels.
Source: *Appendix 11*

The table 5.43 shows that there is no co integrating relationship between 2 variables of ITC that is DOL and DFL., The Degree of financial leverage and degree of operating leverage are co integrated because Trace Statistics values (17.72 &) is lesser than 1 % critical values, thus the null hypothesis of no co integration is rejected and conclude that there is co integration relationship between two variables of ITC but Max Eigen value is lesser than 5 % level of significance it is concluded that there is co integration between two variables.

Table 5.44 : Unrestricted Co integration Rank Test of GPI

Hypothesized No. of CE(s	Eigen value	Trace Statistic	5 Percent Critical Value	1 % Percent Critical Value
None **	0.877788	22.02353	15.41	20.04
At most 1 *	0.478448	5.207567	3.76	6.65
Hypothesized No. of CE(s	Eigen value	Max-Eigen Statistic	5 Percent Critical Value	1 % Percent Critical Value
None **	0.877788	16.81597	14.07	18.63
At most 1 *	0.478448	5.207567	3.76	6.65
***(**) denotes rejection of the hypothesis at the 5%(1%) level**				
Trace test indicates 2 co integrating equation(s) at the 5% level				
Trace test indicates 1 co integrating equation(s) at the 1% level				

Source: *Appendix 12*

Table 5.44 shows that there is co integrating relationship between 2 variables of GPI that is DOL and DFL., The Degree of financial leverage and degree of operating leverage are co integrated because Trace Statistics and Max- Eigen values (22.02 & 16.18) are greater than 1 % and 5 % critical values, thus the null hypothesis of no co integration is rejected and conclude that there is co integration between two variables of GPI. The null hypothesis that at most 1 co integrating relationship is rejected at 5% level of significance since trace statistic and max Eigen statistic are greater than critical values. It means alternative hypothesis is accepted and conclude that degree of financial leverage and degree of operating leverage are co integrated in the GPI tobacco company of India.

ii) Unit root test of Degree of Operating Leverage (DOL) of Tobacco Companies:

The unit root test is applied to find the stationarity or non-stationarity data of tobacco companies in any degree of leverage and then also test the Augmented Dickey Fuller hypothesis of certain level of difference and then shown in correlogram of stationery data. The following table shows the unit root test in the Degree of Operating Leverage (DOL).

Table 5.45: Stationarity Test of JCF

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-7.273224	0.0010
Test critical values: 1% level	-4.803492	
Lag Length: 2 (Automatic based on SIC, MAXLAG=2)		

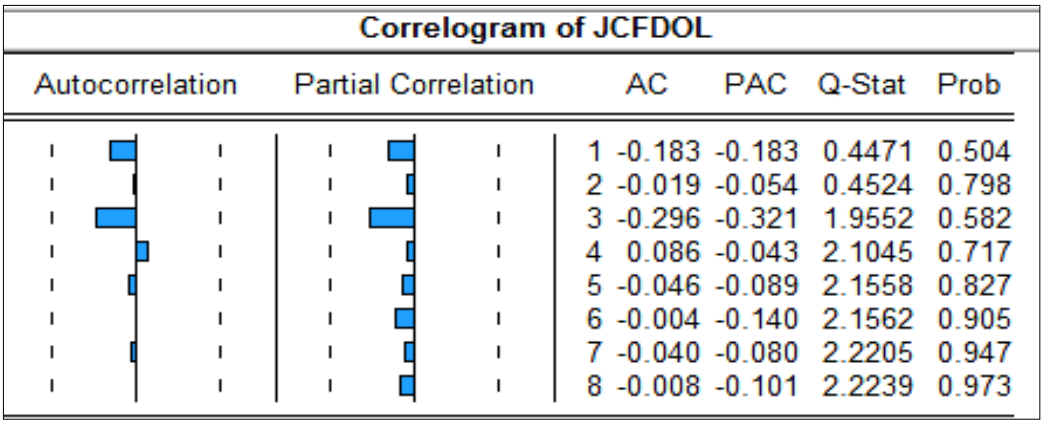
Source: *Appendix 15 & 17*

Null Hypothesis Ho: DOL JCF has a unit root (degree of operating leverage)

Alternative Hypothesis H1: DOL JCF has not a unit root (degree of operating leverage)

It is stationery at 1% level of significance because Augmented Dickey-Fuller statistics value is lesser than 1% level of significance. This indicates that the variables has not been affected by time variable and is concluded that the null hypothesis is accepted. It means this variable can be used in further econometric analysis. However, the nature of stationery of data has been shown in correlogram.

Fig. 5.8 Correlogram value of level difference of JCF



Source : *Computed table from 5.45*

The above figure shows that the Q stat value is insignificant at 5% level of probability which are 4471,. 4542, 1.9552, 2.1045, 2.1558, 2.1562, 2.2205, 2.2239 respectively.

Table 5.46 : Stationarity Test of Surya Nepal

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-7.512169	0.0008
Test critical values:	1% level	-4.803492	
	5% level	-3.403313	
	10% level	-2.841819	

Lag Length: 2 (Automatic based on SIC, MAX LAG=2)
Source: *Appendix 15 & 17*

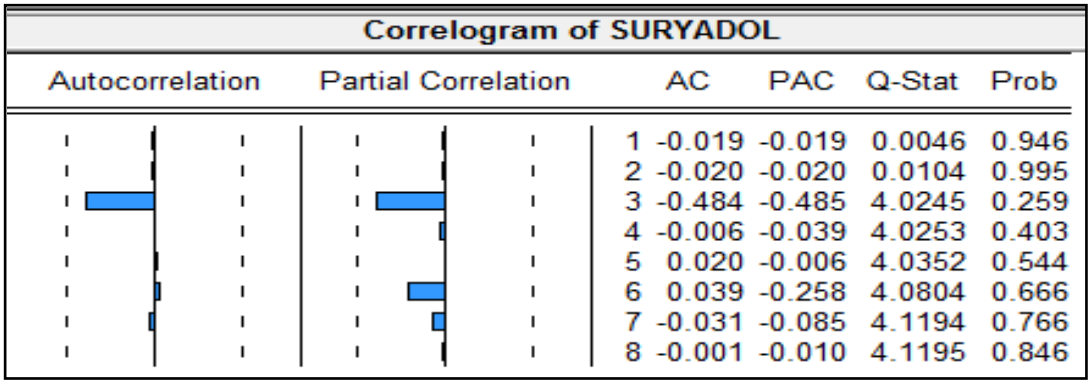
Null Hypothesis Ho: DOL SURYA NEPAL has a unit root

Alternative Hypothesis H1: DOL SURYA NEPAL has not a unit root

It is stationery at 1% level of significance because Augmented Dickey-Fuller statistics value is lesser than 1% level of significance. This indicates that the variables have not been affected by time variable and

conclude that the null hypothesis is accepted. It means this variable has been used in further econometric analysis. However, the nature of stationery of data has been shown in correlogram.

Fig. 5.9 : Correlogram value of DOL level difference of Surya Nepal



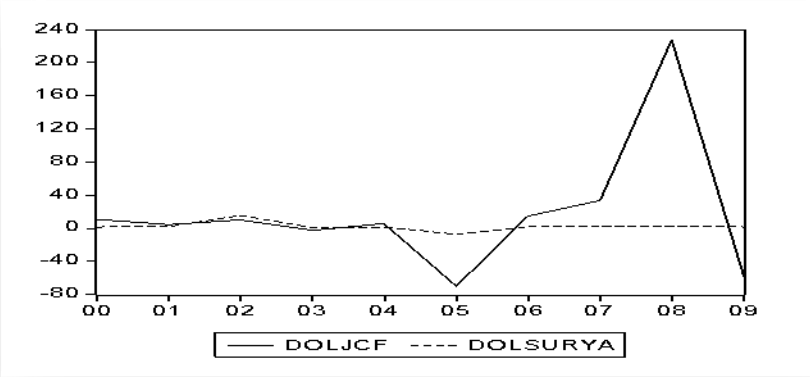
Correlogram of SURYADOL

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
		1	-0.019	-0.019	0.0046	0.946
		2	-0.020	-0.020	0.0104	0.995
		3	-0.484	-0.485	4.0245	0.259
		4	-0.006	-0.039	4.0253	0.403
		5	0.020	-0.006	4.0352	0.544
		6	0.039	-0.258	4.0804	0.666
		7	-0.031	-0.085	4.1194	0.766
		8	-0.001	-0.010	4.1195	0.846

Source: *computed table from 5.46*

At 5% level of probability which are 0.0046, 0.0104, 4.0245, 4.0253, 4.0352, 4.0804, 4.1194, 4.1195 respectively. The above figure shows that the Q stat value is insignificant.

Fig: 5.10 : Trend Analysis of DOL of JCF and Surya Nepal



Source: *Computed Table from 5.45 &5.46*

From the figure above (Fig 5.10), it is seen that the trend of DOL of JCF has been stagnant till 2004 and has declined in 2005 with tremendous

increment in 2008 and finally has decreased in 2009. Thus, the DOL of JCF is extremely volatile in comparison to SURYA which has remained consistent throughout the years.

Table 5.47: Stationarity Test of ITC

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		0.3852	-1.699218
Test critical values:	1% level	-5.119808	
	5% level	-3.519595	
	10% level	-2.898418	

Lag Length: 2 (Automatic based on SIC, MAXLAG=2)

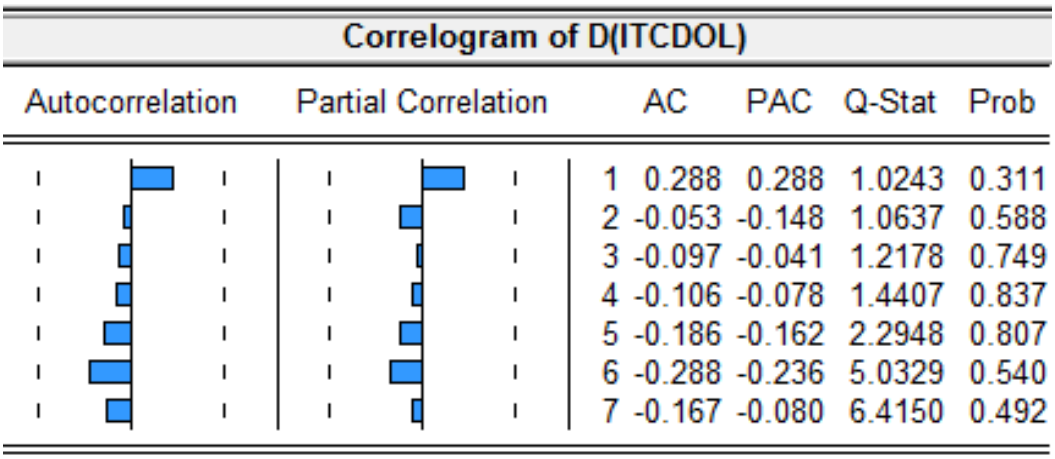
Source: *Appendix 15 & 17*

Null Hypothesis Ho: DOL of ITC has a unit root

Alternative Hypothesis H1: DOL of ITC has not a unit root

It is non-stationery at 1% level of significance because Augmented Dickey-Fuller statistics value is higher than 1% level of significance. This indicates that the variable has been affected by time variable and concludes that the null hypothesis is rejected and alternative hypothesis is accepted. It means this variable cannot be used in further econometric analysis. Moreover, the nature of non-stationery of data has been shown in correlogram.

Fig: 5.11 : Correlogram of non stationarity of ITC(DOL)



Source: *Computed from table 5.47*

The above table shows the continues increment in non-stationery. The above figure shows that the Q stat value is insignificant at 5% level of probability which is 1.0243, 1.0637, 1.2178, 1.4407, 2.2948, 5.0329, and 6.4150 respectively.

Table 5.48 : Stationarity Test of GPI (DOL)

		T-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.754889	0.1065
Test critical values:	1% level	-4.582648	
	5% level	-3.320969	
	10% level	-2.801384	

Lag Length: 0 (Automatic based on SIC, MAX LAG=2)
Source: *Appendix 15 & 17*

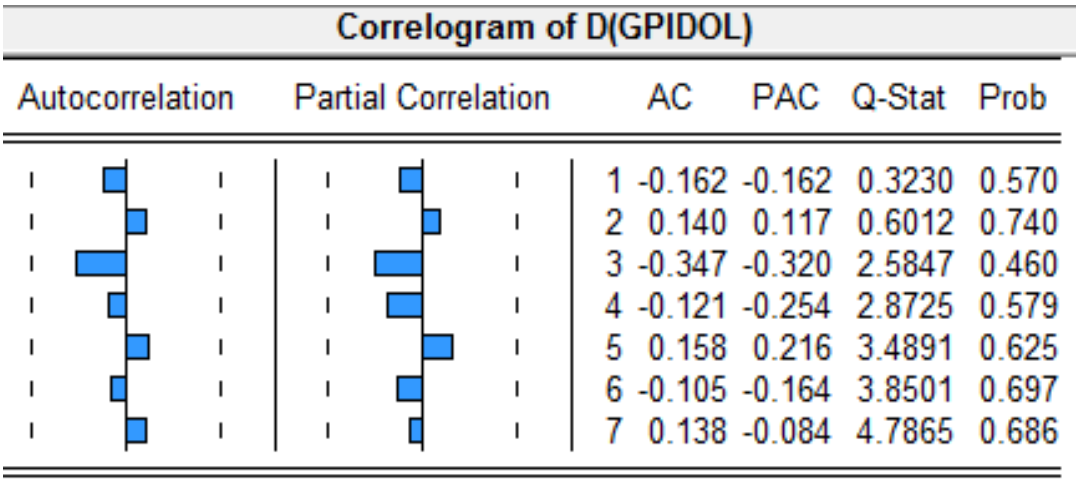
Null Hypothesis Ho: DOL of GPI has a unit root

Alternative Hypothesis H1: DOL of GPI has not a unit root

The table 5.48 shows the non stationery at 1% level of significance because Augmented Dickey-Fuller statistics value is higher than 1% level of significance. This indicates that the variables have been affected by time variable and conclude that null hypothesis is rejected. It means this variable

cannot be used in further econometric analysis. However, the nature of non stationery has been shown in correlogram

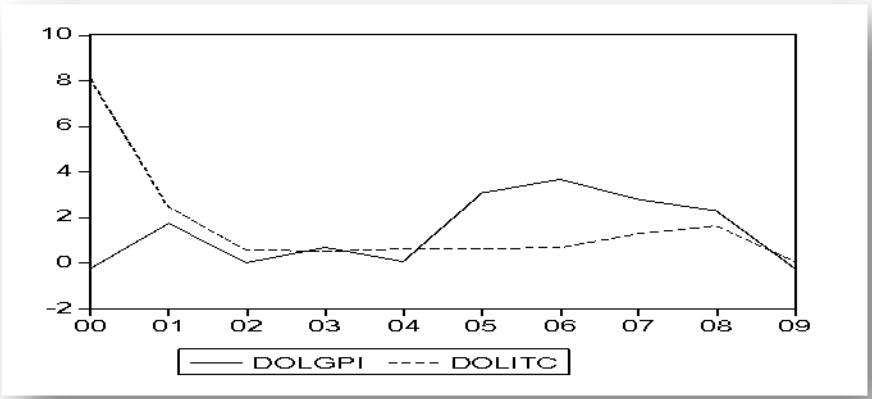
Fig 5.12 : Correlogram of Non Stationarity of GPI (DOL)



Source : *Computed table from 5.48*

The above figure shows that the Q stat value is insignificant at 5% level of probability which is .3230, 0.6012, 2.5847, 2.8725, 3.4891, 3.8501, and 4.7865 respectively.

Fig: 5.13 : Trend Analysis of GPI and ITC of DOL



Source *: Computed from Table 5.47 & 5.48*

Considering the DOL of GPI and ITC, ITC has declined gradually in preceding years and similar is the case with GPI. However, both companies DOL has almost arrived at same point in 2009.

5.1.1.7 Policy level Decision of Sales and Debt Component of Tobacco Company of Nepal and India.

The policy formulation is the key factor which influences the sales and debt management along with other sensitive business components of tobacco companies in Nepal and India. The implication of policy formulation on these sensitive elements can also be examined by the help of following numerical evidences under Chow breakpoint test**:**

a) Chow Breakpoint test:

Chow Breakpoint test is used for the company for structural decision of sales ,debt and any other component .Tobacco company used structural decision in different years for making policy decision**.**

Table 5.49 : Chow Breakpoint test of JCF under Sales and Debt

Year	Parameters	F-values	P values	Parameters	LI Ratio	P values
2002	F-statistic	0.605527	0.576046	Log likelihood ratio	1.838558	0.398807
2003	F-statistic	1.019417	0.415790	Log likelihood ratio	2.925247	0.231628
2004	F-statistic	3.145740	0.116316	Log likelihood ratio	7.171470	0.027716
2005	F-statistic	5.285143	0.047475	Log likelihood ratio	10.15852	0.006225
2006	F-statistic	4.326136	0.068666	Log likelihood ratio	8.928360	0.011514
2007	F-statistic	2.843768	0.135296	Log likelihood ratio	6.667635	0.035657
2008	F-statistic	6.791433	0.028762	Log likelihood ratio	11.82896	0.002700

Source: Computed from the *annual reports of the companies during FY 1999/2000-2008/2009.and Appendix 9*

The Chow breakpoint test has been presented on the basis of F-statistic & Log likelihood (LI) ratio. The structural break has been found at 2005 & 2008 at 5% level of significance but it is significant only at 10% level of significance in 2006. The log likelihood ratio presents slightly different results in case of such breaks. It has been found the structural break in 2004 (5%), 2005(1%), 2006 (5%), 2007(5%) and 2008(1%). The numerical evidence helps to conclude that the policy has been changing time and again i.e. frequently in JCF.

Table 5.50 : Chow Breakpoint test of Surya Nepal under Sales and Debt

Year	Parameters	values	P values	Parameters	LI Ratio	P values
2002	F-statistic	1.223158	0.358469	Log likelihood ratio	3.419710	0.180892
2003	F-statistic	2.407127	0.170791	Log likelihood ratio	5.891057	0.052574
2004	F-statistic	6.104281	0.0357	Log likelihood ratio	11.10133	0.00385
2005	F-statistic	13.15241	0.0064	Log likelihood ratio	16.83457	0.00021
2006	F-statistic	22.75732	0.0015	Log likelihood ratio	21.50106	0.000421
2007	F-statistic	17.86193	0.002974	Log likelihood ratio	19.39314	0.000061
2008	F-statistic	9.694351	0.01319	Log likelihood ratio	14.42545	0.0007

Source: Computed from the *annual reports of the companies during FY 1999/2000-2008/2009.and Appendix 10*

The Chow breakpoint test has been presented on the basis of F-statistic & Log likelihood ratio. The structural break has been found at 2004, 2005, 2006, 2007 & 2008 at 5% level of significance. It motives to conclude

that the policy has been changing frequently in SURYA NEPAL Tobacco Company of Nepal as well.

Table 5.51 : Chow Breakpoint test of ITC under Sales and Debt

Year	Parameters	values	P values	Parameters	LI Ratio	P values
2002	F-statistic	0.566437	0.595196	Log likelihood ratio	1.729548	0.421147
2003	F-statistic	1.957061	0.221662	Log likelihood ratio	5.022008	0.081187
2004	F-statistic	3.222922	0.112042	Log likelihood ratio	7.296273	0.026040
2005	F-statistic	3.753980	0.087636	Log likelihood ratio	8.115197	0.017290
2006	F-statistic	1.251195	0.351423	Log likelihood ratio	3.485880	0.175005
2007	F-statistic	0.426410	0.671190	Log likelihood ratio	1.329009	0.514528
2008	F-statistic	0.018545	0.981682	Log likelihood ratio	0.061628	0.969656

Source: Computed from the *annual reports of the companies during FY 1999/2000-2008/2009.and Appendix 11*

The Chow breakpoint test has been presented on the basis of F-statistic & Log likelihood ratio. The structural break has been found at 2005 at 10% level of significance. The log likelihood ratio presents slightly different results in case of such breaks. It has been found the structural break in 2004 (5%) and 2005(5%). It has been concluded from the results that the policy has been changing these years in ITC.

Table 5.52 : Chow Breakpoint test of GPI under Sales and Debt

Year	Parameters	F-values	P values	Parameters	LI Ratio	P values
2002	F-statistic	0.236348	0.796523	Log likelihood ratio	0.758333	0.684432
2003	F-statistic	0.325984	0.733843	Log likelihood ratio	1.031534	0.597043
2004	F-statistic	0.071235	0.932019	Log likelihood ratio	0.234674	0.889285
2005	F-statistic	2.788388	0.139217	Log likelihood ratio	6.572417	0.037395

2006	F-statistic	0.907638	0.452502	Log likelihood ratio	2.643209	0.266707
2007	F-statistic	0.084733	0.919837	Log likelihood ratio	0.278530	0.869998
2008	F-statistic	1.269004	0.347044	Log likelihood ratio	3.527683	0.171385

Source: Computed from the *annual reports of the companies during FY 1999/2000-2008/2009 and Appendix 12*

The Chow breakpoint test has been presented on the basis of F-statistic & Log likelihood ratio. The structural break has been found at 2005 at 15% level of significance. The log likelihood ratio also presents the structural break in 2005 at 5 % level of significance. There has been a structural break in 2005(5%). The perception, therefore, concluded from the results is that the policy has slightly been changed but remains stable in nature for 2005 in GPI.

b) Pair Wise Granger Causality Tests of Tobacco Company of Nepal and India.

The **Granger causality test** is a statistical hypothesis test for determining whether one time series is useful in forecasting another.[1] Ordinarily, regressions reflect "mere" correlations, but Clive Granger, who won a Nobel Prize in Economics, argued that there is an interpretation of a set of tests as revealing something about causality. A time series *X* is said to Granger-cause *Y* if it can be shown, usually through a series of t-tests and F-tests on lagged values of *X* (and with lagged values of *Y* also included), that those *X* values provide statistically significant information about future values of *Y*.

The test for Granger causality works by first doing a regression of Δ*Y* on lagged values of Δ*Y*. (Here Δ*Y* is the first difference of the variable *Y* — that is, *Y* minus its one-period-prior value. The regressions are performed in terms of Δ*Y* rather than *Y* if *Y* is not stationary but Δ*Y* is.) Once the set of significant lagged values for Δ*Y* is found (via t-statistics or p-values), the regression is augmented with lagged levels of Δ*X*. Any particular lagged value of Δ*X* is retained in the regression if (1) it is significant according to a t-test, and (2) and the other lagged values of Δ*X* jointly add explanatory power to the model according to an F-test. Then the null hypothesis of no Granger causality is accepted if and only if no lagged values of Δ*X* have been retained in the regression.

The researcher is often looking for a clear story, such as *X* Granger-causes *Y* but not the other way around. In practice, however, it may be found that neither variable Granger-causes the other, or that each of the two variables Granger-causes the other. In the establishment period of sales depends on debt. In the existing situation debt depends upon sales. For this purpose, Granger causality is used to find casual relationship between sales and debt of tobacco industries of Nepal and India.

Table 5.53 : Pair Wise Granger Causality Test of JCF

Null hypothesis	Observation	F-statistics	Probability
JCF Log Sales does not Granger cause of JCF Log Debt	8	0.18456	0.84025
JCF Log Debt does not Granger cause of JCF Log Sales	8	0.43878	0.68052

*Lag: 2

Source: *Appendix 3, 7, 9*

The F statistics shows that there is no causal relationship between debt and sales of JCF because the F statistics is insignificant therefore the null hypothesis is accepted.

Table 5.54 : Pair Wise Granger Causality Tests of Surya Nepal

Null hypothesis	Observation	F-statistics	Probability
SURYA Log Sales does not Granger cause of SURYA NEPAL Log Debt	8	0.21268	0.81964
SURYA NEPAL Log Debt does not Granger cause of SURYA NEPAL Log Sales	8	0.36372	0.72205

*LAG: 2

Source: *Appendix 4, 8, 10*

The F statistics shows that there is no causal relationship between debt and sales of Surya Nepal because the F statistics is insignificant therefore the null hypothesis is accepted.

Table 5.55 : Pair Wise Granger Causality Tests of ITC

Null hypothesis	observation	F-statistics	Probability
ITC Log Sales does not Granger cause of ITC Log Debt	8	1.74623	0.31410
ITC Log Debt does not Granger cause of ITC Log Sales	8	3.24841	0.17755

**Lag: 2*

Source : Appendix 1, 5 & 11

The F statistics shows that there is no causal relationship between debt and sales of ITC because the F statistics is insignificant therefore the null hypothesis is accepted.

Table 5.56 : Pair Wise Granger Causality Tests of GPI

Null hypothesis	Observation	F-statistics	Probability
GPI Log Sales does not Granger cause of GPI Log Debt	8	1.20513	0.41291
GPI Log Debt does not Granger cause of GPI Log Sales	8	8.00863	0.06266

*Lag: 2
Source : *Appendix 2, 6, & 12*

The F statistics shows that there is no causal relationship between debt and sales of GPI because the F statistics is insignificant therefore the null hypothesis is accepted. But there is causal relationship between debts and log sale at 10% level of probability in GPI.

Table 5.57 : Rank Correlation of Return Variable of Tobacco Company of Nepal and India

			ITC ROE	GPI ROE	JCF ROE	SURYA ROE
Spearman's rho	**ITC ROE**	Correlation Coefficient	1.000	.891**	1.000	.261
		Sig. (2-tailed)	.	.001	.	.467
		N	10	10	10	10
	GPI ROE	Correlation Coefficient	.891**	1.000	.261	1.000
		Sig. (2-tailed)	.001	.	.467	.
		N	10	10	10	10

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

Source: *Appendix 9-12*

The numerical calculation of Charles Spearman's rank correlation coefficient shows that there exists positive correlation between the return on equity between two Indian tobacco companies ITC and GPI. The numerical calculation helps to conclude that if the magnitude of equity increases by 89.1 percent, the volume of return increases by 100 percent and vice versa.

The numerical calculation of Charles Spearman's rank correlation coefficient shows that there exists positive correlation between the return on equity between two Nepalese tobacco companies JCF and Surya Nepal. The numerical calculation helps to conclude that if the magnitude of equity increases by 26.1 percent, the volume of return increases by 100 percent and vice versa. Such statistical evidence clearly reveals that the investment of shareholder's equity is more productive in Nepalese investment market. As it is seen from the Appendix 9-12, there exists negative ROE and ROA for JCF. Similarly, the returns on Surya Nepal in terms of equity and assets have increased gradually. Since, the rank correlation defines the cumulative analysis of return from Equity & Assets for JCF & Surya Nepal, it can thus be interpreted that the Positive correlation is because of the increasing return of Surya Nepal that outweighs the decreasing return of JCF.

Table 5.58 : Rank Correlations of ITC, GPI, JCF & Surya Nepal in ROA Variables of Nepal and India

			ITC ROA	GPI ROA	JCF ROA	SURYA ROA
arm an's	ITC ROA	Correlation Coefficient	1.000	.588	1.000	-.830**

		Sig. (2-tailed)	.	.074	.	.003
		N	10	10	10	10
	GPI ROA	Correlation Coefficient	.588	1.000	-.830**	1.000
		Sig. (2-tailed)	.074	.	.003	.
		N	10	10	10	10

Source: *Appendix 9-12*

The numerical calculation of Charles Spearman's rank correlation coefficient shows that there exists positive correlation between the return on assets between two Indian tobacco companies ITC and GPI. The numerical calculation helps to conclude that if the magnitude of total assets increases by 58.8 percent, the volume of return increases by 100 percent and vice versa.

The numerical calculation of Charles Spearman's rank correlation coefficient shows that there exists negative correlation between the return on assets between two Nepalese tobacco companies JCF and SURYA Nepal. The numerical calculation helps to conclude that if the magnitude of total assets increases by 83 percent, the volume of return decreases by 100 percent and vice versa. As it is seen from the Appendix 9-12, there exists negative ROE and ROA for JCF. Similarly, the returns on Surya Nepal in terms of equity and assets have increased gradually. Since, the rank correlation defines the cumulative analysis of return from Equity & Assets for JCF & Surya Nepal, it can thus be interpreted that the negative correlation is because of the decreasing return of JCF that outweighs the increasing return of Surya Nepal.

Table 5.59: Rank correlation of JCF & Surya Nepal in ROA variables

			JCF ROA	SURYA ROA
Spearman's rho	JCF ROA	Correlation Coefficient	1.000	-.830**
		Sig. (2-tailed)	.	.003
		N	10	10
	SURYA ROA	Correlation Coefficient	-.830**	1.000
		Sig. (2-tailed)	.003	.
		N	10	10

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

Source: *Appendix 9-10*

The numerical calculation of Charles Spearman's rank correlation coefficient shows that there exists negative correlation between the return on assets between two Nepalese tobacco companies JCF and Surya Nepal. The numerical calculation helps to conclude that if the magnitude of total assets increases by 83 percent, the volume of return decreases by 100 percent and vice versa. As it is seen from the Appendix 9-10, there exists negative ROE and ROA for JCF. Similarly, the returns on Surya Nepal in terms of equity and assets have increased gradually. Since, the rank correlation defines the cumulative analysis of return from Equity & Assets for JCF & Surya Nepal, it can thus be interpreted that the negative correlation is because of the decreasing return of JCF that outweighs the increasing return of Surya Nepal.

5.1.1.8 Determinants of Capital Structure

Capital structure of any firm is affected by internal and external factors. The macro economic variables of a country like tax policy, inflation rate, capital market condition and stock market are major determinants of external factors. Labour dispute, top management decision, debt equity

composition and loan borrowed facilities by bank, growth of firm, management attitude and assets structure and operating leverage are the internal determinants factor of capital structure.

There are numerous factors that determine the firm's capital structure. However, some prominent factors that consequents firms capital structure are considered. The following table shows the determinants of capital structure of different tobacco company of Nepal and India. Furthermore, the factor analysis tool is used to group the relevant factor.

Computation & Interpretation

a) Factor Analysis of JCF

The following table 5.60 shows the initial and the extraction communalities of different variables. As we know that the proportion of variance accounted for by the common factors. The extraction communality is the value which is sum of the square of the loading assigned to the different components for each variable shown in appendix 9 (Factor analysis value) under the Extraction method of Principle component Analysis.

Table 5.60 : Initial Eigen Value, Extraction sum of square loading and Rotation sum of square loading of JCF.

Total Variance Explained									
Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	20.811	67.131	67.131	20.811	67.131	67.131	14.949	48.222	48.222

2	3.885	12.533	79.664	3.885	12.533	79.664	6.487	20.926	69.148
3	2.026	6.534	86.198	2.026	6.534	86.198	3.425	11.048	80.196
4	1.701	5.486	91.685	1.701	5.486	91.685	2.934	9.466	89.662
5	1.344	4.336	96.021	1.344	4.336	96.021	1.971	6.359	96.021
6	.827	2.668	98.688						
7	.195	.630	99.318						

Source: A*ppendix 9*

Extraction Method: Principal Component Analysis.

In above table 5.60 the factors which contribute less than 1 unit of variance are consider insignificant factors and these factors will be omitted in the analysis . As, per the above table, factor 6 and 7 bears insignificant contribution than 1 under the result of initial Eigen values. The total variance explained by each factor is listed in the column label as total initial Eigen values. The next column contains the percentage of the total variance attributable to each factor. The last column, the cumulative percentage indicates the percentage of variance attributable to that factor and those that precede it in the table. This table shows first 5 factors which effects the capital structure decision of the company.

The rotated component matrix is used to group the variables in terms of highest correlation and then nomenclature of the group as per their relevancy.

Table 5.61 : Rotated component matrix of JCF:

	Components				
	1	2	3	4	5
LTDR	-.535	.655	.489	.080	.186
TDR	-.704	.624	.037	.108	.293

CETR	.086	-.508	-.849	-.060	-.003
ICR	.893	-.356	-.063	-.232	.100
FOCR	.889	-.371	-.065	-.229	.083
LTDRONTA	-.318	.726	.571	.187	.040
DER	-.701	.623	.252	.066	.226
DFL	-.271	.090	.046	.908	.151
DOL	.765	-.084	-.123	-.076	-.337
DCL	-.187	.173	-.043	.904	.185
PROPRIRATIO	-.701	.623	.252	.066	.226
LIQRATIO	.800	-.191	.192	.181	-.482
NTDS	.918	-.275	-.187	-.091	-.073
EBIDT	.846	-.360	-.313	-.210	.070
ROCEONCE	.935	-.141	.194	-.154	.204
ROCESEQ	.925	-.301	-.127	-.180	.047
ROCEE	.917	-.314	-.128	-.173	.103
ROA	.891	-.301	-.217	-.235	.085
COSTGSOLD	.222	.118	.229	.193	.890
DTR	.329	-.863	-.131	-.230	.068
ITR	-.214	.243	.202	.685	-.193
ACP	-.391	.851	.261	.197	.043
CTR	-.772	.555	-.142	.231	.096
EAT	.917	-.314	-.128	-.173	.103
LOGSALES	.731	-.505	-.158	-.077	.413
PROFIT	.891	-.301	-.217	-.235	.085
TANG	.499	.012	-.836	.023	-.027
SANS	-.922	.073	.178	.153	-.283
EBITVARIATION	.192	.435	.740	.183	.372
OPRATINGRATIO	-.850	.360	.315	.212	-.005

CAPITALGEAR	.502	-.797	-.184	-.207	-.053

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization

Source*: Computed from Table 5.60*

Here, five groups have been formed. The first group is positively correlated with ICR, FOCR, DOL, LIQ, NTDS, ROCEONCE, ROCE, ROA, EAT, LOG SALES, PROFIT and negative correlated with TDR, DER, PROPRIETARYRATIO, CTR, SANS and OPERATING RATIO. Considering the common amongst all these variables, the group can be defined as EARNING-EQUITY FACTOR.

Similarly, the second group is positively correlated with LTDR, LTDR on total assets, ACP and negatively correlated with DTR and Capital Gearing. However, the Group has been defined as SOLVENCY.

Similarly, the Third group is positively correlated with EBIT variation and negatively correlated with CETR and TANG. However, the Group has been defined as profitability.

Similarly, the Fourth group is positively correlated with DFL, DCL and ITR. However, the Group has been defined as LEVERAGE.

Similarly, the fifth group is positively correlated with COGS. However, the Group has been defined as Cost of Goods Sold.

Thus, it is concluded that the capital structure of JCF has been determined by Equity Earning, solvency, profitability, Leverage and Cost of goods sold factors.

b) Factor Analysis of Surya Nepal

The following table 5.62 shows the initial and the extraction communalities of different variables of Surya Nepal Pvt.Ltd. The extraction communality is the value which is sum of the square of the loading assigned to the different components for each variable shown in appendix (Factor analysis value) under the Extraction method of Principle component Analysis.

Table 5.62 : Total Variance Explained of Surya Nepal

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	22.418	72.317	72.317	22.418	72.317	72.317	19.604	63.240	63.240
2	8.582	27.683	100.000	8.582	27.683	100.000	11.396	36.760	100.000
3	7.260E-16	2.342E-15	100.000						
4	6.637E-16	2.141E-15	100.000						
5	5.471E-16	1.765E-15	100.000						
6	4.788E-16	1.545E-15	100.000						
7	3.763E-16	1.214E-15	100.000						

Extraction Method: Principal Component Analysis
Source: *appendix 10*

In above table 5.62 the factors which contribute less than 1 unit of variance are consider insignificant factors and these factors will be omitted in the analysis .The above table shows factor 1 and 2 as significant as its

contribution is more than 1 under the result of initial Eigen values. However remaining factors are insignificant.

Table 5.63 : Rotated Component Matrix of Surya Nepal

	Component	
VARIABLES	1	2
LTDR	-.994	-.107
TDR	-.993	.121
CETR	.991	-.135
ICR	.934	.356
FOCR	.935	.354
LTDRONTA	-.994	-.107
DER	-.988	.154
DFL	.970	.243
DOL	-.709	-.705
DCL	.973	.233
PROPRIRATIO	-.988	.154
VARIABLES	**1**	**2**
LIQRATIO	-.302	.953
NTDS	.807	.590
EBIDT	.820	.573
ROCEONCE	.915	.404
ROCESEQ	.591	.806
ROCEE	.732	.681
ROA	.957	.289
COSTGSOLD	.080	.997
DTR	-.095	.995
ITR	.802	-.597
DTR	-.095	.995
ITR	.802	-.597

Source: *Computed from Table 5.62*

The rotated component matrix is used to group the variables in terms of highest correlation and then nomenclature of the group as per their relevancy.

Here, two groups have been formed. The first group is positively correlated with CETR, ICR, FOCR, DFL & DCL and negatively correlated with LTDR, TDR, LTDR ON TOTAL ASSET; DER & DOL considering the common amongst all these variables, the group can be defined as Leverage.

Similarly, the second group is positively correlated with Liquidity Ratio, ROCEONCE, ROCESEQ, COGS, DTR, and LOGSALES & EBIT VARIATION and negatively correlated with ACP. However, the Group has been defined as PROFITABILITY.

Thus, it is concluded that the capital structure of Surya Nepal has been determined by profitability and Leverage factors.

C) Factor Analysis of ITC

The following table 5.64 shows the initial and the extraction communalities of different variables of ITC, India. The extraction communality is the value which is sum of the square of the loading assigned to the different components for each variable shown in appendix (Factor analysis value) under the Extraction method of Principle component Analysis.

Table 5.64 : Total Variance Explained of ITC, India

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	16.233	52.365	52.365	16.233	52.365	52.365	9.192	29.652	29.652
2	5.651	18.230	70.596	5.651	18.230	70.596	6.370	20.547	50.199
3	3.729	12.029	82.625	3.729	12.029	82.625	5.305	17.112	67.311
4	2.048	6.606	89.231	2.048	6.606	89.231	5.244	16.916	84.227
5	1.444	4.659	93.890	1.444	4.659	93.890	2.306	7.439	91.666
6	1.084	3.497	97.387	1.084	3.497	97.387	1.773	5.720	97.387
7	.438	1.412	98.799						
8	.266	.857	99.655						
9	.107	.345	100.000						
10	6.602	2.130	100.000						
11	5.518	1.780	100.000						

Source: *Appendix 11*

In above table 5.64 the factors which contribute less than 1 unit of variance are consider insignificant factors and these factors will be omitted in the analysis .The above table shows factor 1 to 6 contributes more than 1 under the result of initial Eigen values. However, other factors are insignificant.

Table 5.65 : Rotated Component Matrix of ITC

	Component					
VARIABLES	**1**	**2**	**3**	**4**	**5**	**6**
LTDR	-.431	.580	.592	-.070	-.336	-.075
TDR	-.737	.466	.282	-.264	-.106	-.116
CETR	.348	.160	.237	.250	.824	.221
ICR	.880	-.005	.158	-.137	.368	.046
FOCR	.881	-.006	.157	-.135	.368	.047
LTDRONTA	-.431	.580	.592	-.070	-.336	-.075

DER	-.715	.518	.303	-.220	-.116	-.103
DFL	-.250	.924	.249	-.070	.064	.107
DOL	-.766	.510	.206	.087	-.087	.156
DCL	-.262	.924	.240	-.061	.066	.106
PROPRIRATIO	-.713	.534	.313	-.183	-.130	-.089
LIQRATIO	.238	.212	.864	.375	-.047	-.015
NTDS	.709	-.325	-.213	.533	.094	.229
EBIDT	.821	-.255	-.111	.434	.130	.207
ROCEONCE	.271	-.450	.058	-.321	.764	.040
ROCESEQ	-.353	.419	.747	-.296	.131	-.059
ROCEE	.721	-.404	-.372	.312	-.026	.244
ROA	-.087	.205	.948	-.053	.149	.121
COSTGSOLD	.190	-.162	-.041	.961	-.022	.084
DTR	-.038	-.107	.065	.969	-.072	.019
ITR	-.786	-.103	-.244	-.378	.342	-.068
ACP	-.040	-.085	-.392	-.399	-.187	-.794
CTR	-.690	.449	.403	-.201	.340	-.021
EAT	.838	-.257	-.133	.395	.146	.188
LOGSALES	.584	-.270	-.205	.728	.054	.105
PROFIT	-.087	.205	.948	-.053	.149	.121
TANG	.064	-.869	-.117	.225	.128	.372
SANS	-.565	.147	.064	.003	-.062	-.773
EBITVARIATION	-.170	.887	.317	-.227	-.074	-.008
OPRATINGRATIO	.205	-.075	.008	.965	.020	.114
CAPITALGEAR	.575	-.355	-.455	.370	.272	-.037

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
Source*: Computed From Table 5.64*

The rotated component matrix of ITC is used to group the variables in terms of highest correlation and then nomenclature the group as per their relevancy. Here, Six groups have been formed. The first group is positively correlated with ICR, FOCR, PROPRIETORY RATIO, DOL, NTDS, EBIT, ROCEQ and CAPITAL GEAR and negatively correlated with TDR, DER, ITR AND CTR. Considering the common amongst all these variables, the group can be defined as EQUITY EARNING FACTOR.

Similarly, the second group is positively correlated with LTDR ON TOTAL ASSETS, DFL, and DCL AND EBIT VARIATION and negatively correlated with TANG. However, the Group has been defined as LEVERAGE.

Similarly, the third group is positively correlated with ROSE, ROA AND PROFIT. However, the Group has been defined as PROFITABILITY.

Similarly, the fourth group is positively correlated with COGS, DTR, and LOGSALES AND OPERATING RATIO. However, the Group has been defined as OPERATING EXPENSES.

Similarly, the fifth group is positively correlated with CETR AND ROCESEQ. However, the Group has been defined as CAPITAL EMPLOYED.

Similarly, the sixth Group is negatively correlated with ACP AND SANS. However, the Group has been defined as SALES.

Thus, it is concluded that the capital structure of ITC India has been determined by Equity earning, leverage, profitability, operating expenses, capital employed and sales factors.

d) Factor Analysis of GPI

The following table 5.66 shows the initial and the extraction communalities of different variables of GPI ,India. The extraction communality is the value which is sum of the square of the loading assigned to the different components for each variable shown in appendix (Factor analysis value) under the Extraction method of Principle component Analysis.

Table 5.66 : Total Variance Explained of GPI India

Comp-onent	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	10.293	33.204	33.204	10.293	33.204	33.204	8.084	26.078	26.078
2	6.038	19.478	52.682	6.038	19.478	52.682	4.973	16.042	42.119
3	5.280	17.032	69.713	5.280	17.032	69.713	4.848	15.640	57.759
4	2.920	9.418	79.132	2.920	9.418	79.132	4.054	13.076	70.836
5	2.398	7.736	86.867	2.398	7.736	86.867	2.977	9.604	80.439
6	1.715	5.533	92.400	1.715	5.533	92.400	2.565	8.273	88.712
7	1.119	3.610	96.010	1.119	3.610	96.010	2.262	7.298	96.010
8	.745	2.402	98.412						
9	.492	1.588	100.000						
10	5.637E-16	1.819E-15	100.000						
11	5.220E-16	1.684E-15	100.000						
12	4.452E-16	1.436E-15	100.000						
13	3.681E-16	1.188E-15	100.000						

Source: *Appendix 12*

In above table 5.66-The factors which contribute less than 1 unit of variance are consider insignificant factors and these factors will be omitted in the analysis .The above table exhibits factor 1-7 have significant contribution as it is more than 1 under the result of initial Eigen values. On contrary other factors have insignificant contribution in the result.

Table 5.67 : Rotated Component Matrix of GPI

	Component						
VARIABLES	**1**	**2**	**3**	**4**	**5**	**6**	**7**
LTDR	.753	.604	-.052	.037	-.106	.130	-.089
TDR	.179	.792	.208	.306	.201	.363	.117
CETR	-.886	-.292	.162	.157	-.080	-.042	.115
ICR	.030	.096	.212	.075	.967	-.004	.000
FOCR	.058	.129	.193	.082	.964	-.016	-.013
LTDRONTA	.753	.604	-.052	.037	-.106	.130	-.089
DER	-.286	.573	.294	.389	.300	.442	.248
DFL	.335	.881	.050	-.220	.063	-.098	.096
DOL	.430	.373	-.493	.013	-.603	-.145	.041
DCL	.326	.889	.025	-.223	.038	-.100	.102
PROPRIRATIO	.439	.255	-.061	.293	-.260	.641	.239
LIQRATIO	.051	-.054	.013	.871	.329	.113	-.318
NTDS	.845	.258	.021	.354	-.142	.075	-.197
EBIDT	.857	.077	.273	.264	-.062	.212	-.242
ROCEONCE	-.006	.012	.844	.144	.088	.386	.061
ROCESEQ	-.006	.012	.844	.144	.088	.386	.061
ROCEE	-.287	.410	-.074	-.289	-.059	-.759	.187
ROA	-.087	-.024	.945	-.015	.196	-.175	-.031
COSTGSOLD	.411	-.258	-.159	.789	-.218	.203	-.036
DTR	-.198	.060	.067	-.180	-.042	-.004	.899

ITR	-.330	.073	-.029	-.628	-.127	-.591	.282
ACP	.587	-.170	-.075	.147	-.033	.082	-.741
CTR	-.919	-.230	.209	.160	-.162	.005	-.043
EAT	.801	.056	.344	.241	-.035	.312	-.236
LOGSALES	.814	.085	.065	.429	-.250	.142	-.243
PROFIT	-.087	-.024	.945	-.015	.196	-.175	-.031
TANG	.249	.876	-.182	.134	.003	-.260	-.093
SANS	.134	-.249	-.300	-.884	-.028	-.161	.022
EBITVARIATION	.460	.246	.673	-.240	.068	-.352	.186
OPRATINGRATIO	.429	-.288	-.396	.554	.085	.047	.454
CAPITALGEAR	-.786	-.143	.358	.064	-.348	.133	-.179

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
Source: *Computed from Table 5.66*

The rotated component matrix OF GPI is used to group the variables in terms of highest correlation and then nomenclature of the group as per their relevancy. Here, seven groups have been formed. The first group is positively correlated with LTDR, LTDR ON TOTAL ASSETS, NTDS, EBIDT, ACP, EAT. LOG SALES AND CAPITAL GEAR and negatively correlated with CETR AND CTR. Considering the common amongst all these variables, the group can be defined as EQUITY EARNING FACTOR

Similarly, the second group is positively correlated with TDR, DER, DFL, and DCL AND TANG. However, the Group has been defined as LEVERAGE.

Similarly, the third group is positively correlated with ROCEONCE, ROCESEQ, ROA, and PROFIT AND EBIT VARIATION. However, the Group has been defined as PROFITABILITY.

Similarly, the fourth group is positively correlated with LIQ RATIO, COGS AND OPERATING RATIO and negatively correlated with ITR and SANS. However, the Group has been defined as OPERATING EXPENSES.

Similarly, the fifth group is positively correlated with ICR, FOCR AND DOL. However, the Group has been defined as RISK FACTOR.

Similarly, the sixth Group is positively correlated with PROPRIETORY RATIO and negatively correlated with ROCE. However, the Group has been defined as SIZE.

Similarly, the seventh Group is positively correlated with DTR. However, the Group has been defined as Debtors Turnover.

Thus, it is concluded that the capital structure of GPI has been determined by Equity earning, leverage, profitability, operating expenses, Risk, Size and Debtors Turnover.

5.1.2. Behavioural Analysis of Capital Structure

Behavior analysis was originally described by B.F. Skinner in the 1930's. Applied behavior analysis (ABA) is a science that involves using modern behavioral learning theory to modify overt behaviors. Behavior analysts reject the use of hypothetical constructs and focus on the observable relationship of behavior to the environment. By functionally assessing the relationship between a targeted behavior and the environment, the methods of ABA can be used to change that behavior. Behavior analysis ranging from behavioral intervention methods to basic

research which investigates the rules by which humans adopt and maintain behavior is applied in this research.

Capital structure decision is top level management decision. According to behavioural analysis, the opinion pool from the executives of the company provides guidelines to formulate and execute the behavioural policy to push up the organisation at a scientific scale of management. In fact, on the basis of global observation, the behavioural psychology helps to design the capital structure management in tobacco industries of Nepal and India as well.

5.1.2.1 Debt Condition of Behavioural Analysis

Debt condition is the major and crucial role for any decision making for new financing. The following tables shown in debt condition of tobacco companies.

Table 5.68 : Debt Condition of Behavioural Analysis of Tobacco Industries in Nepal and India

Parameters and percentage	Yes	No	Unsure	X^2	Df	$X^2_{.01}$
Target debt ratio	0.62	0.31	0.07			
spare debt capacity	0.31	0.64	0.04			
Loan at same interest rate	0.47	0.47	0.07	18.20	8	20.09
Loan at industry norms	0.33	0.53	0.13			Accepted
Off balance sheet items	0.31	0.64	0.04			
Total (column Total)	**0.41**	**0.52**	**0.07**			

Source: calculated from Appendix 16. Table value 1 % 20.09 accepts HO

Table 5.68 highlights the percentage of the responses of query related to debt condition of tobacco companies. The series of question deals with the measurement of debt condition of any firms. According to the answer of respondent 62 % choose target debt ratio,31% spare debt capacity, 47% loan at same interest rate, 33% use industry norms and 31 % use off balance sheet items. The overall results shows that 41% company use debt condition according to industry norms, 52% avoid industry norms of debt condition and rest 7% use neither norms nor debt condition.

In order to formulate the concrete perception of the qualitative variables, x^2 test is applied in formulating following hypothesis*:*

HO: Debt conditions are not similar.

H1: Debt conditions are similar.

The x^2 value of debt condition is higher than its tabulated value at 1% level of significance. Therefore the numerical results show that HO1 is accepted and helps to conclude that, there is significant difference between the debt capacity conditions of industry norms of any company. It implies that debt condition is not similar between tobacco companies.

Table 5.69 : Financing Decision Technique of Behavioural Analysis of Tobacco Companies

Parameters/ percentage	Yes	No	X^2	Df	$X^2_{.01}$
Lease equipment	0.76	0.24			
Functional relationship	0.78	0.22			
Proper amount of debt in its capitalization	0.71	0.29	24.23	7	18.47
Standard debt ratio	0.42	0.58		Ho is	rejected
Increase in the yield cost	0.80	0.20			
Market price of common stock	0.80	0.20			
Beta coefficient effects financial structure policy	0.61	0.39			
Total (column Total)	0.70	0.30			

Source: calculated from Appendix 16. 1% level of significance is 18.475

The numerical evidence of primary questionnaire of tobacco firm (Table 5.69) shows the percentage responses of query related to financing decision techniques of tobacco firm. According to the answer of respondent 76 % choose lease,78% functional relationship,71% use proper amount of debt in capitalisation,42% use standard debt ratio,80 % use yield cost and market price of stock and 61%response affects systematic risk on financial structure policy. The overall results show that 70% company use financing decision techniques to meet their plan and, 30% avoid financing decision techniques.

The following hypothesis of x^2 test of association of attributes is formulated

HO: Financing decision techniques are dependent

H1: Financing decision techniques are independent .

The numerical value of x^2 test as association of attributes value is higher than its tabulated value at 1% level of significance and, therefore , the null hypothesis is rejected and it is concluded that , the financing decision techniques are independent.

Table 5.70: Debt Equity Composition of Behavioral Analysis of Tobacco Industries

Parameters/ percentage	Major Exp	Acquisition	Good	Reduce leverage	X^2	df	$X^2_{.01}$
Make an equity issue	0.62	0.09	0.07	0.22	.931	3	11.34
make an debt issue	0.67	0.04	0.09	0.20			accept Ho
total (column Total)	0.64	0.07	0.08	0.21			

Source: Calculated from AppendiX16. 1% level of significance is 11.34

Table 5.70 explains that 62% respondents issue equity for major expansion for the company and 67% use debt for expansion. Moreover, 22% and 20% issue equity and debt respectively for reducing the leverage and the rest use acquisition and other condition. In overall condition, the numerical figure shows, 64% issue debt and equity for major expansion, 21 % for reducing the leverage and the rest for acquisition and other.

To take the concrete decision the following x^2 test of hypothesis is applied

HO:1 there is insignificant association between equity and debt issue

H:1 there is significant association between equity and debt issue

The numerical value of x^2 test as association of attributes value is lower than its tabulated value at 1% level of significance and, therefore, the null hypothesis is accepted. It helps to infer that there is insignificant association between debt and equity issue of firms.

5.1.2.2. Sensitivity Factors Affecting Financing Decision

The numerical evidence of *table* 5.71 examines different internal and external factors affecting financing decision from the respondent views. The questionnaires include the questions to the respondent concerning the variables that might have likely influenced on the debt, equity and long term versus short term debt financing. Results of the questionnaires regarding factor affecting financing decision are shown in table 5.71.The result of the questionnaires for each factor on a scale of unimportant and important ranges between 1 and 5.

Table 5.71 : Affecting Factor of Financing Decision of Behavioral Analysis

S.No.		unimportant	most unimportant	undecided	most important	important	Row Total	X^2	d.f	$X^2_{.01}$
1	Publicity Traded Securities	3	9.00	3.00	21.00	9.00	45.00			
2	Financial Flexibility	9	2.00	23.00	1.00	10.00	45.00			
3	Long term Survibility of Firm	13.00	8.00	6.00	14.00	4.00	45.00	3265.44	96	131.14
4	Financial Independence	2	10.00	3.00	20.00	10.00	45.00			
5	Comparability with Firms	5.00	6.00	3.00	7.00	24.00	45.00		Ho	rejected
6	High Debt Rating	12.00	8.00	4.00	16.00	5.00	45.00			
7	Predictable Source of Funds	8.00	8.00	5.00	3.00	21.00	45.00			

8	Corporate Tax Rate	21.00	6.00	3.00	3.00	12.00	45.00
9	Personal Tax Rate of Debt and Equity Holders	9.00	12.00	16.00	5.00	3.00	45.00
10	Level of Depreciation of NTDS	5.00	2.00	13.00	21.00	4.00	45.00
11	Cost of Bankruptcy	1.00	4.00	2.00	16.00	22.00	45.00
12	Voting Control	8.00	3.00	19.00	11.00	4.00	45.00
13	Restrictive Covenants of Senior Securities	3.00	21.00	10.00	5.00	6.00	45.00
14	Project Cash Flow of Earning From Assets	20.00	5.00	10.00	8.00	2.00	45.00
15	Riskiness of the Assets	4.00	9.00	17.00	6.00	9.00	45.00
16	Avoiding Disputes	2.00	15.00	9.00	18.00	1.00	45.00
17	Avoiding Misprice of Securities	5.00	3.00	10.00	8.00	19.00	45.00
18	Correcting Misprice of Outstanding securities	2.00	8.00	13.00	14.00	8.00	45.00
19	Growth and Stability	18.00	4.00	15.00	8.00		45.00
20	Cost Flow Capital	21.00	10.00	9.00	5.00		45.00
21	Cash Flow Ability	3.00	17.00	3.00	22.00		45.00
22	Size of Company	10.00	5.00	4.00	26.00		45.00
23	Marketability	7.00	23.00	2.00	13.00		45.00
24	Control	27.00	7.00	4.00	7.00		45.00
25	Flotation Cost	11.00	17.00	7.00	10.00		45.00
	Total Column	215.00	222.00	213.00	288.0	173.0	1125.00
		0.19	0.20	0.19	0.26	0.15	

Source: *Calculated from Appendix 16 .1% level of Significance 131.14*

Table 5.71 exhibits that 26% responses are taken most important,15% are important,19% are undecided, 20 % are most unimportant and 19% are unimportant for affecting the factor for decision of debt and equity financing making of tobacco firms.

On the basis of above results the following hypothesis is formulated and tested:

HO1 : Factors are not affecting financing decision techniques.

H1 : Factors are affecting financing decision techniques

The numerical value of x^2 test as association of attributes value is higher than its tabulated value at 1% level of significance .Therefore the null hypotheses is rejected and concluded that, some prominent factors are affecting financing decision techniques of firms.

Table 5.72: Leverage Measure of behavioural analysis Goodness of fit

Parameters	Std.dev	C.V. %	Mean	s.e.mean	X^2	d.f	$X^2._{O1}$	Result
ST Debt capacity	1.230	41.27	2.98	1.234	15.77	4	13.27	Rejected
LT Debt capacity	1.160	40.41	2.87	1.160	16.89	4	13.27	Rejected
Debt ratio	2.460	93.18	2.64	.367	29.55	4	13.27	Rejected
LT Debt/Total Debt	1.962	72.39	2.71	.287	44.75	6	16.81	Rejected
Equity/ Total Assets	1.139	24.97	4.56	.170	57.20	6	16.81	Rejected
LT Debt Ratio	1.267	33.16	3.82	.189	40.73	5	15.08	Rejected
LT Debt/Net Worth	1.687	48.62	3.47	.251	26.44	7	18.47	Rejected
Time interest earned	1.925	44.66	4.31	.287	22.97	6	16.81	Rejected
Interest coverage ratio	2.225	44.85	4.96	.332	22.22	4	13.27	Rejected
Cash flow coverage	2.236	34.14	6.55	.337	31.81	3	11.34	Rejected
Debt level of Nepal	.72	41.62	1.73	.107	6.4	2	9.21	Accepted

Source: Calculated from Appendix 16.

The c.v of LT Debt capacity is smaller than that of ST Debt capacity. It therefore clearly appears that LT Debt capacity under leverage measure is more consistent. Moreover, the c.v of Debt ratio is higher than that of LT Debt divided by Total debt. It means LT Debt divided by Total debt is more consistent than that of debt ratio. Similarly, LT debt ratio is smaller than LT Debt divided by net worth and it appears that LT Debt ratio is more consistent. Furthermore, among the time interest earned, interest coverage ratio and cash flow coverage ratio, the c.v of cash flow coverage ratio is

the smallest and therefore clearly shows that cash flow coverage ratio is more consistent under the leverage.

In order to take concrete results, the following hypothesis of x2 test as a goodness of fit is applied

HO1: There is insignificant association among the components of leverage of firm in an industry.

H1 : There is significant association among the components of leverage of firm in an industry.

The numerical value of x^2 test as association of attributes value is higher than its tabulated value at 1% level of significance .Therefore the null hypotheses is rejected and concluded that, there is significant association between the components of leverage measures but Nepalese debt level has insignificant association between the firm and industry. It means higher debt level of Nepalese tobacco firm.

Table 5.73 : Condition of Capital Structure

Condition	Parameters	Std. dev	c.v.	Mean	s.e. mean	X^2	df	$X^2._{01}$	Result	Respondent
Optimum capital structure	Borrow loan in relation to its equity capital	.562	30.54	1.84	.084	24.13	2	9.21	rejected	45
Relevant and irrelevent	Relevancy of capital structure	.447	35.20	1.27	.067	9.80	1	6.63	rejected	45
Debt equity ratio	Book value and market value basis	.387	32.79	1.18	.058	18.69	1	6.63	rejected	45
Financial reform policy	Govt is to follow	.645	28.79	2.24	.096	12.13	2	9.21	rejected	45
	Liberalisation policy	1.172	62.01	1.89	.175	23.35	3	11.34	rejected	45

Source: *Calculated from Appendix 16.*

The c.v of *borrowed loan in relation to equity* capital is smaller than relevancy of capital structure policy. It means optimum capital structure is more consistent than relevant and irrelevant capital structure policy. Moreover, the C.V. of debt equity ratio is smaller than financial liberalisation policy. It means debt equity ratio is more consistent than liberalisation policy. The c v of government is to follow further financial reforms policy smaller than among factors .It clears that government policy is more consistent than others.

The following hypothesis of x^2 as goodness of fit are formulated and tested.

HO: 1 there is insignificant difference among the responses of optimum capital structure, relevancy of capital structure, debt equity ratio and financial reform policy of tobacco firms.

H 1: There is significant difference among the responses of optimum capital structure, relevancy of capital structure, debt equity ratio and financial reform policy of tobacco firms.

The overall factors of table 5.73 shows that the calculated value of x2 is higher than its tabulated value at 1% level of significance. Therefore, it is concluded that there is significant difference among the responses of optimum capital structure, relevancy of capital structure, debt equity ratio and financial reform policy of tobacco firms**.**

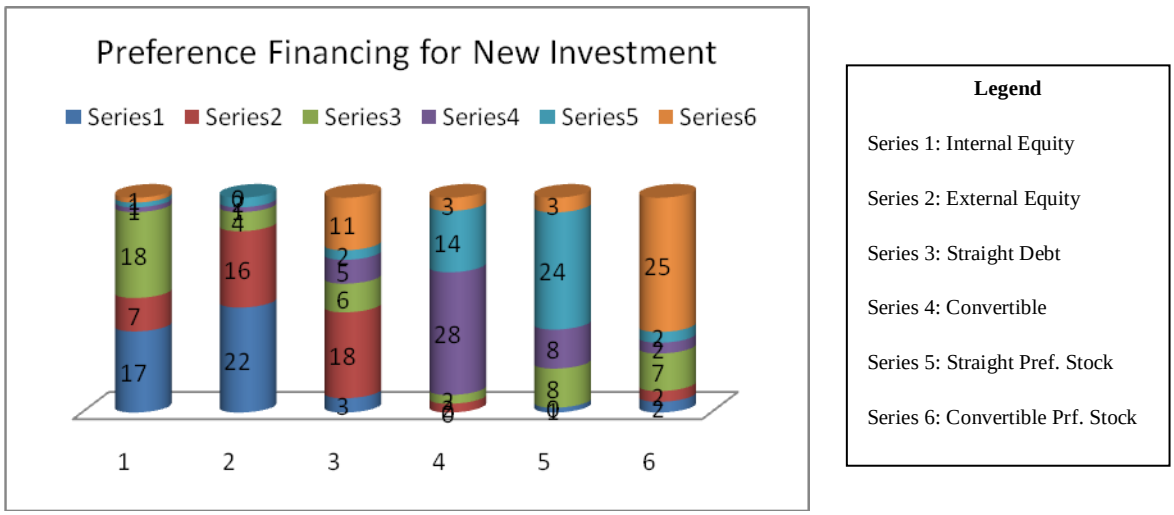
Table 5.74 : Preference Source of Financing for New Investment

Parameters	composite sum	composite mean	s.e mean	1	2	3	4	5	6	N
Internal equity	87	1.93	0.17	0.38	0.49	0.07	0.00	0.02	0.04	1.00
External equity	113	2.51	0.16	0.16	0.36	0.40	0.04	0.00	0.04	1.00
Straight debt	134	2.98	0.16	0.40	0.09	0.13	0.04	0.18	0.16	1.00
Convertible	182	4.04	0.13	0.02	0.02	0.11	0.62	0.18	0.04	1.00
Straight Preferred stock	199	4.42	0.14	0.02	0.04	0.04	0.31	0.53	0.04	1.00
Convertible preferred stock	212	4.93	0.21	0.02	0.00	0.26	0.07	0.07	0.58	1.00

Source: *Computed from Appendix 16*

The composite sum explains the preference of mode of new investment. As per analysis, the primary emphasis is seen on convertible preferred stock, secondary on preferred stock and gradually on convertible shares, debt, External Equity and finally internal equity.

Fig 5.14 Preference Financing for New Investment



Source: *Computed From Table 5.74*

5.1.2.3 Sources of funds at different level of debt

The financing source preferences by the respondents at different level of debt are shown in Table 5.75. Most preferred and least preferred ranking of sources of funds is taken at current level, increased level and decreased level of debt according to their needs and requirements.

Table 5.75 : Preference Sources of Fund to Secure Financing Next.

Level	At Current Level of Debt	At Current Level of Debt	At Current Level of Debt	At Current Level of Debt	At Current Level of Debt	At Current Level of Debt
Parameters	**Most**	**least**	**Most**	**least**	**Most**	**Least**
Short term loan	0.49	0.51	0.62	0.38	0.62	0.38
Long term loan	0.33	0.67	0.31	0.69	0.29	0.71
New stock issue	0.62	0.38	0.69	0.31	0.69	0.31
Retained Earning	0.76	0.24	0.33	0.67	0.82	0.18

Source: Appendix 16

The above table shows 20% *increased and decreased debt level for financing next*. This table shows which financing is more preferred for subsequent financing of the company. For this purpose, the sensitivity analysis of range of optimum capital structure and excess debt capacity at which firms are operating are shown in above table. According to this table, the respondents view at existing level of debt, Retained Earnings is the most preferred source of fund (76%) followed by new stock issue (62%), Short term loan (49%) and long term loan (33%). Now at increasing level of debt, the most preferred source of fund subsequently are new stock issue, short term loan, Retained earnings and long term loan. Further, in case of decreasing level of debt, the preferred sources of funds are retained

earnings, new stock issue, short term loan and long term loan gradually. On contrary are the results if the financing in all these three circumstances are least preferred.

5.1.3. Interrelation between Behavioural analysis and Operational Aspect:

The computations and hypothesis results generated from the operational overview is found to correlate with the Behavioural facet. The comparative Debt condition between Nepalese and Indian Tobacco Firms is different as per Operational perspective which is further supported through the behavioural analysis which interprets Debt condition to be non-identical between these firms. Similarly, in case of financing decision technique, the financing decisions are different. For instance, in case of Nepalese Firms, JCF is highly concentrated on debt financing whereas Surya Nepal is focussed on internal equity financing thus absconding the leverage portion. However, in case of Indian Firms, the ITCs Debt financing is more in comparison to GPI. This reflects the discrepancy between firms in terms of capital structure decisions supported by Behavioural Hypothesis presented in table 5.72 & 5.74. With this regard the equity and debt issue shows insignificant association between tobacco firms too. Further, there are numerous factors that affect the financing decisions. In condition of Nepalese tobacco firms, the external factors are predominant and outweigh the internal factors, whereas in case of Indian firms the internal factors affect the management decisions more than external factors which mean Indian firms can well manage the firm's decision making level through

management discretion in comparison to Nepalese tobacco firms. Similarly, there is significant association among the leverage components of capital structure such as optimum capital structure, Relevancy and irrelevancy policy of capital structure and debt equity composition and financial reform policy of Government. Obviously, these factors are prudential for companies' growth and prosperity. As per operational perspective, Nepalese firms being conventional in their way of operations do not interpret these factors in their daily business operations normally to the extent required; whereas Indian Firms being attached globally more in comparison to Nepalese firms they consider these components more pertinent in financing decisions which is supported with acceptance of behavioural hypothesis "significant difference among the responses of optimum capital structure, relevancy of capital structure, debt equity ratio and financial reform policy of tobacco firms" (table 5.73).

Chapter-6
Summary Major Findings, Recommendations & Suggestions

CHAPTER- SIX
SUMMARY, MAJOR FINDINGS, RECOMMENDATIONS AND SUGGESTIONS

6.1 Summary

Capital structure has become an essential component for determining and justifying the subsistence of an industry, a base for financial analysis and corporate reporting. Nonetheless, it is a preliminary part to consider prior any industrial setup and performance because it directly forecasts the companies standards and strategies. This study is concentrated in inter-company as well as intra-country analysis and comparison of Tobacco industries of two south Asian nations viz; India and Nepal along with their financial forecasting.

Contemplating early nineties, corporate financial management in India was relatively drab and placid activity. The importance of financial decisions were very least for the reason being, the firms were given very little freedom in the choice of key financial policies. The government regulated the price at which firms could issue equity, the rate of interest which they could offer on their bonds, and the debt equity ratio that was permissible in different industries. Moreover, most of the debt and a significant part of the equity were provided by public sector institutions. Gradually, with rising globalization and liberalization, the market capitalization and capital structure perception has changed drastically. Nepal on the other hand, hasn't been able to accommodate itself with global working culture and environment. Despite, Nepal`s commitment to

obey the principles and approach of liberalization, Privatization and Globalization (LPG). The Integration of Nepalese economy into the global economy through the platform of global liberalization and privatization can be specified as the landmark event for the Nepalese economy. The globalization produces an environment for the Nepalese producers to enhance their competitive strength in the global market.

Considering the capital structure of Nepalese firms, they accompany high levered policy; however the long-term debt ratio is significantly low. Assets structure and size are observed positively related to leverage where as liquidity, risk, growth, non-debt tax shield are negatively related to leverage. The signs of estimates suggest that both pecking order and trade off theories are at work in explaining capital structure of Nepalese companies. Also, the macroeconomic factors GDP, inflation and capital market influence in firm's capital structure decisions. The study of properties of the portfolio shows that at the lower level of leverages, firm tends to employ more short-term debt than long-term debt and firm shifts to long-term debt from short-term debt in respect to increasing leverage ratio. The moderately levered firm are highly profitable than less levered and highly levered firms. It can thus be stated that there exists similar pattern of Capital structure between Nepalese and Indian manufacturing firms.

The basis of this study is to scrutinize and have insight into comparative financial viability especially capital structure decision between tobacco industries of India and Nepal. Tobacco industries almost marks up to 700 milo kg export oriented sales turnover in India, which can be

regarded as a dominant agro-based sector contributing to GDP. Similarly, Nepalese tobacco firms have expedite sales turnover of approximate 2400 MT per year, thus, setting a remarkable contribution in countries economy. Despite, most of these tobacco industries are facing losses year after year. These situations clear that, proper development of these sector hasn't been possible due to the existing unsound corporate managerial and financial problems along with additional impact of global financial regulations. Hence, the study focuses on making suggestions for the improvements towards achieving financial efficiency.

In order to achieve the objectives, the information and data have been accumulated from Primary as well as secondary sources from the annual reports ,bulletins, webpage, and direct oral interview and so on. Further, a comparative ten year financial analysis between Nepalese and Indian firms has been made. In the appraisal part of the study, various financial, statistical and econometrical tools have been implemented. Further for inferential analysis, hypotheses have been formulated and tested using ANOVA, chi-square, DW Test and Student T-Test along with Factor analysis. Besides, there are numerous capital structure theories enumerated in the study comprising from conventional such as Net Income Approach, Net operating income approach, Modigliani & Miller Approach etc to the modern Peking order theory, Agency cost theory, Asymmetric information theory, signalling effect theory, Naïve theory, product-market input theory and like other theories as well. Besides, general capital structure notion theories are also discussed with prominent attention to

current financial practice associated with Default risk, risk-shifting incentives, credit default swap, calibration and assessment of default risk and so on. The study carried out during 2000s and early 2009s revealed that capital structure decisions were mostly affected by macro factors and the propositions of capital structure theories were focussed on the asset volatility and default probability, taxation and bankruptcy costs, and hedging and arbitraging concepts.

6.2 Major Findings

The theoretical and empirical evidences of the research study helped to produce the following major findings.

1. The computation of C.V, mean, Std. Error of Mean and standard deviation jointly reflect the proprietary ratio between country and intra industries of Nepal & India. It is found that the risk per unit return of Nepal is higher than that of India. In terms of Nepalese firms, the risk weight of JCF is higher than SURYA, whereas in case of Indian firms, the ITC weights riskier to GPI. High risk for JCF is due to high debt involvement with lack of transparent capital structure policies. The variation of C.V in case of Indian firms is least in comparison to Nepalese firms. However, in case of Indian firms, ITC`s capital structure accompanies high debt concentration in comparison to GPI. Comparing all the firms the average return of JCF is higher as higher the risk, higher the return. Finally, Standard deviation reflects decision in same direction as C.V.

2. Analyzing the Long term debt ratio in terms of total asset creation, it is observed that the JCF`s average debt financing accounts for almost 31 % resulting CV of 36.90. This means the return of JCF is dependent upon the utilization of assets created by using debt. On contrary, asset creation is done using equity in case of SURYA. This means the return is independent of asset utilization and mode of creating asset irrespective of whether it is debt or Equity. Thus, the kurtosis analysis helps to conclude that JCF has comfortably managed its long term debt for asset creation rather than that of Surya Nepal as it is entirely dependent on equity after third year as shown in appendix. However, in case of Indian firms, both differ in case of proportion of financing for accumulation of assets and are seen to generate return as per their debt financing.

3. Capital turnover ratio shows the relationship between net sales and capital employed. Moreover, this ratio shows how efficiently the capital is invested in the business and is being used into the sales. The standard deviation of Surya Nepal is lower than JCF. The Standard norms shows the higher the ratio better the efficiency of utilization of capital funds and concludes that Surya Nepal has managed better profitability than JCF due to efficient utilization of capital for the business activities. Similarly, in case of Indian firms, ITC is better performer in utilization of its capital for business than that of GPI.

4. There exists an insignificant difference between the mean value of proprietary ratio, Long term debt to total assets and capital turnover ratio in case of firms. In case of all components of Nepalese firms, null hypotheses have been rejected, but in case of Indian firms only capital turnover ratio is rejected.

5. Over the course of 10 year investment pattern, the proportion of debt grew from 97.62% to 211.73% providing compound annual growth rate of 8.05%.Similarly, financing from equity declined from 114.25% to 89.31% bestowing negative return of -2.43%. From this, it can be ascertained that even if the investment was extremely volatile, fluctuating a great deal from year to year, the compound growth of JCF gives the impression that investment with existing capital structure provided stable return throughout the tenure.

6. The compound growth rates of long term debt and equity are -69.05 and 9.26 percent respectively. Despite such numerical values, the observation shows that Surya Nepal has significantly declined its debt burden and has increased the magnitude of equity.

7. The observation of 10 years investment pattern shows that, the proportion of debt is reduced by 5.59 percent and equity is increased by 14.63 percent for ITC. Similarly compound growth rate for GPI is positive i.e., debt ratio increases with 40.94 percent along with 10.36 percent in equity. However, the proportion of debt financing is seen increased as compared to equity in progressive years. From this, it can be ascertained that even if the investment was extremely

volatile, fluctuating a great deal from year to year, the compound growth gives the impression that investment with existing capital structure provided stable return throughout the tenure for Indian Firms.

8. The D-W test of Surya Nepal explains that the long term debt is partially used throughout the span of ten years, which means the relationship between long term debt and equity is valid and long term debt depends upon equity of JCF firms. Similarly, Nepalese firms are found to follow pecking order principle where Internal equity financing is preferred than that of Debt Financing. However, in case of Indian firms they are also practicing Peking order Principle and there exist insignificant difference between the mean value of ratio measuring the size of long term debt and equity. According to DW test, GPI has negative auto correlation between Long term debt and Equity but ITC has no auto correlation.

9. Analyzing the implication of factors upon the LTDR and TDR of both the Nepalese and Indian Firms, there exists multicolinearity in almost all cases. In case of computing LTDR, six independent variables are considered. It has been observed that there exists adverse relationship between long term debt and sales. In such circumstances, to eliminate debt entirely, the sales should be increased by 7921.6 percent. Furthermore, multicolinearity exists amongst factor. Using VIF index, sales and profit component is problematic; however, it can be managed by the firm as it depends

upon companies' discretion on decision making. On contrary, Surya Nepal doesn't have multicolinearity problem.

10. Similarly, in case of TDR between firms, seven independent variables are considered. Here JCF encounters multicolinearity having problems with sales, liquidity management, NTDS and BRISK as per VIF index, whereas NTDS & BRISK has serious problem of colinearity as per condition Index. In other words, these two factors are beyond control of the firm management. Similarly, Surya Nepal also has multicolinearity with SIZE, PROFIT, TANG and NTDS according to VIF Index. However, there is controllable situation on part of management of Surya Nepal.

11. In case of Indian Firms, both are suffering from multicolinearity in terms of LTDR. The factors associated with ITC and GPI using in VIF index are TANG, GROWTH and BRISK. Similarly, with TDR, the multicolinearity exists with both the companies. The factors associated are TANG, GROWTH, BRISK, NTDS, PROFIT and liquidity affect multicolinearity and those factors beyond control of management are profit, liquidity and TANG for ITC and TANG, GROWTH, risk and NTDS for GPI.

12. Comparing two Nepalese firm, the capital employment in terms of sales for JCF is greater than that of SURYA. The interest coverage ratio of Surya Nepal is greater than JCF. Since SURYA NEPAL has no debt obligations unlike JCF. On the other hand, there is not efficient employment of capital in terms of JCF.

13. For Indian firms, capital employed and interest coverage ratios are favorable .ITC payout ratio is 331.24 times from its earnings. However GPI can cover up to 43.33 times the income earned. In terms of capital employment, ITC's return is observed less in comparison to GPI.

14. Correlation coefficient shows that there exists positive correlation between the return on capital employed between two Indian tobacco companies ITC and GPI. The numerical calculation helps to conclude that if the magnitude of capital employed increases by 7.9 percent, the volume of return increases by 100 percent and vice versa. Correlation coefficient shows that there exists negative correlation between the return on capital employed between two Nepalese tobacco companies JCF and SURYA. The numerical calculation helps to conclude that if the magnitude of capital employed increases by 89.1 percent, the volume of return decreases by 100 percent and vice versa. Thus, there exists negative ROCE for JCF. Such a negative correlation between the variables is the outcome of managerial slackness, rising unproductive utilization of funds and inefficiency of labour management along with over staffing in the case of JCF. However, Surya Nepal has not utilized its short term and long term debt and it basically depends on equity investment in the production of tobacco output. The managerial observation helps to infer that the excess dependence on equity

investments may be the prime cause of negative relationship between the return on capital employed in Surya Nepal.

15. The composition of debt management of JCF is larger than that of SURYA Nepal. The average usage of Debt in case of JCF is 3.18 and that of SURYA NEPAL is 0.27. Similarly, the risk for the intended debt usage of JCF is higher than SURYA Nepal. On the other hand, capital gearing of JCF is more than SURYA Nepal, which reflects that the JCF has accelerated its capital usage in comparison to SURYA Nepal.

16. The composition of debt of ITC is more than that of GPI. The average usage of Debt in case of ITC is 0.51 and that of GPI is 0.05. Similarly, the risk for the intended debt usage of ITC is slightly higher than GPI. On the other hand, capital gearing of GPI is more than ITC, which means that the GPI has accelerated its capital usage in comparison to ITC.

17. Now comparing the firms of countries, the Debt Equity Ratio and capital gearing of Nepalese firms has been observed more than Indian Firms. This means Nepalese firms endure more risk in comparison to Indian firms. However, the variation in ratios between Nepalese and Indian firms may also be due to the scale of operations.

18. The bank loan of JCF is higher than Surya Nepal Tobacco Company. Besides bank Loan, JCF has used Provident Fund of staff, which is considered as other loan for interpretation. Other type

of loan is in decreasing trend but bank loan has increased during 2008 and 2009.The coefficient of variation of JCF is 26 percent of bank loan and 33 percent of other type of loan, which is highly used by JCF in contrary to Surya Nepal. It also reveals that CV value of Surya Nepal is distinctly smaller than that of JCF and others. Such statistical figures help to conclude that Surya Nepal is more consistent in minimising the burden of loan.

19. In Indian case, the composition of loan of ITC has used 37.65 percent of bank loan, which is higher than GPI .The ITCs bank loan is in decreasing trend but other type of loan is in increasing trend. Other type of loan for ITC incorporates fixed deposit, term loan and promissory note. The coefficient of the variation helps to infer that bank loan of ITC is higher than GPI. It means ITC has used more debt than GPI for business promotion. Thus, ITC is more consistent in managing the comprehensive loan burden in the production management. It can thus be concluded that the Indian firms adhere to their companies capital structure policies and decisions whereas in case of Nepalese Tobacco firms, JCF doesn't have stringent policies for guiding their debt compositions unlike Surya Nepal Tobacco Industries, which constitutes better management control over capital structure decisions.

20. The relationship between sales and debt is negatively correlated in case of JCF. Similarly, between Debt-equity ratio and profitability along with ROS & Capital Turnover shows negative correlation. The

adverse correlation is due to the unproductive usage of Debt in fostering the sales of the company. In fact, the proportion of debt was invested in staff benefits rather than company's net worth enrichment. The company's financing framework is largely dependent upon leverage rather than equity. Moreover, there exists least Return on sales in proportion to capital turnover as JCF output has been continuously hampered by conflicting interest of various parties of production management.

21. The relationship between sales and debt is positively correlated in case of Surya Nepal. This resembles adequate and efficient utilization of debt in increasing the sales revenue of the firm. Similarly, considering Debt-equity ratio and profitability, the company has focused in equity financing with efficient utilization of equity in generating profit for the firm. However, the capital turnover and profitability is negatively correlated. This might be due to 100% equity financing which attracts tax, consequently decreasing return. In the mean time, the relation could be positive if the financing structure is designed jointly using debt and equity which could somehow decrease the proportion of tax, unlike using equity only as the cost of fund of equity may be more in comparison to usage of debt.

22. The relationship between capital turnover & Return on sales, Debt ratio & profitability, Debt & sales of ITC have positive relationship which reflects the efficient use of Debt commensurating increase in

sales along with the profitability of the organization. Hence, ITC 's capital structure is found to be appropriate and reflecting the company's growth along with rewarding shareholders interest.

23. The relationship between capital turnover & Return on sales is negative whereas Debt ratio & profitability, Debt & sales of GPI have positive relationship which reflects the efficient use of Debt commensurating increase in sales. The aggravating nature of return of sales despite capital turnover is mainly due to the inadequate usage of capital in the process of accelerating sales. However, Indian firms like GPI can transform the usage into positive relation by employing back the capital resource in sales enrichment as their diversion may be temporarily employed elsewhere.The correlogram shows the same conclusion which is presented in ADF unit root test. This indicates that the variable is stationery, since the graphical representations of AC and PAC in all lags are within the border line.

24. The correlogram shows the same conclusion which is presented in ADF unit root test. This indicates that the variable is stationery, since the graphical representations of AC and PAC in all lags are within the border line.

25. Reliability test is applied for leverage analysis with tools of co-integration test, correlogram and unit root test. With these tools applied, it is found that there exists co integrating relationship between DOL and DFL of JCF as well as SURYA NEPAL as per computation of Trace statistics and Max-Eigen Values. On contrary,

there exists co integrating relationship between DOL and DFL of ITC but co integration of GPI as well. Thus, in case of Nepalese firm null hypothesis is accepted but rejected in the Indian Firms.

26. Using Chow break point test analysis, JCF has altered its debt decision as explained by structural break during 2004, 2005, 2006, 2007 & 2008. However, the decision has not made any significant progress in business rather the proportion of loss has increased gradually in forthcoming years. On contrary, the SURYA `Nepal's profitability has increased with changes in structure alteration decision made during 2004, 2005, 2006, 2007 & 2008.

27. On the basis of F statistics and Log likelihood ratio, It is found the structural break in 2004 and 2005 for ITC and, 2005 for GPI at 5% level of significance .The entire analysis helps to specify that the policy formulation and implementation more or less seems to be stable and consistent in ITC and GPI. Likewise , the econometric tool of pair wise Granger causality test of tobacco company of Nepal and India helps to come across the conclusion that the null hypothesis is accepted in all the cases and , thereby, one variable (debt) insignificantly influences another variable i.e. sales.

28. Granger causality test has identified there is no causal relationship between sales and debt level of any change decision of Nepalese and Indian tobacco Company. It means sales and debt component are both independent.

29. Considering Rank correlation between Nepalese and Indian industry, JCF in Nepalese industry shows adverse relation between return and assets and positive relation between Return and Equity. Similarly, Surya Nepal's relation between return and asset, Equity is positive. On contrary, Indian firms shows positive relation with Return. The Negative relation of Return with asset in case of JCF is due to inefficient and inadequate utilization of company's assets generating losses throughout the years of operation. Furthermore, this may also be due to the unwarranted return from other components such as ROS, ROCE etc affecting the return generated by utilization of assets. However, the positive relation between SURYA NEPAL and Indian Firms reflects that these firms have been using their availed resources in effective manner thus materializing profit.

30. There are numerous factors that determine the Nepalese and Indian tobacco firms' capital structure. However, some prominent factors that consequents firms capital structure are considered. These factors are acquired on basis of rotated component matrix and is categorised as per the highest correlation. In this regard, the capital structure of JCF is determined by Equity Earning, solvency, profitability, Leverage and Cost of goods sold factors. Similarly the capital structure of Surya Nepal is determined by profitability and Leverage factors.

31. The capital structure of ITC India is determined by Equity earning, leverage, profitability, operating expenses, capital employed and sales factors. Similarly, the capital structure of GPI is determined by Equity earning, leverage, profitability, operating expenses, Risk, Size and Debtors Turnover.

32. Comparing the Responses cumulated from the Primary Data collection method, it is found that amongst the hypotheses set, null hypothesis is rejected except in case of debt condition proving unsimilar for sampled firms of tobacco Industries at 1% Level of Significance. The accepted hypothesis from behavioural analysis can be summarized to have independent financing technique between tobacco firms in an industry keeping in mind, the exogenous environmental factors.

6.3 Recommendations and Suggestions

The following recommendations have been made on the basis of analysis and findings of the study for the improvements of the capital structure management of tobacco /cigarettes industries of Nepal and India. These recommendations are more useful to the government of Nepal and India and also guidelines to the tobacco companies.

- Improvisations in Manufacturing sectors, especially Tobacco industries require high attention from Government Perspective in case of Nepal. The most prominent industries i.e., JCF & Surya Nepal have immense prospects but Government on the other hand should emphasize tobacco farming literally and should reformulate

policies streamlining the production. They should also be given priority as equivalent to other cash crops cultivated in Nepal. Similarly, allocating tobacco farming horizon, assisting subsidies for export and imports of production materials, export promotion, tax benefit etc would contribute of tobacco farming and cultivation to national output and revenue.

- There is no extremity of business in contemporary world due to proximity between countries aroused from globalisation, liberalisation and privatisation (LPG). In due course, intervention is must for progressing economic status of the country. So, the first step should be made by monitoring agencies and organisation prevalent in the economy for encouraging the Foreign Direct Investment (FDI). Most of the emerging countries like India has already inherited policies for establishment of MNCs and Subsidiary companies and have already initiated global financial practise whereas in case of Nepal, it is still in operational phase yet to be implemented. However, with liberal outlook towards financial institutions, a door has been opened for establishment of International Banks and financial institutions after 2011. Simultaneously, framework should also be designed for attracting international investors for proliferating domestic mineral resources such as tobacco industries.

- One of the most impairing aspects in case of Nepal has been political scenario. Every sector should endure consequences as a

result of misappropriation in politics. Thus, the current demand is on materializing political stagnancy so that every sector in nation gets guided accordingly.

- As cited in research above, JCFs situation has been found degrading year by year. The loss has been found to increase in subsequent years. As JCF has been one of the crucial parts in history of tobacco industries in Nepal, the precedence should be given by government in years ahead. The financing has all been utilised in unproductive sectors i.e. mitigating administrative expenses which has resulted in slackness in industrial production and thereby financial loss. Hence, management policy and works should be strictly monitored if the company is to sustain in long run. Furthermore, systematisation in context of budgeting, human resource, farming technique and so forth should be identified and progressive action should be taken for improving the overall aspect of JCF. Similarly, Surya Nepal on the other hand has practised equity financing and has been able to generate progressive profit maintaining existing capital structure.

- Predominance of labour union problem has become part and partial of daily business operations both in Nepalese and Indian context. The main cause lies in the approach the management is practising, however, participatory management approach should be implemented in deducing the labour problems. Besides, in situation today where there had been massive brain drain in economy like

ours, shortage of labour force has been found. In such circumstances, if coercion is practised it would be difficult enough in managing the labour force. Hence, effective management policy should be made reflecting both parties interest, with negotiation.

- Tobacco companies should follow footsteps in bringing out policies for encouraging farmers for financing and production of tobacco. If the production management of tobacco is supported by the leading tobacco industries making available input loan to the farmers, the tobacco production and income employment generation would be much easier for the trade and development in Nepal and India.
- JCF should manage its debt in efficient manner. As seen above, the overall proportion of debt has been used in creation of assets, thus, JCF should manage its debt in such a way as to create assets generating return to the firm. Additionally, JCF needs to manage its capital through internal management control such as privatization of unit, management contract or other relevant strategies.

***

Bibliography

BIBLIOGRAPHY

`

Agrawal, Anup., & Nagarajan, Nandu. (1990). Corporate capital structure, agency costs and ownership control: The case of the all-equity firms. *Journal of Finance*, 47 (4), 1325-1331.

Agrawal, N.P. (1976). A study of capital structure in aluminium industry in India. *Journal of Commerce,* 109, 75-82.

Alan, Kraus., & Robert, H. Litzenberger. (1973). A state preference model of optimal ffinancial leverage. Philadelphiya USA *:Journal of Finance*, 28, (4), 911-922*.*

Alexander, A .Robichek & Stewart, C. Myers. (1965). *Optimal financing a decision.* New Jersey: Prentice hall Inc.

Antoniou, A., Guney, Y., & Paudyal, K. (2002). Determinants of corporate capital structure: Evidence from European Countries, *Centre for Empirical Research in Finance*, UK: Department of Economics and Finance. University of Durham.

Arora, G. (1992). *Capital structure pattern in the metal alloy industry.* M. Phil. Dissertation: Department of Commerce. University of Delhi.

Arora, N., Bohn, J., & Zhu, F. (2005). *Surprise in distress announcements: Evidence from equity and bond market*s. Working Paper, Moody's KMV .

Auerbach, A.J. (1985). Real determinants of corporate leverage. In Benjamin M. Freidman (Eds.). *Corporate capital structure in the United States.* 301-324. Chicago: The University of Chicago Press.

Ayers, B.C., Cloyd, C.B. & Robinson, J. R. (2000). *The influence of income taxes on the use of inside and outside debt by small business.* W*orking Paper.* Athens: University of Georgia.

Bancel, F.,& Mittoo, U.R. (2004). Cross-country determinants of capital structure choice: A Survey of European firms. *Financial Management, 33,* 103-132.

Barclay, M. J. & Smith, C. W. (1999). The capital structure puzzle: Another look at the evidence. *Journal of Applied Corporate Finance*, 12(1), 8-20.

Barclay, M. J., Smith, C. W. & Watts, R. L. (1995). The determinants of corporate leverage and dividend policies. *Journal of Applied Corporate Finance*, 7(4), 4 -19.

Barges, Alexander. (1963). *The effects of capital structure on the cost of capital*. Englewood Cliffs: New Jersey. Prentice-Hall Inc.

Barnes, *A. (1963). The effect of capital structure on the costs of capital: A test and evaluation of the Modigliani and Miller propositions.* Englewood Cliffs, New Jersey: Prentice Hall.

Bauer, P. (2004). Determinants of capital structure: empirical evidence from the Czech Republic . *Czech Journal of Economics and Finance*, 54, 2-21.

Berger, A.N. and 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 & Finance*, 30 (4), 1065-1102.

Berndt, A., Jarrow, R., & Kang, C. (2006). Restructuring risk in credit default swaps: An empirical analysis. *Working Paper.* Carnegie Mellon and Cornell University.

Bevan, A., & Donbold, J. (2000). Dynamics in the determinants of capital structure in the UK. *Working Paper.* Department of Accounting and Finance .Glasgow: University of Glasgow.

Bharath, S. T., & Shumway, T. (2004), Forecasting Default with the KMV-Merton Model., *Working paper.* Annarbor: University of Michigan.

Black, F., & Scholes, M. (1973). The pricing of options and corporate liabilities. *Journal of Political Economy,* 81, 637- 654.

Blanco, R., Brennan, S. , & Marsh, I. W. (2005). An empirical analysis of the dynamic relation between investment-grade Bonds and credit default swaps. *The Journal of Finance,* 60(5), 2255-2281.

Boateng, A. (2004). Determinants of capital structure: Evidence from International Joint Ventures in Ghana. *International Journal of Social Economics*, 31 , 56-66.

Booth, L., Aivazian, V., Kunt, A. D. , & Maksimovic, V. (2001). Capital structure developing countries. *Journal of Finance,* 56(1), 87-130.

Bos, T. , & Fetherson, T.A.(1993).Capital structure practices on the specific firm. *Research in International Business and Finance, 10,53-66.*

Bowen, R. M., Daly, L. A. , & Huber, C. C. (1982). Evidence on the existence and determinants of Inter-industry differences in leverage. *Financial Management,* 11, 10-20.

Bradley, M., Jarrell, G. , & Kim, E. H. (1984). On the existence of an optimal capital structure: Theory and evidence. *Journal of Finance*, 39, 857-878.

Brealey, R. A., & Myers, S. C. (1996). *Principles of Corporate Finance. 5th International edition*, New Delhi: McGraw-Hill.

Brigham, E. F., & Ehrhardt, M. C. (Eds) (2002). *Financial Management: Theory and Practice.* New York: Thomson South Western.

Brigham, E.F., & Houston, J.F. (2004*). Fundamental of Financial Management.* Singapore: Thompson Asia Pvt. Ltd.

Brounen, D., Jong, A. D. , & Koedijk, K. (2005). Capital structure policies in Europe: Survey Evidence. Erasmus Research Institute of Management (ERIM). Erasum: Rotterdam School of Economics . Erasmus University.

Brown, K. C., Harlow, W. V. , & Starks, L. T. (1996). Of tournaments and temptations: An analysis of managerial incentives in the mutual fund industry. *The Journal of Finance,* 51(1), 85-110.

Cao, C., Yu, F. , & Zhong, Z. (2006). The Information content of option-Implied volatility for credit default swap Valuation. *Working Paper.* Buston: Penn State and Irvine .

Cassar, G. and Holmes, S. (2003). Capital structure and financing of SMEs: Australian Evidence. *Accounting & Finance*, 43(2), 123-147.

Chamaii, P.C. (1985). A Panorama of capital structure planning of Indian Cement Industry. *Lok Ydhyog* , 19(9),23-30.

Chan, Chung. (1987). Capital structure as optimal Contracts. *Working Paper.* Carlson School of Management: University of Minnesota.

Chang, R. P. , & Rhee. S. G. (1990). The impact of personal taxes on corporate dividend and capital structure decision. *Financial Management,* 19(2), 21-31.

Chaplinskv, S., & Niehaus, G. (1990). The determinants of inside ownership and leverage. *Working Paper*. University of Michigan.

Chatrath, A. (1994). Financial leverage and the cost of capital: A re-examination of the value-relevance of capital structure. Unpublished PhD. Dissertation. USA: Cleveland State University.

Chehab, A. *(1995).* Essays on the determinants of capital structure. Unpublished PhD. Dissertation.USA: University of New Orleans.

Chesney, M. , & Gibson-Asner, R. (1999). The Investment policy and the pricing of equity in a levered firm: A re-examination of the contingent claims. valuation approach. *The European Journal of Finance,* 5, 95-107.

Chesney, M., & Gibson, Asner, R. (2001). Reducing asset substitution with warrant and convertible debt issues. *The Journal of Derivatives* , 39-52.

Chiang, Y.A., Chang, P.U.A. , & Hui, C.M.E. (2002). Capital structure and profitability of the property and construction sectors in Hong Kong. *Journal of Prospect Investment & Finance*, 20 (6), 434-53.

Chiarella, C., Pham. T. M., Sim, A. B., & Tan, M. M. L. (1992). Determinants of corporate capital structure: Australian evidence. In S.G. Rhee and RT. Chang (eds). *Pacific Basin Capital Markets Research, 3.* Amsterdam: Elsevier, The Netherlands.

Chow*, G*.C. (1960). Test of equality between sets of coefficient in two linear regression. *Econometrica,* 28, 591-605. Available from <http> www.sas.com. SAS Institute inc. 2011 Aug, 18, 7.43 AM.

Chowdhury, G., Green, C.J. , & Miles, D. (1994). UK Companies' short-term financial decisions: Evidence from company accounts data. *The Manchester School of Economics and Social Studies, 62, 395* -411.

Coleman, Anthony, Kyereboah. (2007). The impact of capital structure on the performance of micro finance institutions. *The Journal of Risk Finance,* 8(1) 56-71.

Collin, Dufresne. P. , & Goldstein, R. (2001). Do credit spreads reflect stationary leverage ratios?. *The Journal of Finance,* l 56, 1929-1957.

Cornelli, F., Pontes, R. , & Schaffer, M. E. (1996). The Capital structure of Firms in central and eastern Europe. *CEPR Discussion Paper No.1392 :* Centre for Economic Policy Research. London: UK.

Cremers, M., Driessen, J., Maenhout, P. , & Weinbaum, D. (2006). Individual stock-option prices and credit spreads. *Working Paper.* University of Amsterdam .

Crosbie, P. , & Bohn, J. (2003). Modeling default risk. Moody.s KMV. Available from<http> www.defaultrisk.com. 38.

Crutchley, C.E. , & Hanson, R.S. (1989). A test of the agency theory of managerial ownership, corporate leverage and corporate control. *Financial Management,* 18(4), 36-46.

Currie, A. , & Morris, J. (2002). And now for capital structure Arbitrage. *Euromoney* (December), 38-43.

De, Angelo, H., & Masulis, R. (1980). Optimal capital structure under corporate and personal taxation. *Journal of Financial Economics,* 8(1), 3-29.

Dennis, S., Nandy, D. , & Sharpe, I. (2000). The determinants of contract terms in bank revolving credit agreements. *Journal of Financial and Quantitative Analysis,* 35(1), 87-110.

Donaldson, G. (1961). Corporate debt capacity : A study of corporate debt policy and the determination of corporate debt policy. Boston: Division of Research. Graduate School of Business Administration, Harvard University.

Downs, T.W. (1993). Corporate leverage and non-debt-tax shields: Evidence on crowding out. *Financial Review, 28, 549-583.*

Duan, J. C., Gauthier, G. , & Simonato, J. G. (2004). On the equivalence of the KMV and maximum likelihood methods for structural credit risk models. *Working Paper*. University of Toronto and HEC Montreal.

Duarte, J., Longstaf, F. A. , & Yu, F. (2005). Risk and return in fixed income arbitrage: Nickels in front of a steamroller?. *Review of Financial Studies,* 98.

Duffie, D., & Lando, D. (2001). Term structures of credit spreads with incomplete accounting information. *Econometrica,* 69(3), 633-664.

Eom, Y. H., Helwege, J., & Huang, J. (2004). Structural models of corporate bond pricing: An empirical analysis. *The Review of Financial Studies,* 17(2), 499-5443.

Ericsson, J. (2000). Asset substitution, debt pricing, optimal leverage and maturity. *Working Paper*, McGill University.

Ericsson, J. , & Reneby, J. (2002). A note on contingent claims pricing with non-traded assets. *SSE/SFI Working Paper. Series in Economic and Finance* no. 314.

Ericsson, J., Reneby, J., & Wang, H. (2006). Can structural models price default risk? Evidence from bond and credit derivative markets. *Working Paper.* McGill University and Stockholm School of Economics .

Esperance, J.P., Ma, P.M.G., & Mohamed, A.G. (2003). Corporate debt policy of small firms: European SMEs. *Journal of Business Finance and Accounting*, 31 (5/6), 711-728.

Fama, E. F. , & French, K. R. (2002). Testing trade-off and pecking order predictions about dividends and debt. *Review of Financial Studies,* 15, 1-33.

Fan, H. , & Sundaresan, S. (2000). Debt valuation, renegotiations and optimal dividend policy. *Review of Financial Studies,* 13, 1057-1099.

Fan, J. P. H., Titman, S. , & Twite. G. (2003). An international comparision of capital structure and debt maturity choices. Australian Graduate School of Management. AFA (2005).

Philadelphia Meetings. EFA (2003) Annual Conference Paper No. 769. Available from< http> www.papers.ssrn.comisol3/ Papers .doi: cfm?abstract id=423483.

Fang, M., & Zhong, R. (2004). Default risk, firms characteristics and risk shifting. *Yale ICF Working Pape*r No.(04), 21 .

Finger, C., & Stamicar, R. (2005).Incorporating equity derivatives into the credit grades model. *Working Paper.* Risk Metrics Group .

Frank, M. Z., & Goyal, V. K. (2004). Capital structure decisions: Which factors are reliably important? EFA (2004) Maastricht Meetings Paper No. 2464. *Tuck Contemporary Corporate Finance Issues Ill Conference Paper*. Available from <http:llpapers.ssrn.comlsol3lpapers.cfm?abstract doi: id=567650

Friend, I., & Lang, Larry, H. P. (1988). An empirical test of the impact of managerial self-interest on corporate capital structure. *Journal of Finance, 43(2),* 271-181.

Friend. I., & Hasbrouck, J. (1988). Determinants of capital structure. In Chen. Andy (Eds.). *Research in finance,* 1-19. New York: JAI Press Inc.

Frydenberg, S. (2003). A dynamic model of corporate capital structure. Department of Busines Administration, Seer-Trondelag University College.

Galai, D., & Masulis, R. W. (1976). The option pricing model and the risk factor of stock. *Journal of Financial Economics,* 3(53),81-39.

Gangadhar, V. (1989). Capital Structure Trend in Indian Corporate sector. *Indian Journal of Commerce,* 33(123), 1-10

Garg, S. B. (1988). Optimum capital structure: theory and the Indian experience. M. Phil Dissertation: Department of Economics, Delhi: University of Delhi.

Gavin, Cassar., & Scott, Holmes. (2003). Capital structure and financing SMEs: Australian evidence. *Accounting and Finance,* 123-147.

George, Darren., & Paul, Mallery. (2009). *SPSS for Windows: 8 th ed*. New Delhi: Dorling Kindersley India Pvt. Ltd.

Gitmen, Lawrence. J. (2001). *Principles of managerial Finance* : *9th ed.* Pahadgunj, Delhi: Singapore pvt.ltd. Indian branch, Pearson education inc./Addison Wesley longman.

Graham, J., & Harvey. C. (2001). The theory and practice of corporate finance: Evidence from the field*. Journal of Financial Economics,* 60, 187-243.

Granger, C.W.J. (1969). Investigating casual relations by econometric models and cross spectral methods. *Econometrica*, 37, January, 24-36. As coated Maddala, G.S. (2001). *Introduction to Econometrics*. 379.

Gujrati, Damodar. (2003). *Basic Econometrics: 4th ed*. New Deli: Tata McGraw-hill Publishing Company Limited.

Gupta, M.C. (1969). The effect of size, growth and industry on the financial structure of manufacturing companies. *Journal of Finance, 24(3), 517-529.*

Gupta, S. L. (1990). Capital structure decision, a comparative study of general engineering and cotton textile industries. M. Phil. Dissertation: Department of Commerce. Delhi School of Economics. University of Delhi.

Gupta, Sontosh, (2005). *Research Methodology and Statistical Techniques.* New Delhi: Deep and Deep Publication Pvt. Ltd.

Haas, R. D. , &. Peeters. M. (2006). The dynamic adjustment towards target capital structures of firms in transition economies. *Economics of Transition,* 14(1), 133-169.

Hall, G. C., Hutchinson, P. J. , & Michaels, N. (2004). Determinants of capital structure of European SMEs. *Journal of Business Finance & Accounting,* 31(5), 11-28.

Hampton, J.J. (1990). *Financial Decision Making : Concepts problems and cases 4th ed.* New Delhi: Prentice hall of India Pvt. Ltd.

Hampton, J.J. (1998) .*Financial decision making.* New Delhi*:* Prentice hall of India Pvt. Ltd.

Hampton, J.J. (1999) .*Financial decision making.* New Delhi*:* Printice hall of India Pvt.Ltd.

Harris, M., & Raviv, A. (1991). The Theory of Capital Structure. *Journal o/ Finance,* 49, 297-355.

Harris, M. L , & Raviv. A. (1990). Capital structure and informational role of debt. *Journal of Finance, 45(2),.297-355.*

Haung, S. G. H. , & Song, F. M. (2002). The determinants of capital structure: Evidence from china. Hong Kong Institute of Economics and Business Strategy. *Working Paper*. Available from <http>www.np: /!papers.ssrn.coml sol3lpapers. cfm? abstract doi:id =320088>

Hirota, S. (1999). Are corporate financing decisions different in Japan? An empirical study on capital structure. *Journal of the Japanese and International Economies,* 13, 201-229.

Hjalmarsson, Erik. and Österholm, Pär. (2007). International Monetary Fund, Working Paper/07/141 IMF Working Paper. Western Hemisphere Division.

Hogan, S., Jarrow, R., Teo, M. , & Warachka, M. (2004). Testing market efficiency using statistical arbitrage with applications to momentum and value strategies. *Journal of Financial Economics*, 73, 525-565.

Hovakimian, A., Hovakimian, G., & Tehranian, H. (2004). Determinants of target capital structure: The case of dual debt and equity issues. *Journal of Financial Economics*, 71, 517-540.

Hovakimian. A., Opler, T., & Titman, S. (2001). The debt-equity choice. *Journal of Financial and Quantitative analysis,* 36, 1-24.

http://www.investorwords.com factor analysis.15V 2011 may 28 6.30pm.

Hull, J., Predescu, M., & White, A. (2004). The relationship between credit default swap spreads, bond yields, and credit rating announcements. *Journal of Banking and Finance,* 28, 2789-2811.

Hussain, Q. (1995). Implications of foreign capital inflows and shareholder concentration on financial sector: A case study of Indonesia. Sweden: School of Economics and Law, University of Gothenburg.

IMF, (2007). International Monetary Fund. WP/07/141IMF Working Paper. Western Hemisphere Division.

Ishola, Rufus, Akintoye. (2008). Sensitivity of performance to capital structure. *European Journal of Social Science. N*igeria*:* 7 (1) ,23-24.

James, H .Scott, (1976). A Theory of Optimal Capital Structure. *Bell Journal of Economics,* 7(1) (Spring), 50.

Jensen, F.E. , & Langemeier, N. (1996). Optimal leverage with risk aversion: empirical Evidence. *Agricultural Finance Review*, 56, 85-97.

Jensen, G.H., Solberg, D.P., & Zorn, T.S. (1992). Simultaneous determination of insider ownership, debt and dividend policies. *Journal of Financial Quantitative Analysis,* 27, 247-261.

Jensen, M., & Meckling, W. (1976). Theory of the firm: managerial behaviour agency cost and ownership structure. *Journal of Financial Economics*,. 43, 271-81.

Jensen, M.C. (1986). Agency cost of free cash flow, corporate finance and takeovers. *American Economic Review*, 76, 323-339.

Johansen, S. & Juselius, K. (1990). Maximum Likelihood Estimation and Inference on Co integration with Application to the Demand for Money. *Oxford Bulletin of Economics and Statistics* . 52, 169-209.

Jordan, J. Lowe, J. , & Taylor, P. (1998). Strategy and financial policy in UK small firms. *Journal of Business Finance and Accounting*, 25 (I), 1-27.

Ju, N., & Ou-Yang, H. (2006). Asset substitution and underinvestment: A dynamic view., *Working Paper.* Hong Kong University of Science and Technology.

Kale, K.M. , & Walking, R..A. (1996). The Impact of Industry Classification on Financial Research. *Journal of Financial and Quantitative Analysis.*.31, 309-355.

Karki, Yagya Bahadur. (2002).Review and Situation Analysis for Comprehensive National Tobacco Control in Nepal. A Project Report, WHO, Regional office South Asia, New Delhi: WHO. 14-15

KC, Biiay Kumar. (1994). *The Financing of Corporate Growth: A Case Study of Nepal*, An Unpublished Ph.D. Thesis, Delhi: Faculty of Management. University of Delhi.

Keown, M. , & Petty, S. (1998.) *Foundation of Finance,* New Delhi: Prentice Hall of India Pvt.Ltd.

Kerlinger, Fred N, & Howard, B. Lee. (2000). *Foundations of Behavioural Research* ,4th ed., New York :Harcourt College Publisher.

Khan, M.Y. , & Jain, P.K. (1998). *Financial Management: Text and Problems*, second edition . New Delhi:Tata Mc Graw hill publishing company Ltd.

Kim, E. Han. (1978). A Mean-variance Theory of Optimal Capital Structure and Corporate Debt Capacity. *Journal of Finance,* 33(1) (Mar), 45.-60

Kim, W. S. , & E. H., Sorenson. (1986). Evidence on the impact of agency costs of debt on corporate debt policy. *Journal of Financial and Quantitative Analysis,* 21, 13 1-144.

Kolf, Robert, W. (1988). *Principle of Finance* ,Boston. USA:, Foresman and Company.

Kothari, C.R.(2009). *Research Methodology : Methods and Techniques 2nd ed*., New Delhi: New age International Publishers Pvt. Ltd.

Kumar, Ranjit (2006). *Research Methodology.* Australlia: *Pearson Education.*

Kumar, R. (2008). *Research Methodology: A step by step guide for beginners*,
Delhi: Pearson Education.

Koutsoyiannis, A. (1979). *Theory of Econometrics, 2nd ed*. London: The Macmillian Press Ltd.

Lando, D. (2004). *Credit Risk Modeling: Theory and Applications*, (N.P.).Princeton University Press.

Lando, D. , & Mortensen, A. (2005). Revisiting the slope of the credit curve. *Journal of Investment Management* 3(4), 6-32.

Leland, H., & Pyle, D.(1977). Information Asymmetric, Financial Structures and financial intermediation. *Journal of Finance*, 32(2) (May), 371-388.

Leland, H. E. (1998). Agency costs, risk management, and capital structure. *The Journal of Finance,* 53(4), 1213-1243.

Leland, H. E. (2004). Predictions of default probabilities in structural models of debt. *Journal of Investment Management,* 2(2), 40.

Leland, H. E. , & Toft, K. B. (1996). Optimal capital structure, endogenous bankruptcy, and the term structure of credit spreads. *The Journal of Finance,* 51(3), 987-1019.

Lev, B. (1987). On the Association between operating leverage and Risk. *Journal of Financial and Quantitative Analysis*, 627-641.

Levin, Richard. I. & Rabin, David S.(2005). *Statistics for Management*. Singapore: Pearson education and Singapore Pvt. Ltd.

Li, W. (2005). ***Cronbach's α, Revelle's β, and McDonald's ωH***: There relations with each other and two alternative conceptualizations of reliability. The Netherlands: *Psychometrika, 70,* 123-133.

Long, M., & Maliz, I. (1986). *Investment pattern and financial leverage in corporate capital structure in the United States. In (eds)*. M. Beniamin Freidman. Chicago: 325-352.

Longstaf, F. A., Mithal, S. , & Neis, E. (2005). Corporate yield spreads: Default risk or liquidity? New evidence from the credit default swap market., *The Journal of Finance,* 60(5), 2213-2253.

Lowe, J., Naughton, T. , & Taylor, P. (1994). The impact of corporate strategy on the capital structure of Australian companies. *Managerial and Decision Economics,* 15, 245-257.

Maddala, G.S, (2002). *Introduction to econometrics: 3 rd ed*, Chichester & Singapore: John Willey and Sons Ltd.

Mall, E. M. (1987). Trends in capital structure of medium and large Private Limited Companies. *Chartered Accountant, 36(6),* 327-351.

Mandelker, G.N., , & Rhee, S.G. (1984). The Impact of the Degrees of Operating and Financial Leverage on Systematic Risk of Common Stock. *Journal of Financial and Quantitative Analysis*, (March),45-57.

Marsh, P. (1982). The choice between debt and equity: An empirical study. *Journal of Finance, 37,* 124-144

Martin. J. D. (1988). *The theory of finance; Evidence and application.* Chicago: The Dryden Press.

Marx, Karl. (1986). *Capital Volume 2.* Moscow: Progress publishers.

Masulis, R.W. (1983). The Impact of Capital Structure Change on Firm Value: Some Estimates. *Journal of Finance,* 38, (March) , 107-126.

Matta, N.S. (1984). Study of the Pattern of Corporate, Financial Structure in India: A cross section Analysis of Selected Manufacturing Industry, An Unpublished Ph.D. Thesis, Delhi: Faculty of Management, University of Delhi.

McDonald. (1999, Zinbarg, R. E., Revelle, W., Yovel, I., & *Li, W. (2005).* Cronbach's α, Revelle's β, and McDonald's ωH: There relations with each other and two alternative conceptualizations of reliability. *Psychometrika, The Netherlands :70, 123-133.*

Michael, C. Jensen, & Willam, H. Meckling. (1976). Theory of the Firm: Managerial Behaviour agency costs and Ownership Structure. Harvard business school, Harvard university press, Buston: *Journal of Financial Economics*,3(4)(Oct), 305-360.

Michaelas, N., Chittenden, F. , & Poutziouns, P. (1999). Financial policy and capital structure choice SMEs: empirical evidence from company panel data. *Small Business Economics*, 12, 113-130.

Miller, M. H., & Modigliani F. (1966). Some estimates of the cost of capital to the electric utility industry. *American Economic Review, 5 (6 2) ,* 333-391.

Mishra, G. D. (1978). Impact of the Corporate Income Tax on Capital Structure. *Eastern Economist,* 71 (6), 258-264.

Mitchell, M. , & Pulvino, T. (2001). Characteristics of risk and return in risk arbitrage, *The Journal of Finance,* 56(6), 2135-2175.

Mitchell, M., Pulvino, T., & Stanford, E. (2002). Limited arbitrage in equity markets. *The Journal of Finance,* 57(2), 551-584.

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

Modigliani, F. , & Miller, M. H. (1963). Corporate income taxes and the cost of capital : a correction. *American Economic Review*, 53(3), 433-43.

Munro, J.W. (1996). Convertible debt financing: an empirical analysis. *Journal of Business Finance and Accounting,* 23, 319-334.

Myer, J.N. (1972). *Financial Statements Analysis: 4th Ed.* New Delhi: Prentice hall of India pvt.Ltd.4th ed.

Myers, S. C. (1984). The capital structure puzzle. *Journal of Finance*, 39(3), 575-592.

Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics,* 13,187- 221.

Norden, L. , & Weber, M. (2004). Information efficiency of credit default swap and stock markets: The impact of credit rating announcements. *Journal of Banking and Finance,* 28, 2813-2843.

Norton, E. (1991). Factors affecting capital structure decisions. *The Financial Review,* 26(3), 431-446.

Oberoi, Nash K. (1979). Study on capital structure of Indian companies with special reference to general engineering industry. M. Phil. Dissertation: Department of Management ,University of Delhi.

P.D. Allison. (1999). *Logistic Regression Using the SAS System*,(n.p.) SAS Institute.

Padran, Y. G., Apolinaria, R. M. , & Santan, O. M. (2005). Determinant factors of leverage: An empirical analysis of Spanish corporations. *Journal of Risk Finance,* 6(1), 60-68.

Panday, I. M. (1986). *Financial Management.* New Delhi: Vikash Publishing House.

Panday, I.M. (1999). *Financial Management.* New Delhi: Vikash Publishing House.

Pandey, I. M. (1976). Capital structure and the costs of capital, PhD Thesis: Department of commerce, University of Delhi.

Pandey, I. M. (1981). *Capital Structure and the Cost of Capital.* New Delhi: Vikash Publishing House Pvt. Ltd.

Pandey, I. M. (2001). Capital structure and the firm characteristics: Evidence from the emerging market emerging market. Indian Institute of management. Amhedabad: IIMA *Working Paper* .2001-10-04.

Pandey, I.M, Choti, Feat· T., & Rana, M. K. (2000). Capital structure choices in an emerging capital market: Case of Thailand. *Management and change,* 4(1), 35-59.

Pandey, I.M. (1979). The Effect of Liquidity Structure and Leverage on the Cost of Equity of a Development Finance Institutions: A case study of India. *Chartered Accountant,* 27(10), 922-928.

Pandey, I.M. (1985). The Financial Leverage in India. *Indian Management*, 24, 21-34.

Panta, P.R. (2009). *Social science research and thesis writing*. Kathmandu: Buddha Academic Publishers and Distributors.

Parrino, R., & Weisbach, M. S. (1999). Measuring investment distortions arising from stockholder-bondholder conflicts. *Journal of Financial Economics,* 53, 3-42.

Paudel, R. B. (1994). Industrial finance in Nepal, PhD Thesis. Faculty of Management. Kirtipur: Tribhuvan University.

Pradhan, R. A. (2003b). A survey of dividend Policy and practices of Nepalese Enterprises. In R.S. Pradhan (Eds.). *Research in Nepalese Finance,* Kathmandu: Buddha Academic Publishers and distributors.

Pradhan, R. S.(Eds.) (2003a). A comparison of financial management practices in Nepal among government owned, publicly traded and privately held firms. Kathmandu: *Research in Nepalese finance*. Buddha Academic Publishers and distributors. 33-57

Predescu, M. (2005). The performance of structural models of default for firms with liquid CDS spreads. *Working Paper*, Rotman School of Management press.

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

Rao, N. S., & Lukeso, J. (2002). An empirical study on the determinants of the capital structure of listed Indian firms. Indian Institute of Technology, Bombay: Shailesh J. Mehta School *of* Management Institute for Financial Management.

Reddy, Shreenath, K., Gupta,& Prakash, C. (2002). *Report on Tobacco Control in India.* New Delhi: Ministry of Health and Family Welfare, Government of India.

Robert, A., Haugen, & Lemma, W., Sunbet. (1978). The Insignificance of Bankruptcy Costs to the Theory of Optimal Capital Structure. *Journal of Finance*, 33(2) (May), 392.

Ross, S. (1977). The determinants of financial structure: the incentive signaling approach. *Bell Journal of Economics*, 8, 23- 40.

Schaefer, S. M. , & Strebulaev, I. (2004). Structural models of credit risk are useful: Evidence from hedge ratios on corporate bonds. *Working Paper*, London Business School.

Schall, Lawrence, D., & Haley, Charles, W. (1983). *Introduction to financial management*, 2nd ed. New York: Mc Graw Hill Book Co.

Sharma, L. V., L. N., & Rao., K. S .H. (1969). Leverage and the value of firm. *Journal of Finance,* 24(4), *673-677.*

Sharma, S. K. (1995). Determinants of corporate capital structure: An empirical analysis of selected manufacturing industries in India. PhD. Dissertation: University of Delhi.

Shenov, C., & Koch. P.D. (1996). The firms leverage and cash flow relationship. *Journal of Empirical Finance, 307-331.*

Shrestha, M. K. (1983). Financing of public enterprises in Nepal: A study with special references to financial planning in public utilities. PhD Thesis: Faculty of Management. Delhi University.

Shrestha, M. K. (1985). Analysis of capital structure in selected public enterprises. *Prashasan: The Nepalese Journal of Public Administration. 16(2), 42-53.*

Shrestha, Manohar Krishna. (1988). Measuring the Cost of Capital in Selected Public -Enterprises in Nepal. *The Nepalese Management Review*, 7(1), 42-52.

Shyam, Sunder, L. , & Myers, S. C. (1999). Testing static tradeoff against pecking order models of capital structure. *Journal of Financial Economics*, 51, 219-244.

Sinha, S. (1992). Inter industry variation in capital structure in India. *Indian Journal of Finance and Research,* 2(2), 15- 16.

Skorecki, A. (2004) .Hedge funds .ll a strategy gap., *Finacial Times* (July 21),43.

Solomon, Ezra. (1963). *The Theory of Financial Management.* New York: Columbia University.

Stanley, B., Block , & Geoffery, A., Hirt. (1992). *Fundamental of financial Management: 6th ed*., Boston USA: Irwin.

Stephen, Ross. (1977). The Determinant of Financial Structure: The Incentive Signalling Approach. *Bell Journal of Economics, 8,(1)* (Spring)), 23-40.

Stewart, C. Myers, & Gerald, A. Pogue .(1974). A Programming Approach to Corporate Financial Management. *Journal of Finance, 29*,(2) (May), 589.

Stiglitz, J. (1974). On irrelevance of corporate financial policy. *American Economic Review: 2,* 851-866.

Stohs, M. H., & Mauer, D. C. (1996) .The determinants of corporate debt maturity structure. *The Journal of Business,* 69(3), 279-312.

Taub, A. J. (1974). Determinants of the firm's capital structure. *Review of Economics and Statistics,* 57(4), 945-976.

Thies, C.F., & Klock, M.S. (1992). Determinants of capital structure. *Review of Financial Economics,* 1, 40-52.

Titnian, S., & Wessel, R. (1988). The determinants of capital structure choice. *Journal of Finance, 43(1), 1*-19.

Toy, N., StonehilI, A., Remmers, L., Wright, R. & Beekhuisen, T. (1974). A comparative international study of growth profitability and risk as determinants of corporate debt ratios in the manufacturing sector. *Journal of Financial and Quantitative Analysis,* 9, 875-886.

Upadhaya, K.M. (1985). *Financial Management.* New Delhi: Kalayani Publisher.

Vanhorne, J.C. (1991). *Financial management and policy,* New Delhi: Printice hall of India.

Vanhorne, J.C. (2000). *Financial management and policy:11th ed.* New Delhi: Prentice hall of India

Vassalou, M., & Xing, Y. (2004). Default risk in equity returns. *The Journal of Finance*, 59(2), 831-868.

Venkatesor. S. (1983). Determinants of financial leverage: Am empirical extension. *Chartered Accountant,* 31(7), 519-527.

Lee,W. Y., & Banker, H.H. (1977). Bankruptcy Costs and the Firm's Optimal Dept Capacity: A Positive Theory of Capital Structure. *Southern Economics Journal, 43.*

Wald, J.K. (1999). How firm characteristics affect capital structure: an international comparison?. *Journal of Financial Research, 22.* 161-187.

Wedig, G, Sloan, F.A., Hassan, M., & Morrisey, M.A. (1988). Capital structure ownership and capital payment policy: the case of hospitals. *Journal of Finance, 43(* 1), 21-40.

Weston, J. Fred, & Copeland, Thomas E. (1992). *Managerial Finance* . Florida, USA: The Dryden press.

Weston, J. F. (1963). A text of cost of capital: A review article. *Southern Economic Journal, 30(2),* 107-112.

Williams, J. (1987). Perquisites risk and capital structure. *Journal of Finance, 42*, 29-49.

Wolff, Howard K., & Pant, Prem R. (2002). *A Hand Book for Social Science Research and Thesis Writing.* Kathmandu: Buddha Academic Publishers , & Distributor Pvt. Ltd.

Yu, F. (2006). How profitable is capital structure arbitrage?. *Financial Analysts Journal,* 62(5), 47-62.

Zuckerman, G. (2005). Hedge funds stumble even when walking conservative. Wagers turn sour, leading to fears of a shakeout; a one-two punch on a GM bet. *The Wall Street Journal,* (May 18), 1-10

Zumbo, B.D. (2007). Validity: Foundational Issues and Statistical Methodology. In C.R. Rao and S. Sinharay (Eds.). *Handbook of Statistics.* The Netherlands*: Elsevier Science B.V. 26,* 45-79.

Websites:

<http>//www.wikipedia.org

<http>//www.janakifm.org.np

<http>//www.jaws.org.np

<http>//www.who.int/tobacco.com

<http>//www.gatt.org

<http>//www.snpl.com.np

<http>//www.itcportal.com.

<http>//www.godfreyphilips.com

<http>//www.wto.org.

<http>//www.who.org.

<http>//www.investorwords.com/7283/factor_analysis.htm

<http> www.sas.com.

<http>//www.imf.com.

<http> www.defaultrisk.com.

<http>www.papers.ssrn.comisol3/Papers.doi:cfm?abstractid=423483

<http>www.np: /!papers.ssrn.coml sol3lpapers. cfm? abstract doi:id =320088>

<http>www.uniraj.ac.in

Appendices

Appendix 1

Condence and Summarised Balance Sheet of Indian Tobacco Company.Ltd (ITC). up to 2009

{Rs.00000}

Years / Particulars	2,000	2,001	2,002	2,003	2,004	2,005	2,006	2,007	2,008	2,009
Equity Capital:										
Share Capital	24541	24541	24751	24751	24768	24943	37552	37622	37686	37744
Preference Capital										
Retained Earning	255392	328910	416647	511811	616238	764618	868596	1006086	1168081	1335764
Sub Total	**279933**	353451	441398	536562	641006	789561	906148	1043708	1205767	1373508
Deferred Tax			13546	6358	8774	37709	32476	47285	54507	86719
Debt capital										
Long term Debt :										
Bank and Financial Institution	46392	56577	19924	4652	3156	8869	3367	6078	557	1163
Govt Loan										
Bank or Term Loan										
Other loan/ P.F.										
Unsecured loan	18895	29317	8530	7046	8929	15667	8606	14010	20886	16592
Sub total	**65287**	85894	28454	11698	12085	24536	11973	20088	21443	17755
Short term loan :										
Short term bank Loan										
Current Liabilities	113791	125842	163438	209350	284983	192564	218903	238475	278697	296452
Provisions	34977	34326	49613	62688	68288	110818	138904	147284	164533	174049
Sub Total	148768	160168	213051	272038	353271	303382	357807	385759	443230	470501
Total Capital	493988	599513	696449	826656	1015136	1155188	1308404	1496840	1724947	1948483

Appendix 1

Condence and Summarised Balance Sheet of Indian Tobacco Company.Ltd (ITC). up to 2009

{Rs.00000}

Years / Particulars	2,000	2,001	2,002	2,003	2,004	2,005	2,006	2,007	2,008	2,009
Assets										
Fixed Asssets:										
Gross Block	187113	252193	369458	425219	474094	574627	622717	713431	895970	1055865
Less: Depreciation	59225	70742	110190	124564	144263	179551	206544	238954	279087	328674
Net Block	127888	181451	259268	300655	329831	395076	416173	474477	616883	727191
Capital WIP	27436	14615	38727	16342	31374	18615	24340	86614	112682	121406
Investements	98726	100694	90693	160886	305396	387568	351701	306777	293455	283775
P.F. Investements										
Current Assets:										
Inventory	93246	114463	118027	125222	153421	200299	263629	335403	405052	459972
Debtors	11511	10283	18430	20674	23015	52776	54796	63669	73693	66867
Advance Payments										
Loan and Advance	62774	104831	91315	83559	86977	81036	97503	121580	151550	164498
Other current assets	69634	69635	75568	81434	81718	14252	14680	18304	14607	21535
Cash and bank Balance	2773	3541	4421	37884	3404	5566	85582	90016	57025	103239
Sub Total	239938	302753	307761	348773	348535	353929	516190	628972	701927	816111
Total Assets	493988	599513	696449	826656	1015136	1155188	1308404	1496840	1724947	1948483
Net worth per share	76	96	118.9	144.5	172.5	211	241.3	277.4	320	363.9
Debt equity Ratio	0.23:1	0.24:1	0.06:1	0.02:1	0.02:1	0.03:1	0.01:1	0.02:1	0.02:1	0.01:1
No of share	24541	24541	24541	24751	24768	24822	37552	37622	37686	37744
Cash flow Statements										
Operating Cash flow	107841	99101	176954	191404	189327	185120	192968	214119	272296	327903
Investing Cashflow	-31003	-85851	-71159	-103879	-179129	-143895	-17531	-108278	-103678	-126074
Financing Cashflow	-91143	-12499	-104919	-54119	-44664	-41709	-95421	-101407	-131609	155615

Note:Retained Earning included Pl A/C Profit and Reserves made by the company and Data is rearrange in nearest rupee.

Appendix 2

Condence and Summarised Balance sheet of Godfrey Philips India Ltd.(GPI) up to 2009

{Rs.00000}

Years / Particulars	2,000	2,001	2,002	2,003	2,004	2,005	2,006	2,007	2,008	2,009
Equity Capital :										
Share Capital	1040	1040	1040	1040	1040	1040	1040	1040	1040	1040
Preference Capital										
Retained Earning	17735	20557	23130	24926	27910	31661	35566	41421	50814	56805
Sub Total	**18775**	21597	24170	25966	28950	32701	36606	42461	51854	57845
Deferred Tax					952		467	447	259	
Minority interest								4	316	
Debt capital:										
Long term Debt :										
Bank and Financial Institution	60	842	465	2336	537	5920	7439	6073	10338	9529
Govt Loan										
Bank or Term Loan										
Other loan/ P.F.										
Unsecured loan										
Sub total	**60**	842	465	2336	537	5920	7439	6073	10338	9529
Short term loan :										
Short term bank Loan	3890	4669	3565	973	1532	303	4			
Current Liabilities	4411	5267	5697	8441	9953	12072	10432	9747	17612	23680
Provisions	2364	2685	3074	3477	3319	4284	4915	5633	6840	6738
Sub Total	10665	12621	12336	12891	14804	16659	15351	15380	24452	30418
Total Capital	29500	35060	36971	41193	45243	55280	59863	64365	87219	97792

Appendix 2

Condence and Summarised Balance sheet of Godfrey Philips India Ltd.(GPI) up to 2009 **{Rs.00000}**

Years / Particulars	2,000	2,001	2,002	2,003	2,004	2,005	2,006	2,007	2,008	2,009
Assets										
Fixed Asssets:										
Gross Block	8444	10722	11312	12803	13721	20128	28162	29739	31722	35221
Less: Depreciation	3137	3808	4579	5438	6313	7855	11645	13430	15186	15411
Net Block	5308	6914	6734	7365	7408	12273	16517	16309	16536	19810
Capital WIP	1076	74	304	48	1323	647	290	845	2226	6170
Investements	7722	8080	12873	15635	14473	19916	21112	24579	33596	20981
P.F. Investements										
Deffered tax assets			-221	797	2191	1576				236
Preliminery expenses written off									3	
Current Assets:										
Inventory	10949	12729	10053	10354	12488	12783	15277	15424	24143	36447
Debtors	462	546	196	1162	1260	251	1160	1573	2306	3035
Advance Payments										
Loan and Advance	3056	5926	6246	4158	5372	7302	4807	4090	7446	9347
Other current assets	51	53	29	37	46	12	15	13	12	
Cash and bank Balance	876	738	757	1637	682	520	685	1532	951	1766
Sub Total	15394	19992	17281	17348	19848	20868	21944	22632	34858	50595
Total Assets	29500	35060	36971	41193	45243	55280	59863	64365	87219	97792
Net worth per share	76	96	118.9	144.5	172.5	211	241.3	277.4	320	363.9
Debt equity Ratio	0.23:1	0.24:1	0.06:1	0.02:1	0.02:1	0.03:1	0.01:1	0.02:1	0.02:1	0.01:1
Cash Flow Statements:										
Operating Cash flow	9574	2311	9255	7149	2784	8588	4634	8404	7467	4994
Investing Cashflow	-5391	-1841	-5528	-3257	-265	-12258	-2702	-3357	-9339	1969
Financing Cashflow	-3823	-608	-3708	-2989	-3455	2006	-1794	-4289	1261	-6018

Note:Retained Earning included Pl a c Profit and reserve made by the company and Data is rearrange in nearest rupee.

Appendix 3

Condensed and Summarized Balance Sheet of Janakpur Ciggarate Factory up to 2065/066 (2009)

{Rs.000}

Years / Particulars	055/056 (1999)	2,000	2,001	2,002	2,003	2,004	2,005	2,006	2,007	2,008	2,009
Equity Capital											
Share Capital	40,837	40,837	40,837	40,837	40,837	40,837	40,837	40,837	40,837	40,837	40,837
Preference Capital											
Retained Earning	65,894	81,101	144,144	148,220	151,059	153,155	150,044	133,014	54,483	54,483	54,483
Sub Total	**106,731**	121,938	184,981	189,057	191,896	193,992	190,881	173,851	95,320	95,320	95,320
Deferred Tax											
Debt capital											
Long term Debt :											
Bank and Financial Institution	123,023	122,796	72,830	44,733	67,512	88,094	65,558	89,670	47,012	259,406	328,104
Govt Loan											
Bank or Term Loan											
Other loan/ P.F.	66,157	61,875	71,489	68,588	69,232	64,087	65,588	65,442	65,308	60,013	72,438
Unsecured loan											
Sub total	**189,180**	**184,671**	**144,319**	**113,321**	**136,744**	**152,181**	**131,146**	**155,112**	**112,320**	**319,419**	**400,542**
Short term loan :											
Short term bank Loan											
Current Liabilities	203,526	200,945	206,274	196,244	184,055	140,926	124,822	107,736	254,900	204,306	224,931
Provisions	41,606	43,189	54,095	68,010	78,558	88,031	62,009	28,575	26,396	26,396	26,396
Sub Total	**245,132**	244,134	260,369	264,254	262,613	228,957	186,831	136,311	281,296	230,702	251,327
Total Capital	**541,043**	550,743	589,669	566,632	591,253	575,130	508,858	465,274	488,936	645,441	747,189

Appendix 3

Condensed and Summarized Balance Sheet of Janakpur Ciggarate Factory up to 2065/066 (2009)

{Rs.000}

Years / Particulars	055/056 (1999)	2,000	2,001	2,002	2,003	2,004	2,005	2,006	2,007	2,008	2,009
Assets											
Fixed Assets:											
Gross Block	240,521	241,915	242,234	246,721	247,367	252,113	255,615	264,897	270,067	268,759	275,157
Less: Depreciation	168,597	175,462	181,625	188,506	195,617	205,442	209,250	215,675	220,109	222,926	227,087
Net Block	71,924	66,453	60,609	58,215	51,750	46,671	46,365	49,222	49,958	45,833	48,070
Capital WIP									50,201	199,698	350,143
Investments	49,515	49,515	49,515	49,515	49,515	49,515	49,515	49,515	49,514	49,514	49,515
P.F. Investments	66,157	61,857	71,489	68,001	68,670	63,743	69,915	56,755	50,200	32,100	19,200
Current Assets:											
Inventory	127,609	155,421	153,012	169,944	178,989	154,652	143,075	115,292	117,565	102,240	118,254
Debtors	72,438	69,110	57,927	50,416	39,960	52,855	48,906	54,426	49,737	71,050	71,301
Advance Payments	54,160	57,584	60,812	68,974	74,643	80,727	37,390	27,752	6,842	6,855	11,308
Loan and Advance	57,386	47,828	63,838	74,682	71,802	75,709	65,755	68,929	67,043	69,992	61,401
Other current assets											
Cash and bank Balance	41,854	42,975	72,467	26,885	55,924	51,258	47,937	43,383	47,876	68,159	17,997
Sub Total	353,447	372,918	408,056	390,901	421,318	415,201	343,063	309,782	289,063	318,296	280,261
Total Assets	**541,043**	**550,743**	**589,669**	**566,632**	**591,253**	**575,130**	**508,858**	**465,274**	**488,936**	**645,441**	**747,189**
Net worth per share	1.77	1.51	0.78	0.60	0.71	0.78	0.69	0.89	1.18	3.35	4.20
no of share	40,837	40,837	40,837	40,837	40,837	40,837	40,837	40,837	40,837	40,837	40,837
Cash flow Statements											
Operating Cash flow		1,808	77,201	(16,237)	4,762	(25,365)	19,152	71391	44,002	(208,520)	un audited
Investing Cashflow		(460)	2,256	1,199	825	5,262	(1,439)	(3,471.00)	3,284	2,171	un audited
Financing Cashflow		1,121	29,492	(30,998)	23,423	15,437	(21,035)	23,965	(42,791)	207,099	un audited

Note:Retained Earning included Pl a c Profit and reserve made by the company and Data is rearrange in nearest rupee.

Appendix 4

Condence and Summarised Balance sheet of Surya Nepal Pvt.Ltd. up to 2065/066 (2009)

{Rs.000}

Years / Particulars	055/056 (1999)	2,000.00	2,001	2,002	2,003	2,004	2,005	2,006	2,007	2,008	2,009
Equity Capital											
Share Capital	56,000	56,000	56,000	56,000	56,000	336,000	336,000	336,000	336,000	336,000	2,016,000
Preference Capital											
Retained Earning	668,975	764,835	882,537	1,029,808	1,215,600	1,169,961	1,473,109	1,769,389	2,174,302	2,354,357	236,857
Sub Total	724,975	820,835	938,537	1,085,808	1,271,600	1,505,961	1,809,109	2,105,389	2,510,302	2,690,357	2,252,857
Deferred Tax											
Debt capital											
Long term Debt :											
Bank and Financial Institut	216,593	148,992	205,906	4,414							
Govt Loan											
Bank or Term Loan											
Other loan/ P.F.											
Unsecured loan											
Sub total	**216,593**	**148,992**	**205,906**	**4,414**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Short term loan :											
Short term bank Loan				1,942	7,140	2,890	1,830				
Current Liabilities	226,160	136,172	141,082	165,085	219,943	266,498	305,590	382,002	471,468	373,805	730,819
Provisions	78,787	81,087	139,066	186,368	302,323	371,811	187,005	337,383	519,563	1,058,928	2,079,867
Sub Total	**304,947**	**217,259**	**280,148**	**353,395**	**529,406**	**641,199**	**494,425**	**719,385**	**991,031**	**1,432,733**	**2,810,686**
Total Capital	**1,246,515**	**1,187,086**	**1,424,591**	**1,443,617**	**1,801,006**	**2,147,160**	**2,303,534**	**2,824,774**	**3,501,333**	**4,123,090**	**5,063,543**

Appendix 4

Condence and Summarised Balance sheet of Surya Nepal Pvt.Ltd. up to 2065/066 (2009)

Years / Particulars	055/056 (1999)	2,000	2,001	2,002	2,003	2,004	2,005	2,006	2,007	2,008	2,009
Assets											
Fixed Asssets:											
Gross Block	1,215,089	1,252,795	1,272,382	1,357,757	1,454,404	1,603,021	1,811,244	1,883,174	1,955,093	2,024,170	2,902,916
Less: Depreciation	322,737	403,533	464,304	530,772	604,657	706,321	789,979	902,253	1,022,347	1,101,381	1,235,149
Net Block	892,352	849,262	808,078	826,985	849,747	896,700	1,021,265	980,921	932,746	922,789	1,667,767
Capital WIP	34,405	2,319	5,339	716	220	23,693	8,363	1,526	53,591	260,229	32,447
Investements						84,250	84,250	84,250	109,982	109,882	109,882
Deffered revenue expenditure		31,545	24,618	16,492	8,366	240				26,275	16,450
P.F. Investements											
Current Assets:											
Inventory	222,464	189,294	255,224	215,131	444,732	559,844	657,513	690,062	862,299	854,909	1,104,585
Debtors	8,492	31,562	5,950	8,915	22,242	11,012	19,849	39,033	179,077	126,714	121,638
Advance Payments											
Loan and Advance	42,455	49,131	314,968	337,834	460,338	401,385	321,037	303,204	466,057	422,379	190,728
Other current assets											
Cash and bank Balance	46,347	33,973	10,414	37,544	15,361	170,036	191,257	725,778	897,581	1,399,913	1,820,046
Sub Total	319,758	303,960	586,556	599,424	942,673	1,142,277	1,189,656	1,758,077	2,405,014	2,803,915	3,236,997
Total Assets	**1,246,515**	**1,187,086**	**1,424,591**	**1,443,617**	**1,801,006**	**2,147,160**	**2,303,534**	**2,824,774**	**3,501,333**	**4,123,090**	**5,063,543**
diff	-	-	-	-	-	-	-	-	-	-	-
Net worth per share											
long Debt equity Ratio	0.2988	0.1815	0.2194	0.0041	-	-	-	-	-	-	
Debt equity Ratio	0.2988	0.1815	0.2194	0.0059	0.0056	0.0019	0.0010	-	-	-	-
NO OF SHARE	560	560	560	560	560	3,360	3,360	3,360	3,360	3,360	20,160
Cash flow Statements											
Operating Cash flow		168397	41827	438783	143875	500758	356003	748832	543536	1153745	1149270
Investing Cashflow		-55955	-60935	-112297	-143755	-264385	-227146	-88698	-123674	-249105	-557513
Financing Cashflow		-124817	-1699	-299256	-22087	-79635	-106964	-123984	-247578	-403200	-873600

Note:Retained Earning included Pl a c Profit and reserve made by the company and Data is rearrange in nearest rupee.

Appendix 5

Condence and Summarised Profit and Loss Account of Indian Tobacco Company Ltd.(ITC) up to 2009

{Rs.00000}

Years / Particulars	1,999	2,000	2,001	2,002	2,003	2,004	2,005	2,006	2,007	2,008	2,009
Gross sales	**770096**	**795306**	**867876**	**984009**	**1102428**	**1181504**	**1334958**	**1622443**	**1930004**	**2135594**	**2314353**
Less:Excise duty	406325	413389	447452	478086	515910	534460	571013	643390	713575	740841	775542
Net Sales	363771	381917	420424	505923	586518	647044	763945	979053	1216429	1394753	1538811
Less Cost of Sales/Consumed	244330	152317	149237	189042	224842	238333	276955	398323	519478	601670	644678
Gross Profit	119441	229600	271187	316881	361676	408711	486990	580730	696951	793083	894133
Add:other income		11631	13735	14235	16959	22488	23581	28608	33649	61090	53493
Less:Manufacturing,selling &dist.exp		95228	102407	126554	146298	172652	207734	247992	301310	352689	408279
Less Administrative exoenses											
Operating Profit (EBIT)	**104032**	**146003**	**182515**	**204562**	**232337**	**258547**	**302837**	**361346**	**429290**	**501484**	**539347**
Less Interest		11255	8491	6691	2984	2479	4243	1193	328	461	1832
Less Depreciation		11853	13994	19845	23734	24162	31287	33234	36292	43846	54941
Less Loss on sale of Fixed Assets											
Less Other expenses											
Earning Before Tax	**93603**	**122895**	**160030**	**178026**	**205619**	**231906**	**267307**	**326919**	**392670**	**457177**	**482574**
Less:Tax Provision	31461	43651	59404	59054	68484	72621	83600	98882	122673	145167	156215
Earning after tax	62342	79244	100626	118972	137135	159285	183707	228037	269997	312010	326359
Less General Reserve		60000	70000	80000	10000	10000	110000	115000	125000	150000	150000
Proposed dividend		18406	24542	33414	37127	49536	77325	99512	116629	131901	139653
Tax on proposed dividend		4049	2503		4757	6347	10972	13958	19821	22417	23734
Staff bonus provision											
Add: Other Reserve income		470	4841	-300	500	-100	1514				
tax on staff bonus											
add Previous year profit		18786	20128	28250	32587	34388	38784	61141	52606	64753	72445
Debenture redemption reserve		-4083	300	921	-6050	-1094					
Total net profit transferred to B.S.		20128	28250	32587	34388	38784	61141	56206	64753	72445	85814
EPS basic		32.2905	41.0032	48.4789	55.4058	64.3108	74.0097	60.7257	71.7657	82.792	86.4665
NO OF SHARE		24541	24541	24541	24751	24768	24822	37552	37622	37686	37744
Eps adjusted		32.3	41	48.5	55.9	64.9	74.9	92.9	110	127.1	133
DPS Adjusted		7.5	10	13.6	15.1	20.2	31.5	40.5	47.5	53.7	56.9
Market capitalisation		18038	19987	17243	15581	25793	33433	73207	56583	77765	69751

Appendix 6

Condence and Summarised Profit and Loss Account of Godfrey Philips India Ltd.(GPI) up to 2009

{Rs.00000}

Years / Particulars	1,999	2,000	2,001	2,002	2,003	2,004	2,005	2,006	2,007	2,008	2,009
Gross sales	104717	108263	99247	94469	107734	117652	129579	143187	159677	182462	226905
Less:Excise duty	55639	57193	44375	47049	52085	55769	61021	76176	82422	94040	115637
Net Sales	49078	51070	54872	47420	55649	61883	68558	67011	77255	88422	111268
Less Cost of Sales/Consumed	24103	22305	24382	16599	20245	22526	26129	24940	27851	31103	49143
Gross Profit	24975	28765	30490	30821	35404	39357	42429	42071	49404	57319	62125
Add:other income	1532	1145	1191	1533	1905	2567	2968	1661	3167	6570	5540
Less:Manufacturing,selling &dist.exp	19252	22721	23556	24236	28201	32749	33165	32512	36549	42569	47687
Less Administrative exoenses											
Operating Profit (EBIT)	7255	7189	8125	8118	9108	9175	12232	11220	16022	21320	19978
Less Interest		253	119	123	195	556	572	278	292	376	586
Less Depreciation	447	551	769	811	913	945	1655	1837	2163	2247	2803
Less Loss on sale of Fixed Assets											
Less Other expenses											
Earning Before Tax	6808	6385	7237	7184	8000	7674	10005	9105	13567	18697	16589
Less:Exceptional Item					2270			864	240		
Less:Tax Provision		2200	2581	2466	2918	2873	3973	1307	4132	5367	5333
Add: deffered tax				61	1018	442	338	1984			401
Minority interest (-)/+									-1	312	
less: Frienge benefit tax								665	702	775	768
Earning after tax	4726	4185	4656	4779	3830	5243	6370	6013	8492	12867	10889
add Previous year profit		10744	12455	14377	16232	16967	18776	21064	23567	27517	35842
Available for proporation		14929	17111	19156	20062	22210	25146	27077	32059	40384	46731
Less General Reserve		800	900	1000	1100	1200	1400	1400	1500	1500	1500
Proposed dividend			1664	1924	1768	1976	2288	2340	2600	2600	2600
Tax on proposed dividend			170		227	258	321	328	442	442	442
Interim dividend		1508									
tax on staff bonus/dividend		166	170								
Total net profit transferred to B.S.		12455	15871	16232	16967	18776	21137	23009	27517	35842	42189
EPS basic		40.2404	44.7692	45.9519	36.8269	50.4135	61.25	57.8173	81.6538	123.721	104.702
NO OF SHARE		1040	1040	1040	1040	1040	1040	1040	1040	1040	1040
Eps adjusted		40.48	44.77	45.96	36.45	50.18	61.16	57.82	84.73	107.92	104.73
DPS Adjusted		14.5	16	18.5	17	19	22	22.5	25	25	25

Appendix 7

Condence and Summarised Profit and Loss Accounts of Janakpur Ciggerate Factory Ltd. (JCF) up to 2065/066, (2009)

{Rs.000}

Years / Particulars	2055/056/(1999)	2,000	2,001	2,002	2,003	2,004	2,005	2,006	2,007	2,008	2,009
Gross sales	960393	1020054	1192067	1177090	1161014	1136140	1153879	1088470	968713	961224	893390
Less:Exise duty	347714	372678	434794	461098	469489	482121	502785	452294	398357	383969	335270
Net Sales	612679	647376	757273	715992	691525	654019	651094	636176	570356	577255	558120
Less Cost of Sales/Consumed	411280	411786	467548	437168	415996	382710	361043	389705	356897	429957	428524
Gross Profit	201399	235591	289724	278824	275529	271309	290051	246471	213460	147198	129596
Add:other income	10338	7404	18130	7827	7667	9020	6115	8239	10092	9498	9460
Less:Manufacturing,selling & dist.exp	80781	75414	83120	94069	92627	93519	99126	88297	98523	104794	100014
Less Administrative exoenses	97914	114972	135638	152739	147415	156060	156631	135919	199570	182394	161535
Operating Profit(EBIT)	33042	52609	89096	39843	43154	30750	40409	30494	-74541	-130492	-122493
Less Interest	28192	26021	15222	12392	14709	13611	10759	11463	11008	19477	23759
Less Depreciation	7688	7296	6747	6909	7111	6930	6708	7269	4434	4506	4161
Less Loss on sale of Fixed Assets											
Less Other expenses				1700	1783	707					
Earning Before Tax(EBT)	-2838	19292	67127	18842	19551	9502	22942	11762	-89983	-154475	-150413
Less:Tax Provision				4710	4938	2375	5055	2808	70799		
Earning after tax	-2838	19292	67127	14132	14613	7127	17887	8954	-160782	-154475	-150413
Less General Reserve		13677	58649	2120	1481	713	1442	739			
Proposed dividend		4084	4084	4084	4084						
Tax on proposed dividend											
Staff bonus provision											
Other Reserve		1530	4394	7926	8833	5594	14646	6421			
tax on staff bonus											
add Previous year profit	-2839										
Total net profit transferred to B.S.	-2839	0.147	0.85	821	417	819	1656	1937	-160784	-154474	-150413
EPS	-0.0694958	0.472414722	1.643778926	0.346058721	0.357837255	0.174523104	0.438009648	0.219261944	-3.937164826	-3.782721552	-3.683252932
NO OF SHARE	40,837	40,837	40,837	40,837	40,837	40,837	40,837	40,837	40,837	40,837	40,837

Appendix 8

Condence and summarised Profit and Loss Account ofSurya Nepal Pvt.Ltd. up to 2065/066 (2009)

{Rs.000}

Years / Particulars	2055/056/ (1999)	2,000	2,001	2,002	2,003	2,004	2,005	2,006	2,007	2,008	2,009
Gross sales	**2728285**	**2862741**	**3352108**	**3541694**	**4144517**	**4706092**	**4726865**	**5472702**	**6627545**	**6704884**	**8213392**
Less:Excise duty	1302056	1334091	1592009	1745450	1902479	2090618	2163534	2390463	2804093	2392059	2839105
Net Sales	1426229	1528650	1760099	1796244	2242038	2615474	2563331	3082239	3823452	4312825	5374288
Less Cost of Sales/Consumed	835625	855945	942537	923410	1156778	1341187	1209517	1426980	1673531	1683213	2048912
Gross Profit	590604	672705	817562	872834	1085260	1274287	1353814	1655259	2149921	2629612	3325376
Add:other income	6224	5302	12360	73218	6132	14532	21834	29814	42791	101606	117364
Less:Manufacturing,selling &dist.exp	308440	363035	443595	439886	513072	609292	590450	696642	763038	837144	983118
Less Administrative exoenses											
Operating Profit (EBIT)	**288388**	**314972**	**386327**	**506166**	**578320**	**679527**	**785198**	**988431**	**1429674**	**1894074**	**2459622**
Less Interest	42412	28677	22677	9497	7037	319	859	194			
Less Depreciation	86719	93504	92994	93701	105917	109228	116145	127343	125152	110197	137983
Less Loss on sale of Fixed Assets			3306	4840	16076	2557	8509	21919	4190	2059	593
Less Other expenses/provision of housing and bonus	21717	26290	36458	54290	50073	77375	89957	114406	180772	242975	200454
Earning Before Tax(EBT)	**137539**	**166501**	**230892**	**343837**	**399217**	**490046**	**569729**	**724569**	**1119560**	**1538843**	**2120592**
Less:Tax Provision	27022	35481	65251	142789	156958	163214	188478	222659	368026	507382	679738
Earning after tax	**110517**	**131020**	**165640**	**201048**	**242258**	**326832**	**381250**	**501910**	**751533**	**1031460**	**1440854**
Less General Reserve			786359								650879
Proposed dividend	28224	30800			79579					201600	
Tax on proposed dividend											
Interim dividend		14000		73684		106105	123789	247579	403200	672000	1975680
Staff bonus provision											116052
tax on staff bonus											
add Previous year profit	513510	595803	682024		127364						
Total net profit transferred to B.S.	668975	764835	882537	1029808	1215600	1169961	1473109	1769389	2174302	2354357	236857
EPS	197.3518	233.96429	295.786	359.014	432.604	97.2714	113.467	149.378	223.671	306.982	71.47
NO OF SHARE	560	560	560	560	560	3,360	3,360	3,360	3,360	3,360	20,160

Appendix 9

Summary Sheet of Ratios for Factor analysis and Others

Name of Company: Janakpur Cigarette Factory ltd. (JCF)

Year	LTDR % (total capital)	TDR %	CETR (times)	ICR (times)	FOCR (times)	LTDR% on tatal assets	DER (%)	DOL	DFL	DCL	Proprietory ratio on common eqity (%)	Liquidity Ratio (Times)	NTDS Rs.000	EBIDT (Rs 000)	ROCE (% capital employed)	ROCE (% sh Eqity)
	x1	**x2**	**x3**	**x4**	**x5**	**x6**	**x7**	**x8**	**x9**	**x10x**	**x11**	**x12**	**x13**	**x14**	**x15**	**x16**
2000	151.45	77.86	2.11	2.02	2.30	33.53	351.66	10.46	2.73	28.52	451.66	1.53	7296	52609	6.29	15.82
2001	78.02	68.63	2.30	5.85	6.30	24.47	218.77	4.09	1.33	5.42	318.77	1.57	6747	89096	20.38	36.29
2002	59.94	66.63	2.37	3.22	3.77	20.00	199.71	10.14	2.11	21.44	299.71	1.48	6909	39843	4.67	7.47
2003	71.26	67.54	2.10	2.93	3.42	23.13	208.11	-2.43	2.21	-5.37	308.11	1.60	7111	43154	4.45	7.62
2004	78.45	66.27	1.89	2.26	2.77	26.46	196.47	5.30	3.24	17.15	296.47	1.81	6930	30750	2.06	3.67
2005	68.71	62.49	2.02	3.76	4.38	25.77	166.58	-70.23	1.76	-123.71	266.58	1.84	6708	40409	5.55	9.37
2006	89.22	62.63	1.93	2.66	3.29	33.34	167.63	14.19	2.59	36.79	267.63	2.27	7269	30494	2.72	5.15
2007	117.83	80.50	2.75	-6.77	-6.37	22.97	412.94	33.29	0.83	27.58	512.94	1.03	4434	-74541	-77.43	-168.68
2008	335.10	85.23	1.39	-6.70	-6.47	49.49	577.13	227.40	0.84	192.09	677.13	1.38	4506	-130492	-37.25	-162.06
2009	420.21	87.24	1.13	-5.16	-4.98	53.61	683.87	-58.49	0.81	-47.63	783.87	1.12	4161	-122493	-30.33	-157.80

Year	ROCE (% Eqity)	ROA(%)	Cost of goods sold Rs.000)	DTR (times)	ITR (Times)	ACP (Days)	CTR (Times)	EAT (Rs.000)	Log Sales	Profitability(%)	TANG(%)	SANS(%)	BRISK (%)EBIT Variation	Operating Ratio (%)	Capital Gearing Ratio (Times)
	x17	**x18**	**x19**	**x20**	**x21**	**x22**	**x23**	**x24**	**x25**	**x26**	**x27**	**x28**	**x29**	**x30**	**x31**
2000	47.24	9.55	411785	9.37	4.17	38.97	8.37	19292	13.3807	9.55	12.07	29.41	59.219	93.017	0.6602986
2001	164.38	15.11	467549	13.07	4.95	27.92	6.44	67127	13.5375	15.11	10.28	28.89	69.355	90.629	1.2817508
2002	34.61	7.03	437168	14.20	4.21	25.70	6.23	14132	13.4814	7.03	10.27	34.47	-55.28	95.528	1.6683316
2003	35.78	7.30	415996	17.31	3.86	21.09	6.05	14613	13.4467	7.30	8.75	34.71	8.3101	94.868	1.403323
2004	17.45	5.35	382710	12.37	4.23	29.50	5.86	7127	13.3909	5.35	8.11	38.16	-28.74	96.677	1.2747452
2005	43.80	7.94	361043	13.31	4.55	27.42	6.05	17887	13.3864	7.94	9.11	39.28	31.411	94.733	1.4554847
2006	21.93	6.55	389705	11.69	5.52	31.23	6.26	8954	13.3632	6.55	10.58	35.24	-32.51	96.502	1.1208095
2007	-393.72	-15.25	356896	11.47	4.85	31.83	10.16	-2E+05	13.2540	-15.25	10.22	52.26	-344.4	114.84	0.8486467
2008	-378.27	-20.22	430057	8.12	5.65	44.93	10.08	-2E+05	13.2660	-20.22	7.10	49.75	275.06	124.25	0.2984168
2009	-368.33	-16.39	428524	7.83	4.72	46.63	9.37	-2E+05	13.2323	-16.39	6.43	46.86	193.87	123.64	0.2379775

Appendix 10

Summary sheet of ratio analysis for factor analysis and Others

Name of Company: Surya Nepal (Tobacco Co.) Pvt. ltd.(Surya Nepal)

Year	LTDR % (total capital)	TDR %	CETR (times)	ICR (times)	FOCR (times)	LTDR% on tatal assets	DER (%)	DOL	DFL	DCL	Proprietory ratio on common eqity (%)	Liquidity Ratio (Times)	NTDS Rs.000	EBIDT (Rs 000)	ROCE (% capital employed)	ROCE (% sh Eqity)
	x1	x2	x3	x4	x5	x6	x7	x8	x9	x10x	x11	x12	x13	x14	x15	x16
2000	12.55	30.85	1.58	10.98	14.24	12.55	44.62	1.28	1.89	2.43	144.62	1.40	119794	314972	13.51	15.96
2001	14.45	34.12	1.54	17.04	21.14	14.45	51.79	1.50	1.67	2.50	151.79	2.09	132758	386327	14.47	17.65
2002	0.31	24.79	1.65	53.30	63.16	0.31	32.95	15.11	1.47	22.24	132.95	1.70	152831	506166	18.44	18.52
2003	0.00	29.40	1.76	82.18	97.23	0.00	41.63	0.57	1.45	0.83	141.63	1.78	172066	578320	19.05	19.05
2004	0.00	29.86	1.74	2130.18	2472.59	0.00	42.58	1.05	1.39	1.46	142.58	1.78	189160	679527	22.99	21.70
2005	0.00	21.46	1.42	914.08	1049.29	0.00	27.33	-7.80	1.38	-10.75	127.33	2.41	214611	785198	22.10	21.07
2006	0.00	25.47	1.46	5095.01	5751.41	0.00	34.17	1.02	1.36	1.39	134.17	2.44	263668	988431	24.83	23.84
2007	0.00	28.30	1.52	0.00	0.00	0.00	39.48	1.86	1.28	2.37	139.48	2.43	310114	1E+06	31.31	29.94
2008	0.00	34.75	1.60	0.00	0.00	0.00	53.25	2.54	1.23	3.12	153.25	1.96	355231	2E+06	39.97	38.34
2009	0.00	55.51	2.39	0.00	0.00	0.00	124.76	1.21	1.16	1.41	224.76	1.15	339030	2E+06	67.24	63.96

Year	ROCE (% Eqity)	ROA(%)	Cost of goods sold Rs.000)	DTR (times)	ITR (Times)	ACP (Days)	CTR (Times)	EAT (Rs.000)	Log Sales	Profitability(%)	TANG(%)	SANS(%)	BRISK (%)EBIT Variation	Operating Ratio (%)	Capital Gearing Ratio (Times)
	x17	x18	x19	x20	x21	x22	x23	x24	x25	x26	x27	x28	x29	x30	x31
2000	233.96	26.53	855945	48.43	8.08	7.54	3.49	131020	14.2399	26.53	71.54	23.75	9.22	79.74	5.51
2001	295.79	27.12	942537	295.81	6.90	1.23	3.57	165640	14.3809	27.12	56.72	25.20	22.65	78.75	4.56
2002	359.01	35.06	923410	201.49	8.35	1.81	3.26	201048	14.4012	35.06	57.29	24.49	31.02	76.43	245.99
2003	432.60	32.11	1156778	100.80	5.04	3.62	3.26	242258	14.6229	32.11	47.18	22.88	14.26	74.79	-
2004	97.27	31.65	1341187	237.51	4.67	1.54	3.12	326832	14.7770	31.65	41.76	23.30	17.50	74.58	-
2005	113.47	34.09	1209517	129.14	3.90	2.83	2.61	381250	14.7568	34.09	44.33	23.03	15.55	70.25	-
2006	149.38	34.99	1426980	78.96	4.47	4.62	2.60	501910	14.9412	34.99	34.73	22.60	20.56	68.90	-
2007	223.67	40.83	1673531	21.35	4.43	17.10	2.64	751533	15.1567	40.83	26.64	19.96	44.64	63.73	-
2008	306.98	45.94	1683213	34.04	5.04	10.72	2.49	1E+06	15.2771	45.94	22.38	19.41	32.48	58.44	-
2009	71.47	48.58	2048912	44.18	4.87	8.30	3.65	1E+06	15.4971	48.58	32.94	18.29	29.86	56.42	-

Appendix 11

Summary sheet of ratio analysis for factor analysis and Others

Name of Company: Indian Tobacco Company ltd.(ITC)

Year	LTDR % (total capital)	TDR %	CETR (times)	ICR (times)	FOCR (times)	LTDR% on tatal assets	DER (%)	DOL	DFL	DCL	Proprietory ratio on common eqity (%)	Liquidity Ratio (Times)	NTDS Rs.000	EBIDT (Rs 000)	ROCE (% capital employed)	ROCE (% sh Eqity)
	x1	x2	x3	x4	x5	x6	x7	x8	x9	x10x	x11	x12	x13	x14	x15	x16
2000	13.22	43.33	1.11	12.97	14.03	13.22	76.47	8.09	1.19	9.61	176.47	1.61	11853	146003	22.95	28.31
2001	14.33	41.04	0.96	21.50	23.14	14.33	69.62	2.48	1.14	2.83	169.62	1.89	13994	182515	22.90	28.47
2002	4.09	34.68	1.08	30.57	33.54	4.09	54.71	0.59	1.15	0.68	157.78	1.44	19845	204562	25.32	26.95
2003	1.42	34.32	1.07	77.86	85.81	1.42	52.88	0.49	1.13	0.55	154.07	1.28	23734	232337	25.01	25.56
2004	1.19	35.99	0.99	104.29	114.04	1.19	57.00	0.62	1.11	0.70	158.37	0.99	24162	258547	24.39	24.85
2005	2.12	28.39	0.94	71.37	78.75	2.12	41.53	0.61	1.13	0.69	146.31	1.17	31287	302837	22.57	23.27
2006	0.92	28.26	1.07	302.89	330.75	0.92	40.81	0.67	1.11	0.74	144.39	1.44	33234	361346	24.84	25.17
2007	1.34	27.11	1.14	1308.81	1419.46	1.34	38.89	1.28	1.09	1.40	143.42	1.63	36292	429290	25.38	25.87
2008	1.24	26.94	1.14	1087.82	1182.93	1.24	38.54	1.63	1.10	1.79	143.06	1.58	43846	501484	25.42	25.88
2009	0.91	25.06	1.11	294.40	324.39	0.91	35.55	0.02	1.12	0.02	141.86	1.73	54941	539347	23.46	23.76

Year	ROCE (% Eqity)	ROA(%)	Cost of goods sold Rs.000000)	DTR (times)	ITR (Times)	ACP (Days)	CTR (Times)	EAT (Rs.000 000)	Log Sales	Profitability(%)	TANG(%)	SANS(%)	BRISK (%)EBIT Variation	Operating Ratio (%)	Capital Gearing Ratio (Times)
	x17	x18	x19	x20	x21	x22	x23	x24	x25	x26	x27	x28	x29	x30	x31
2000	322.90	29.56	152317	33.18	4.10	8.93	2.30	79244	12.8530	29.56	25.89	24.36	40.344	64.816	4.2877296
2001	410.03	30.44	149237	40.89	3.67	13.30	1.98	100626	12.9490	30.44	30.27	25.01	25.008	59.855	4.1149673
2002	480.68	29.37	189042	27.45	4.29	11.66	2.09	118972	13.1341	29.37	37.23	22.61	12.08	62.38	15.512687
2003	554.06	28.11	238333	31.30	4.68	11.00	2.01	137135	13.3802	28.11	36.37	22.60	13.578	59.444	45.867841
2004	643.11	25.47	276955	33.19	4.22	19.68	1.81	159285	13.5463	25.47	32.49	21.22	11.281	58.853	53.041456
2005	736.51	26.22	398323	18.55	3.81	16.44	1.64	183707	13.7943	26.22	34.20	20.39	17.13	61.902	32.179695
2006	607.26	27.62	519478	22.20	3.71	16.66	1.77	228037	14.0114	27.62	31.81	21.60	16.192	63.092	75.682619
2007	717.66	28.68	601670	21.91	3.63	17.48	1.81	269997	14.1482	28.68	31.70	22.92	18.803	64.741	51.95679
2008	827.92	29.07	644678	20.88	3.44	3.11	1.74	312010	14.2465	29.07	35.76	5.20	16.817	64.814	56.231264
2009	864.66	27.68	7848299	117.37	3.35	6.09	1.66	326359	15.8758	27.68	37.32	17.92	7.5502	105.2	77.358941

Appendix 12

Summary sheet of ratio analysis for factor analysis and Others

Name of Company: Godfrey Philips India ltd.(GPI)

Year	LTDR % (total capital)	TDR %	CETR (times)	ICR (times)	FOCR (times)	LTDR% on tatal assets	DER (%)	DOL	DFL	DCL	Proprietory ratio on common eqity (%)	Liquidity Ratio (Times)	NTDS Rs.000	EBIDT (Rs 000)	ROCE (% capital employed)	ROCE (% sh Eqity)
	x1	x2	x3	x4	x5	x6	x7	x8	x9	x10x	x11	x12	x13	x14	x15	x16
2000	0.20	26.98	2.71	28.42	30.59	0.20	21.04	-0.22	1.13	-0.25	157.12	1.44	551	7189	22.29	22.29
2001	2.40	33.84	2.45	68.28	74.74	2.40	25.52	1.75	1.12	1.96	162.34	1.58	769	8125	21.56	21.56
2002	1.26	23.06	1.92	66.00	72.59	1.26	16.67	0.01	1.13	0.01	152.96	1.40	811	8118	19.77	19.77
2003	5.67	21.74	1.97	46.71	51.39	5.67	12.74	0.70	1.14	0.80	158.64	1.35	913	9108	14.75	14.75
2004	1.19	10.33	2.10	16.50	18.20	1.19	7.15	0.07	1.20	0.08	156.28	1.34	945	9175	18.11	18.11
2005	10.71	33.22	1.78	21.38	24.28	10.71	19.03	3.09	1.22	3.78	169.05	1.25	1655	12232	19.48	19.48
2006	12.43	37.29	1.52	40.36	46.97	12.43	20.33	3.67	1.23	4.52	163.53	1.43	1837	11220	16.43	16.43
2007	9.44	28.31	1.59	54.87	62.28	9.44	14.30	2.80	1.18	3.31	151.59	1.47	2163	16022	20.00	20.00
2008	11.85	35.56	1.42	56.70	62.68	11.85	19.94	2.29	1.14	2.61	168.20	1.43	2247	21320	24.81	24.81
2009	9.74	29.23	1.65	34.09	38.88	9.74	16.47	-0.24	1.20	-0.29	169.06	1.66	2803	19978	18.82	18.82

Year	ROCE (% Eqity)	ROA(%)	Cost of goods sold Rs.000000)	DTR (times)	ITR (Times)	ACP (Days)	CTR (Times)	EAT (Rs.000 000)	Log Sales	Profitability(%)	TANG(%)	SANS(%)	BRISK (%)EBIT Variation	Operating Ratio (%)	Capital Gearing Ratio (Times)
	x17	x18	x19	x20	x21	x22	x23	x24	x25	x26	x27	x28	x29	x30	x31
2000	402.40	24.37	22305	110.54	4.66	3.30	5.75	4185	10.8410	24.37	17.99	44.49	-0.91	39	312.91667
2001	447.69	23.17	24382	100.50	4.31	3.63	4.42	4656	10.9128	23.17	19.72	42.93	13.02	106.72	25.649644
2002	459.52	21.96	16599	241.94	4.72	1.51	3.83	4779	10.7668	21.96	18.21	51.11	-0.086	85.6	51.978495
2003	368.27	22.11	16292	47.89	5.37	7.62	3.81	3830	10.9268	22.11	17.88	50.68	12.195	78.047	11.115582
2004	504.13	20.28	19454	49.11	4.96	7.43	3.99	5243	11.0330	20.28	16.37	52.92	0.7356	85.8	53.910615
2005	612.50	22.13	26487	273.14	5.36	1.34	3.36	6370	11.1354	22.13	22.20	48.38	33.319	97.986	5.5238176
2006	578.17	18.74	17607	57.77	4.39	6.32	3.25	6013	11.1126	18.74	27.59	48.52	-8.273	67.402	4.9208227
2007	816.54	24.89	19936	49.11	5.01	7.43	3.29	8492	11.2549	24.89	25.34	47.31	42.799	63.971	6.9917668
2008	1,237.21	24.44	26297	38.34	3.66	9.52	2.93	12867	11.3899	24.44	18.96	48.14	33.067	67.14	5.0158638
2009	1,047.02	20.43	111268	36.66	3.05	9.96	3.37	10889	11.6197	20.43	20.26	42.86	-6.295	133.36	6.0704166

Appendix 13(a)

Nepalese Company

Name of Company: Janakpur Cigarette Factory ltd. (JCF)

Factors for Multiple Regression, correlation and Multi colinearity Diagnostics

Equation 1 :Y =b0+b1+b2+b3+b4+b5+b6+b7+b8 +b9.....

Dependent Variable			Independent Variables							
Year	LTDR	TDR	Log sales (SIZE)	PROFIT (Profitability)	LIQ (Liquidity)	TANG(Tangibility)	GROW(Growth TA)	NTDS(non debt tax shield)	SANS(selling & adm exp)	BRISK(business risk)(DOL)
	Y	Y1	x1	x2	x3	x4	x5	x6	x7	x8
2000	33.53	77.86	13.38	9.55	1.53	12.07	1.79	1.32	29.41	59.22
2001	24.47	68.63	13.54	15.11	1.57	10.28	7.07	1.14	28.89	69.36
2002	20.00	66.63	13.48	7.03	1.48	10.27	(3.91)	1.22	34.47	(55.28)
2003	23.13	67.54	13.45	7.30	1.60	8.75	4.35	1.20	34.71	8.31
2004	26.46	66.27	13.39	5.35	1.81	8.11	(2.73)	1.20	38.16	(28.74)
2005	25.77	62.49	13.39	7.94	1.84	9.11	(11.52)	1.32	39.28	31.41
2006	33.34	62.63	13.36	6.55	2.27	10.58	(8.57)	1.56	35.24	(32.51)
2007	22.97	80.50	13.25	(15.25)	1.03	10.22	5.09	0.91	52.26	(344.44)
2008	49.49	85.23	13.27	(20.22)	1.38	7.10	32.01	0.70	49.75	275.06
2009	53.61	87.24	13.23	(16.39)	1.12	6.43	15.76	0.56	46.86	193.87

Appendix 13(b)

Name of Company: Surya Nepal Pvt. ltd. (Surya Nepal)

Factors for Multiple Regression, correlation and Multi colinearity Diagnostics

Equation 1 :Y =b0+b1+b2+b3+b4+b5+b6+b7+b8 +b9.....

Dependent Variable			Independent Variables							
Year	LTDR	TDR	Log sales (SIZE)	PROFIT (Profitability)	LIQ (Liquidity)	TANG(Tangibility)	GROW(Growth TA)	NTDS(non debt tax shield)	SANS(selling & adm exp)	BRISK(business risk)(DOL)
	Y	Y1	x1	x2	x3	x4	x5	x6	x7	x8
2000	12.55	30.85	14.2399	26.53	1.40	71.54	(4.77)	119794	23.75	9.22
2001	14.45	34.12	14.3809	27.12	2.09	56.72	20.01	132758	25.20	22.65
2002	0.31	24.79	14.4012	35.06	1.70	57.29	1.34	152831	24.49	31.02
2003	0.00	29.40	14.6229	32.11	1.78	47.18	24.76	172066	22.88	14.26
2004	0.00	29.86	14.7770	31.65	1.78	41.76	19.22	189160	23.30	17.50
2005	0.00	21.46	14.7568	34.09	2.41	44.33	7.28	214611	23.03	15.55
2006	0.00	25.47	14.9412	34.99	2.44	34.73	22.63	263668	22.60	20.56
2007	0.00	28.30	15.1567	40.83	2.43	26.64	23.95	310114	19.96	44.64
2008	0.00	34.75	15.2771	45.94	1.96	22.38	17.76	355231	19.41	32.48
2009	0.00	55.51	15.4971	48.58	1.15	32.94	22.81	339030	18.29	29.86

Appendix 13(c)

Indian Company

Name of Company: Indian Tobacco Company Ltd. (ITC)

Factors for Multiple Regression, correlation and Multi colinearity Diagnostics

Equation 1 :Y =b0+b1+b2+b3+b4+b5+b6+b7+b8 +b9.....

Dependent Variable			Independent Variables							
Year	LTDR Y	TDR Y1	Log sales (SIZE) x1	PROFIT (Profitability) x2	LIQ (Liquidity) x3	TANG(Tangibility) x4	GROW(Growth TA) x5	NTDS(non debt tax shield) x6	SANS(selling & adm exp) x7	BRISK(business risk)(DOL) x8
2000	13.22	43.33	12.8530	29.56	1.61	25.89	41.69	11853	24.36	40.34432
2001	14.33	41.04	12.9490	30.44	1.89	30.27	21.36	13994	25.01	25.00771
2002	4.09	34.68	13.1341	29.37	1.44	37.23	16.17	19845	22.61	12.07956
2003	1.42	34.32	13.3802	28.11	1.28	36.37	18.70	23734	22.60	13.57779
2004	1.19	35.99	13.5463	25.47	0.99	32.49	22.80	24162	21.22	11.28103
2005	2.12	28.39	13.7943	26.22	1.17	34.20	13.80	31287	20.39	17.13035
2006	0.92	28.26	14.0114	27.62	1.44	31.81	13.26	33234	21.60	16.19196
2007	1.34	27.11	14.1482	28.68	1.63	31.70	14.40	36292	22.92	18.80303
2008	1.24	26.94	14.2465	29.07	1.58	35.76	15.24	43846	5.20	16.81707
2009	0.91	25.06	15.8758	27.68	1.73	37.32	12.96	54941	17.92	7.550191

Appendix 13(d)

Name of Company: Godfrey Philips India Ltd. (GPI)

Factors for Multiple Regression, correlation and Multi colinearity Diagnostics

Equation 1 :Y =b0+b1+b2+b3+b4+b5+b6+b7+b8 +b9.....

Dependent Variable			Independent Variables							
Year	LTDR Y	TDR Y1	Log sales (SIZE) x1	PROFIT (Profitability) x2	LIQ (Liquidity) x3	TANG(Tangibility) x4	GROW(Growth TA) x5	NTDS(non debt tax shield) x6	SANS(selling & adm exp) x7	BRISK(business risk)(DOL) x8
2000	0.20	26.98	10.8410	24.37	1.44	17.99	(16.34)	551	44.49	-0.90972
2001	2.40	33.84	10.9128	23.17	1.58	19.72	18.85	769	42.93	13.01989
2002	1.26	23.06	10.7668	21.96	1.40	18.21	5.45	811	51.11	-0.08615
2003	5.67	21.74	10.9268	22.11	1.35	17.88	11.42	913	50.68	12.19512
2004	1.19	10.33	11.0330	20.28	1.34	16.37	9.83	945	52.92	0.735617
2005	10.71	33.22	11.1354	22.13	1.25	22.20	22.18	1655	48.38	33.3188
2006	12.43	37.29	11.1126	18.74	1.43	27.59	8.29	1837	48.52	-8.27338
2007	9.44	28.31	11.2549	24.89	1.47	25.34	7.52	2163	47.31	42.79857
2008	11.85	35.56	11.3899	24.44	1.43	18.96	35.51	2247	48.14	33.06703
2009	9.74	29.23	11.6197	20.43	1.66	20.26	12.12	2803	42.86	-6.29456

Appendix 14

Composition Percentage of Long Term Debt

	JCF		Surya Nepal		ITC		GPI		Nepal		India	
Year	Bank%	Other%	Bank%	Other%	Bank%	Other%	Bank%	Other%	Bank%	Other%	Bank%	Other%
2000	66.49	33.51	100.00	0.00	71.06	28.94	100.00	0.00	83.25	33.51	85.53	28.94
2001	50.46	49.54	100.00	0.00	65.87	34.13	100.00	0.00	75.23	49.54	82.93	34.13
2002	39.47	60.53	100.00	0.00	70.02	29.98	100.00	0.00	69.74	60.53	85.01	29.98
2003	49.37	50.63	0.00	0.00	39.77	60.23	100.00	0.00	24.69	50.63	69.88	60.23
2004	57.89	42.11	0.00	0.00	26.12	73.88	100.00	0.00	28.94	42.11	63.06	73.88
2005	49.99	50.01	0.00	0.00	36.15	63.85	100.00	0.00	24.99	50.01	68.07	63.85
2006	57.81	42.19	0.00	0.00	28.12	71.88	100.00	0.00	28.90	42.19	64.06	71.88
2007	41.86	58.14	0.00	0.00	30.26	69.74	100.00	0.00	20.93	58.14	65.13	69.74
2008	81.21	18.79	0.00	0.00	2.60	97.40	100.00	0.00	40.61	18.79	51.30	97.40
2009	81.92	18.08	0.00	0.00	6.55	93.45	100.00	0.00	40.96	18.08	53.28	93.45
Sum	576.47	423.53	300.00	0.00	376.50	623.50	1000.00	0.00	438.24	423.53	688.25	623.50
Mean	57.65	42.35	100.00	0.00	37.65	62.35	100.00	0.00	43.82	42.35	68.83	62.35
sd	14.84	14.07	18.83	0.00	23.33	23.33	28.87	0.00				
cv	0.26	0.33	0.19	0.00	0.62	0.37	0.29	0.00				

Appendix 15

Degree of Operating Leverage(DOL) for Trend Analysis and Statio

Year	JCF	Surya Nepal	ITC	GPI
2000	10.457	1.284	8.088	-0.224
2001	4.086	1.496	2.480	1.749
2002	10.141	15.105	0.594	0.006
2003	-2.432	0.574	0.487	0.703
2004	5.300	1.051	0.624	0.066
2005	-70.235	-7.800	0.608	3.089
2006	14.191	1.016	0.668	3.666
2007	33.292	1.856	1.283	2.800
2008	227.399	2.538	1.628	2.288
2009	-58.486	1.213	0.018	-0.244

Appendix 16

Dear Sir,

Your Vision is most useful to my research therefore, I request you to fill my questionere. It is my great pleasure to state the fact that, I Mr. Keshav Prasad Gadtaula, Lecturer in Tribhuvan University, Nepal, Faculty of Management is persuading Ph.D. research work on topic "A comparative study on capital structure of manufacturing industries in Nepal and India with special reference to Tobacco/cigarette industries."

I am herewith enclosing questionnaire relating to behavioral aspects of capital structure decision on finance of private and public companies.

This question is related to executive level manpower.

I request, if you could kindly fill up these questionere and send it to following address as soon as possible mentioning the position and company for whom you work at the end of this page.

My address is:

Keshav prasad Gadtaula

Lecturer ,Tribhuvan University, Post Graduate Campus, Biratnager, Morang District, Koshi Zone, Nepal. Ph.no. 0977-21-471845 or 9842129404

email: keshavneshan@gmail.com or keshavneshan@yahoo.com

or,

Professor, Govind Pareek, Ph.D.

Vice principle

University of Rajasthan, Department of Accountancy and Business Statistics

Commerce College, Jaipur, India.

Ph no. 0911-9414310525

email: drgovindpareek@yahoo.co.in

With regards,

Keshav Prasad Gadtaula

Research scholar, University of Rajasthan, Jaipur, India.

Appendix 16

Capital Structure Questionnaire

A survey of capital Structure Management Practices in Nepalese and Indian Enterprises.

A. Debt condition

1. Do you have a target debt ratio? (Please tick one)

   (a)Yes (b) No (c) Unsure
2. 2.Do you have a policy of maintaining spare debt capacity? (Please tick one)
   (a)Yes (b) No (c) Unsure
3. Could you borrow more amount of loan at the same interest rate? (Please tick one)
   (a)Yes (b) No (c) Unsure
4. Do you see your borrowing of loan is in industry terms? (Please tick one)
   (a)Yes (b) No (c) Unsure
5. Do you make use of off-balance sheet financing techniques? (Please tick one)
   (a)Yes (b) No (c) Unsure

B. Financial Leverage:

6. What is your general impression about debt level in Nepalese Enterprises?
   a. High
   b. Low
   c. Don't know

7. If there is no limit to borrow, how much debt you would like to employ in your financing?

Short term debt	Long term debt
a. Less than 30% of current assists	a. Less then 30% of fixed assets
b. 31-50% of current assets.	B. 31-50% of fixed assets.
c. 51-60% of current assets.	C. 51-60% of fixed assets.
d. 61-70% of current assets.	D. 61-70% of fixed assets.
e. More than 70% of current assets.	E. More than 70% of fixed assets.

C. Attitudes to funding sources:

8. Do you prefer to fund your business by means of internal or external funding sources? (Please tick one)

   (a) Internal (b) Mix (c) Depends on the scale (d) No preference

9. Do you have any preferences for short-, medium- or long-term funding sources? (Please tick one)

(a)	Short (up to 1 year)	
(b)	Medium/ Short (up to 3 year)	

(c)	Medium (up to 5 year)	
(d)	Long (>5 year)	
(e)	Policy of matching assets and liabilities	
(f)	Tern does not matter	
(g)	Depends on interest rates	
(h)	A balance of short/medium/long	

10. Under what circumstances would you make an equity issue? (Please tick)

(a)	To find major expansion	
(b)	To make an acquisition	
(c)	If market condition is right	
(d)	To reduce leverage	
(e)	If market conditions is wrong	

11. Under what circumstance would you make a Debt Issue? (Please tick)

(a)	To fond major expansion	
(b)	To make an acquisition	
(c)	To add to liquidity	
(d)	If market condition right	
(e)	To fund a long-term assets if market conditions right	
(f)	Avoid it	

12. At current level of debt what source do you prefer to secure financing next?

	Preference	
	Most	Least
a. Short-term loans.	( )	( )
b. Long –term loans	( )	( )
c. New stock issue	( )	( )
d. Retained Earnings.	( )	( )

12 .a. If your debt were to increase by 20% what source do you prefer to secure financing next?

	Preference	
	Most	Least
a. Short-term loans.	( )	( )
b. Long-term loans	( )	( )
c. New stock issue	( )	( )
d. Retained earnings.	( )	( )

12.b. If your debt were to decrease by 20%, what sources do you prefer to secure financing next?

		Preference	
		Most	Least
a.	Short – term loans	( )	( )
b.	Long – term loans	( )	( )
c.	New stock issue	( )	( )
d.	Retained Earnings	( )	( )

13. If the tax rate on corporate profit were to increase to 35%, would you increase or decrease of your debt level?

a. Increase b. Decrease c. no change

14. Who is most important (influential) in setting your firm's target financial structure ratio? (Indicate the most important with a 1, next most important with a2, etc.)

(a)	Our own management and staff of analysts	
(b)	Investment bankers	
(c)	Commercial bankers	
(d)	Trade creditors (suppliers)	
(e)	Outside security analysts	
(f)	Comparison with ratios of industry competitors	
(g)	Other (Please specify)	

15. In making financing decisions, does your firm use some measure of finance leverage (e.g. a debt to equity ratio or times- interest-earned ratio) as a constraint on the mix of debt and common equity funds employed? (Please tick one)

(a)Yes (b) No

16. How does your firm's measure the degree of financial leverage used? Please mark the following financial leverage measures in order of their important in your firm's financing decision procedures. (Indicate the most important with 1, next most important with 2, etc.)

(a)	Total Liabilities divided by total assets (the debt ratio)	
(b)	Long term debt divided by total debt plus net worth (the long-term debt to total capitalization ratio)	
(c)	Common equity divided by total assets (the common equity ratio)	
(d)	Long term debt divided by total assets (the long –term debt ratio)	
(e)	Long term debt divided by net worth (the long-term debt to net worth ratio)	

(f)	Earnings before interest and tax divided by total interest expenses (the times-interest-earned ratio)	
(g)	Earnings before interest and tax divided by interest expenses plus the before-tax equivalent of preferred dividend Payments (the times-interest and preferred dividend coverage ratio)	
(h)	Earnings before interest and taxes plus rent expense (i.e. lease payments) plus depreciation expenses divided by interest expenses plus the before-tax equivalent of preferred dividend payments plus rent expense (i.e. lease payments) (the cash flow coverage ratio)	
(I)	Other (Please identify the measure)	

17. If your firm lease equipment, does your calculation of the various financial leverage measures recognize (allow for) the lease payment as a financial charge similar to interest expenses? (Please tick one)

    (a) Yes (b) No

18. If your firm computes and uses a debt to equity ratio in its financing decisions, how is it calculated? By using: (Please tick one)

    (a) Book value (that is values for debt and equity components that appear on the balance sheet)

    (b) Market values (that is the current values for the debt and equity components obtainable in the market place)

19. Does your firm believe that there is a functional relationship between its capital costs and the amount of debt which it utilizes in its financial structure? (Please tick one)

    ((a) Yes (b) No

20. Does your firm believe that the use of a "proper" amount of debt in its capitalization (as opposed to none, or too much) will result in a lower overall costs of capital to the corporation? (Please tick one)

    (a) Yes (b) No

21. Is the concept of an industry norm (standard debt ratios for similar lines of business as your own) ever used by your firm in arriving at a financing decision? (Please tick on)

    (a) Yes (b) No

22. Does your firm believe that the use of an excessive amount of debt will eventually result in an increase in the yield (cost) of debt faced by your company? (Please tick one)

    (a) Yes (b) No

23. Does your firm believe that the use of an excessive amount of debt will eventually result in the market price of your common stock being adversely affected? (Please tick one)

(a) Yes (b) No

24. Does the financial theory concept of "Systematic risk" as typically measured by what are called "beta coefficient" ever affect your financial structure policy? (Please tick one)

(a)Yes (b) No

25. Rank the following sources of long-term funds in order of preference for financing new investments (1=first choice, 6=last choice). Please rank

(a)	Internal equity (retained earnings)	
(b)	External common equity	
(c)	Straight debt	
(d)	Convertible	
(e)	Straight preferred stock	
(f)	Convertible preference stock	

26. Please indicate the relative importance of the following considerations in growing your firm's financing decisions. (On a scale of 1 to 5, where 1=Unimportant and 5=Important.)

S/N	Relative Importance	1	2	3	4	5
(a)	Maximizing price of publicity traded securities					
(b)	Maximizing financial flexibility					
(c)	Ensuring long-term survivability of the firm					
(d)	Maximizing financial independence					
(e)	Maximizing comparability with firms in the industry					
(f)	Maximizing a high debt rating					
(g)	Maximizing a predictable source of funds					

27. Approximately what percent of the time would you estimate that you firm's outstanding securities are priced fairly by the market? (Please tick one)

(a)	More than 80 percent of the time	
(b)	Between 50 and 80 percent of the time	
(c)	Less than 50 percent of the time	

28. Given the attractive new growth opportunity that could not be taken without departing from your target capital structure or financing hierarchy, cutting the dividend, or selling off other assets, what action is your firm most likely to take? Please tick

(a)	Forgo the growth opportunity.	
(b)	Deviate from the target capital structure or financing hierarchy	
(c)	Cut the dividend	
(d)	Sell off other assets	

29. Indicate the relative importance of the following factors in governing your firm's financing decisions. (On a scale of 1 to 5, where 1=Unimportant and 5=Important)

S/N	Relative Importance factor	1	2	3	4	5
(a)	The corporate tax rate					
(b)	Personal tax rates of your debt and equity-holders					
(c)	The level of depreciation and other non-debt tax shields					
(d)	Costs of bankruptcy					
(e)	Voting control					
(f)	Restrictive covenants of senior securities					
(g)	Projected cash flows or earnings from the assets to be financed					
(h)	Riskiness of the assets to be financed					
(i)	Avoiding dilution of common shareholders' claim					
(j)	Avoiding mispricing of securities to be issued					
(k)	Correcting mispricing of outstanding securities					

30. Does your firm believe that there is some maximum amount of debt financing that should not be surpassed? (i.e. does your firm subscribe to the concept of a corporate debt capacity?) (Please tick one)

31. Does the capital structure really matters (relevance of capital structure)? (Please tick one)

(a)	Relevant	
(b)	Irrelevant	

32. How much should a company borrow in relation to its equity capital (i.e. the optimal capital structure level)?

(a)	Less than or equal to 1:1 of debt to equity	
(b)	More than 1:1 but less than or equal to 2:1 of debt to equity	
(c)	More than 2:1 but less than or equal to 3:1 of debt to equity	

33. Which of following variables from capital structure theory do you think most influencing variables determining capital structure?

S/N	Variables	Yes	No
(a)	Tangibility of assets		
(b)	Growth opportunity		
(c)	Uniqueness		
(d)	Firm's size		
(e)	Business risk		
(f)	Profitability		
(g)	Reputation		
(h)	Industry Classification		
(i)	Non-debt tax shields		
(j)	Ownership Structure		

34. Which of the following features of capital structure are more important in the context Nepalese Enterprises? (Please rank the following factors in order of their importance, 1= First rank, 7= last rank)

S. No.	Features	Rank
1.	Simplicity (Capital structure should be as simple as possible	( )
2.	Profitability	( )
3.	Solvency Position (Excessive use of debt threatens solvency position).	( )
4.	Flexibility (Possibility of contraction and expansion of capital).	( )
5.	Shareholders control factor (A good capital structure is the one that minimizes shareholders' control factor).	( )
6.	Intensive use (A good capital structure is the one that makes intensive use capital raised).	( )

7.	Economy (A good capital structure is the one that raises capital most economically).	( )

35. Which of the following factors affecting capital structure are considered important in the context of Nepalese enterprises? (1= Most important,2= Important, 3=Undecided, 4=Unimportant, 5=Most unimportant)

S. No.	Factors	1	2	3	4	5
1	Growth and stability of sales (Debt services ability depends upon growth and stability of sales).					
2	Cost flow capital (The enterprise will go for that capital which Is cheaper).					
3	Cash flow ability (debt securing ability depends upon flow Ability).					
4	Size of the company (Bigger the size, higher the debt financing).					
5	Marketability (company will go for that security which will be sold easily).					
6	Control (If management is afraid of losing control, it will go for debt issue).					
7	Floatation Costs (Enterprise will go for that capital structure which involves less flotation costs).					

D. Financial Reforms Policy:

36. If the government is to follow further financial reforms policy, your enterprise is likely to:

a. Increase the proportion of debt used in capital structure.
b. Decrease the proportion of debt used in capital structure.
c. Leave the proportion of debt used in capital structure unchanged.

37. If your enterprise does not plan to alter the proportion of debt currently used in the capital structure as a result of further liberalization policy, which of the following explanations most closely correspond to your reasons?

a. The further liberalization policy could be changed again.

b. Changes have already been made in the capital structure in anticipation of the policy.

c. The precise implications of the policy are not known.

d. Other factors are more important than the policy in determining the capital structure.

Thank you

Name (Optional):…… Position:……

Enterprise…… Establishment Year:…….

Phone:……. Address:……

Appendix -17

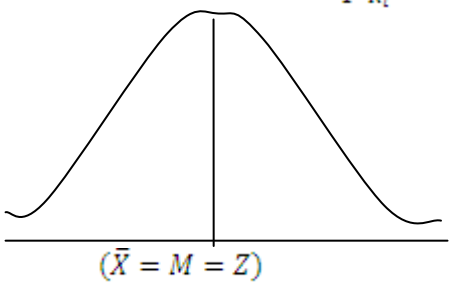
Some Valuable formula used for Thesis:

1.Durbin $watson$ test(d): $d = \frac{\sum_2^n(\hat{\mu}_t - \hat{\mu}_t - 1)^2}{\sum_1^n \hat{\mu}_t^2}$

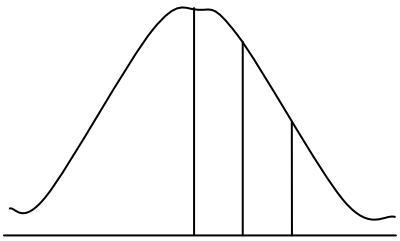
2.Multiple Regression equation(y): $y = \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \mu$

3.Variance inflation Factor(VIF): $VIF(\hat{\beta}_i) = \frac{1}{1-R_i^2}$

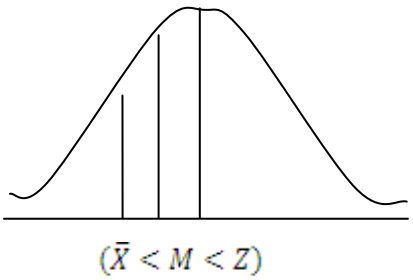
4.Skewness



Curve showing no skewness

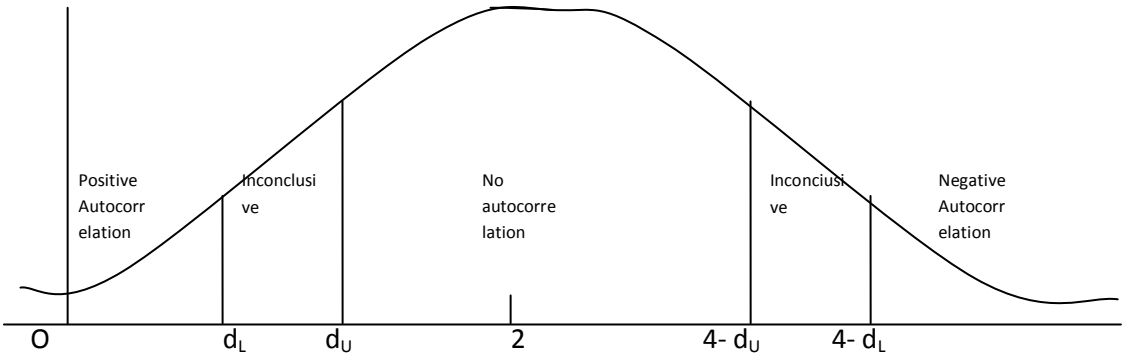


curve showing positive skewness



curve showing Negative skewness

5.D W Auto Correlation



D-W Test for Auto correlation

6. Skewness $=3(\bar{X}-M)$ and its coefficient j is workout as under

7.Coeficient of skewness (j) : $j=\frac{3(\bar{X}-M)}{\sigma}$

8.$Unit\ Roots\ test(yt): y_t = y_{t-1} + \varepsilon_t$

8. $y_t = \alpha y_{t-1} + \varepsilon_t \ |\alpha| < 1$

9. Dickey – Fuller Test for stationarity : $K(1) = T(\hat{\alpha}-1)t(1) = \frac{\hat{\alpha}-1}{SE(\hat{\alpha})}\ F(0,1)$

10. Spearman's coefficient of correlation (r) $=1-\left[\frac{6\sum d^2_i}{n(n^2-1)}\right]$

11.Karl pearson's correlation $(r) = \frac{\sum(X_i-X)(Y_i-Y)}{\sqrt{\sum(X_i-\bar{X})^2\sum(Y_i-\bar{Y})^2}}$

12.$Chi-square\ test(x^2) = \sum\frac{(O_{ij}-E_{ij})^2}{E_{ij}}$

13.Mean $(\overline{X}) = \frac{\sum x}{N}$

14.Standard Deviation $(\delta) = \frac{\sqrt{\sum x^2}}{N}$

15. Student's $t\ test(t) = \frac{\bar{X}-u}{\frac{\delta}{\sqrt{N}}}$

16. Variance Ratio test $(f)\ test = \frac{\frac{R^2}{K-1}}{\frac{1-R^2}{N-K}}$

17.Degree of freedom $(df) = V1 - k - 1$

18. $V2 = N - k$

19.Granger causality Test:

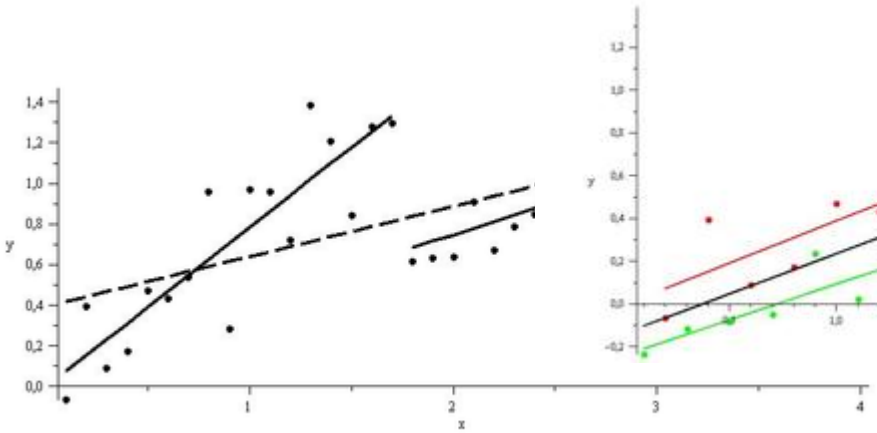
$$y_t = a_0 + a_1 y_{t-1} + a_2 y_{t-2} + \ldots + a_m y_{t-m} + residual_t.$$

Here y_{t-j} is retained in the regression

20. $y_t = a_0 + a_1 y_{t-1} + a_2 y_{t-2} + \ldots a_m y_{t-m} + b_p x_{t-p} + \ldots + b_q x_{t-q} + residual_t.$

21. The **Chow test** is a statistical and econometric test of whether the coefficients in two linear regressions on different data sets are equal. The Chow test was invented by economist Gregory Chow. In econometrics, the Chow test is most commonly used in time series analysis to test for the presence of a structural break. In program evaluation, the Chow test is often used to determine whether the independent variables have different impacts on different subgroups of the population.

Structural Break **Program Evaluation**



The null hypothesis of the Chow test asserts that $a_1 = a_2$, $b_1 = b_2$, and $c_1 = c_2$.

$$y_t = a + bx_{1t} + cx_{2t} + \varepsilon.$$

$$y_t = a_1 + b_1 x_{1t} + c_1 x_{2t} + \varepsilon.$$

$$y_t = a_2 + b_2 x_{1t} + c_2 x_{2t} + \varepsilon.$$

22. The Chow test statistic is

$$\frac{(S_C - (S_1 + S_2))/(k)}{(S_1 + S_2)/(N_1 + N_2 - 2k)}.$$

The test statistic follows the F distribution with k and $N_1 + N_2 - 2k$ degrees of freedom.

23. Name of Factors

LTDR %(total capital) = Long term Debt Ratio
TDR % = Total debt ratio

CETR (times) = Capital employed turnover ratio
ICR (times) =Interest Coverage Ratio
FOCR (times) =Fixed Obligation charge ratio
LTDR% on Total Assets = Long term debt ratio on total assets
DER (times) =Debt equity Ratio
DOL = Degree of Operating Leverage
DFL = Degree of Financial Leverage
DCL = Degree of Combined Leverage
Proprietary Ratio on Common Equity (%)
Liquidity Ratio (Times)
NTDS Rs.000 =Non debt Tax Shield

EBIDT (Rs 000) = Earnings before Interest Depreciation and Tax
ROCE (% Capital Employed) = Return on Capital Employed