CAPITAL STRUCTURE & PROFITABILITY MANAGEMENT

(A STUDY ON MACHHAPUCHCHHRE BANK LTD.)

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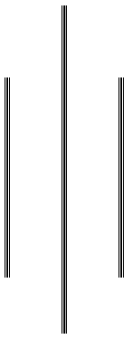
T.U. Registration No.: 7-2-25-183-2002



Submitted to:

Office of the Dean
Faculty of Management
Tribhuvan University

Kirtipur, Kathmandu

In partial fulfillment of the requirements for the degree of
Master of Business Studies (M.B.S.)

Kathmandu, Nepal

September, 2011

RECOMMENDATION

This is to certify that the Thesis

Submitted by:

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Entitled:

CAPITAL STRUCTURE & PROFITABILITY MANAGEMENT

(A STUDY ON MACHHAPUCHCHHRE BANK LTD.)

has been prepared as approved by this Department in the prescribed format of the Faculty of Management. This Thesis is forwarded for examination.

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Prof. Dr. Bal Krishna Shrestha	Prof. Dr. Bal Krishna Shrestha	Prof. Dr. Dev Raj Adhikari
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Date: …….

VIVA-VOCE SHEET

We have conducted the viva-voce examination of the thesis

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CAPITAL STRUCTURE & PROFITABILITY MANAGEMENT

(A STUDY ON MACHHAPUCHCHHRE BANK LTD.)

and found the thesis to be the original work of the student and written according to the prescribed format. We recommend the thesis to be accepted as partial fulfillment of the requirements for

Master's Degree in Business Studies (M.B.S.)

Viva-Voce Committee

Chairperson, Research Committee : ……

Member (Thesis Supervisor) : ……

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Date :……

DECLARATION

I hereby, declare that the work reported in this thesis entitled **"Capital Structure & Profitability Management**" A Study on Machhapuchchhre Bank Ltd. submitted to Central Department of Management, University Campus, T.U., Kirtipur is my original piece of work done in the form of partial fulfillment of requirement for the Master's Degree in Business Studies under the supervision and guidance of Prof. Dr. Bal Krishna Shresthaof Central Department of Management.

_____

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ACKNOWLEDGEMENTS

I would like to thank many people who have helped me and encouraged me to bring out this research work.

Firstly, I owe a debt of gratitude to my respected thesis supervisor **Prof. Dr. Bal Krishna Shrestha,** Central Department Of Management, who has supported me by giving guidelines, advice and valuable suggestions and unending sympathy throughout my research work.

I would also like to thank Mr. Dipak Dhungana and Mr. Deepak Basnet for providing necessary information and data without which my research work would have been incomplete. Similarly, Mr. Krishna Basnet, Mr. Kiran Basnet and Mr. Bisnu Gayawali have been equally helpful, and I express my gratitude to them.

My special appreciation goes to all the staff of library of Central Library, Kirtipur for their assistance in providing valuable materials.

Lastly, my heartiest thanks go to my family and campus staff along with classmates, colleagues who have supported me by providing constant help and encouragement.

Bhakta Bahadur Ghimire

Kathmandu

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CHAP **ABBREVIATIONS**

ATM	Automatic Teller Machine
BV	Book Value
BVPS	Book Value Per Share
CRO	Company Registrar's Office
CSR	Capital Sufficiency Ratio
D	Market value of debt
D/V	Degree of Leverage
DCR	Debt to total Capital Ratio
DER	Debt to Equity Ratio
E	Earnings available for equity shareholders
EAT	Earning After Tax
EBIT	Earning Before Interest and Tax
EPS	Earning Per Share
GDP	Gross Domestic Product
ICR	Interest Coverage Ratio
IM	Interest Margin
JVB	Joint Venture Bank
K_d	Debt Capitalization Rate
K_e	Equity Capitalization Rate or Cost of Equity
K_m	Required rate of market return
K_o	Cost of Capital, Overall Capitalization Rate
MBL	Machhapuchchhre Bank Limited
MM Approach	Modigliani-Miller Approach
MV	Market Value
MVPS	Market Value Per Share
NBL	Nepal Bank Limited

NEPSE	Nepal Stock Exchange
NI Approach	Net Income Approach
NOI	Net Operating Income Approach
NRB	Nepal Rastra Bank
P/E Ratio	Price Earning Ratio
PE	Probable Error
RBB	Rastriya Banijya Bank
R_f	Required rate of return
ROA	Return on Assets
ROCE	Return on Capital Employed
ROD	Return on Total Deposit
ROSE	Return on Shareholder's Equity
S	Market value of equity
SEBON	Security Board of Nepal
V	Value of Firm

CHAPTER - I

INTRODUCTION

1.1 Background of the Study

The term capital denotes the long-term funds of the firm. The long-term funds of the firms are financed by two major components, i.e., debt capital and equity capital. Debt capital includes long-term borrowings incurred by the firm. Equity capital consists long-term funds provided by the firm's owners. *The mix of long-term debt and equity maintained by the firm is called capital structure.* Capital structure shows, what percentage of the firm's capital is in equity and what percentage of firm's capital is in debt.

Capital structure is one of the most complex areas of financial decision making due to its inter-relationship with other financial decision variables. A financial manager must understand the firm's capital structure and its relationship to risk, return and value for attainment of its primary objective of wealth maximization.

Capital is a scare sources and much more essential to maintain smooth operation of any firm. The available capital and financial sources should be utilized so efficiently that could generate maximum return.

Capital structure is considered as the mix of debt and equity and to operate in long run prospect. A firm must concentrate in its proportion. A firm can raise required fund by issuing various types of financial instruments. Investors and creditors being the key supply of capital, they hold greater degree of risk and hence have claims over firm's assets and cash flow. Similarly debt holders are also a source of financing fund and they have risk considering firm's cash flow in uncertain and there is

probability that it may default in it's obligations to pay off it's interest ands principle. In the other hand, if a firm issues preference share, those shareholders have the priority in payment of dividend is fixed as the percentage of interest to debt, it is preferably paid off only after interest payment. Common shareholders are as the owner of the firm; they are paid from cash remaining after all payment is being made. Since the common share i.e. equity fluctuate in the market more than the preference share and debt, there is more risk.

Capital structure is the composition of the debt and equity securities and is considered as financing decision undertaken by the financial manager. The financial manager must strive to obtain the best financing mix or optimum capital structure for his firm. The firm attains capital structure where the debt-equity proportion maximizes the market value of the shares .the uses of debt affect the return and risk of the equity shareholder, it increases the return on equity fund and at the same time it also increases risk. A proper balance must be strike between the risk and return in order to maximize the market value of shares (Pandey, 1995:54).

Capital structure is very crucial part of financial management as the various composition of debt and equity capital may impact different on risk and rate of return to equity capital may impact differently on risk and enterprises are raised either through the ownership securities and creditor ship securities. A business enterprise has to maintain a proper mix of both the securities in a manner that the cost and risk perception to the shareholders are minimized. The mix of different securities is portrayed by the firm's capital structure (Koiralla, 1990:105).

The above statement states in brief that either fund is raised by debt or equity financing, risk is associated in proportion of its uncertainty is

being paid off. The required rate of return expected by investors according to their risks is cost of capital. Therefore a firm should try to obtain necessary fund at lowest cost. This cost of capital is fully dependent upon the proportion of debt and equity i.e. financial leverage, which is actually the capital structure used by the firm.

Capital structure concepts has important place in financial management theory. It is basically decision is concerned with shareholders wealth maximization. As capital refers to the proportion of debt and equity, a choice in proportion is actually financial decision in case to fulfill investment requirement. Therefore, it is a wise decision to select a financing mix, which maximizes shareholders wealth.

1.1.1 General Background of Banks

Bank is an institution that deals in money and its substitute and also provides other financial services. Bank accepts and makes loan as well as derives a profit from differences in interest rates paid and charges respectively.

The term “Bank” is originated from the Latin word “Bancus” which refers to the bench on which the banker would keep its money and his/her records. Some persons trace its origin to the French word “Banque” and the Italian word “Banca” which means a bench for keeping, lending and exchanging of money or coins in the market place by moneylenders and moneychangers.

The first bank called the “Bank of Venice” was established in Venice a city and sea-port in north-east Italy, in 1157 to finance the monarch in his wars. But actually, it was not a bank in broad sense but simply an office for the transfer of the public debt. Many of the early banks dealt primarily

in coin and bullion, much of their business being money changing and the supplying of foreign and domestic coin of the correct weight and fineness. As a first central bank, "The Bank of England" was incorporated on July 27, 1694, as a private joint-stock association, with a capital of £1.2 million. In return for the loan of its entire capital to the government it received the right to issue notes and a monopoly on corporate banking in England.

The present structure of financial institutions is based on the foundation laid by commercial banks. The commercial banks command the highest share of national resources, which must be utilized for the rapid economic development of the company. Realizing the importance of commercial bank, Dr. Pant has remarked, "Indeed no institution has greater or closer interest in well established, expanding and successful industry and agriculture than a commercial bank" (Pant, 1971:125).

Commercial banks are stated as a key component of the financial institution. They can play vital role in accelerating the pace of economic development of the country through the mobilization of the scattered savings and channeling it in the real sector of the economy. Besides that, commercial banks grant business loan on the basis of proposal and also grant traditional loan with the guarantee of valuables i.e. gold and silvers.

In order to fulfill the demand and need of modern banking transactions and to remove all the inconveniences, in past time Nepal Bank Limited was established on 30th Kartik 1994 B.S. as the first commercial bank in the country. Before the establishment of NBL, there was hardly any source other than the organized money market to meet the financial needs of people. As there was political change in 2007 B.S., solid and important events took place in 2012 B.S. because of establishment of Nepal Rastra

Bank as a control bank. The Rastriya Banijya Bank (RBB) which is fully state-owned came into existence on 22nd Magh 2022 B.S. under RBB Act 2021 with the explicit objectives banking facilities to areas or regions of the country not covered by Nepal Bank Ltd. and making RBB's activities more development oriented rather than profit oriented. Various branches in various times were opened by these two banks. And after two decades of establishment of RBB, Joint venture bank Nabil bank was established in 2040 B.S. Then after commercial banks were established with joint stock and increasing tremendously. However, we can say that the development of commercial banks in 7 decades history is very much satisfactory.

There are 31 commercial banks in the country licensed by NRB as of mid July 2011. At the time of expanding the branches of commercial banks, emphasis was given to the deposit mobilization and credit disbursement. However, the importance of the quality-credit could not be recognized and the banking sector failed to witness the expected developments. Subsequently, the banking sector faced the problem of bad debts, overdue loans, accrued interest, accumulation of non-banking assets and excess liquidity in the banking system. In addition to these expected happenings, new challenges were added to the Nepalese banking sector due to the adverse developments in the domestic economy resulting from the deteriorating peace and security situation and continuous persistence of natural calamities inside the country on one hand and global recession primarily caused by international terrorism on the other. Viewing the need of structural is reform amidst these adverse implications. NRB recently issued directives to run commercial banks in a healthy competitive manner to ensure the sustainable development of the overall

banking system. The list of commercials banks registered and operating in Nepal are as follows:

Table No. 1.1

Commercial Banks are Operating in Nepal

S. N.	Name	Operation Date (A.D.)	Head Office
1	Nepal bank Limited	1937/11/15	Kathmandu
2	Rastriya Banijya Bank	1966/01/23	Kathmandu
3	Agriculture Development bank Limited	1968/01/02	Kathmandu
4	NABIL Bank Limited	1984/07/16	Kathmandu
5	Nepal Investment Bank Limited	1986/02/27	Kathmandu
6	Standard Chartered Bank Limited	1987/01/30	Kathmandu
7	Himalayan Bank Limited	1993/07/07	Kathmandu
8	Nepal SBI Bank Limited	1994/06/05	Kathmandu
9	Nepal Bangladesh Bank Limited	1994/10/18	Kathmandu
10	Everest Bank Limited	1994/10/08	Kathmandu
11	Bank Of Kathmandu Limited	1995/03/12	Kathmandu
12	Nepal Credit & Commercial Bank Limited	1996/10/14	Siddhartha Nagar, Rupandehi
13	Lumbini Bank Limited	1998/07/17	Narayangadh
14	Nepal Industrial & Commerce Bank Limited	1998/07/21	Biratnagar, Morang
15	Machhapuchhre Bank Limited	2000/10/03	Pokhara, Kaski
16	Kumari Bank Limited	2001/04/03	Kathmandu
17	Laxmi Bank Limited	2002/04/03	Birgunj, Parsa
18	Siddhartha Bank Limited	2002/12/24	Kathmandu

19	Global Bank Limited	2007/01/02	Birgunj, Parsa
20	Citizens Bank International Limited	2007/06/21	Kathmandu
21	Prime Commercial Bank Limited	2007/09/24	Kathmandu
22	Sunrise Bank Limited	2007/10/12	Kathmandu
23	Bank of Asia Nepal Limited	2007/10/12	Kathmandu
24	DCBL Bank Limited	2008/05/25	Kathmandu
25	NMB Bank Limited	2008/06/05	Kathmandu
26	Kist Bank Limited	2009/05/07	Kathmandu
27	Jnata Bank Limited	2010/04/05	Kathmandu
28	Megha Bank Nepal Limited	2010/07/23	Kathmandu
29	Commerz & Trust Bank Nepal Limited	2010/09/20	Kathmandu
30	Civil Bank Limited	2010/11/26	Kathmandu
31	Century Bank Limited	2011/01/23	Kathmandu

Sourece: NRB

Machhapuchchhre Bank Limited was registered in 1998 as the first regional commercial bank to start banking business from the western region of Nepal with its head office in Pokhara. Today, with a paid up capital of 1627196560 million rupees, it is one of the full fledged commercial bank operating in Nepal; and it ranks in the topmost among the private commercial banks.

Machhapuchchhre Bank Limited is striving to facilitate its customer needs by delivering the best of services in combination with the state of the art technologies and best international practices.

Machhapuchchhre Bank Limited is the pioneer in introducing the latest technology in the banking industry in the country. It is the first bank to introduce centralized banking software named GLOBUS BANKING SOFTWARE developed by Temenos NV, Switzerland. The bank provides modern banking facilities such as Any Branch Banking, Internet Banking and Mobile Banking to its valued customers.

The bank in the last few years have really opened up with branches spread all around the country. At this stage, it has its Corporate Office in Kathmandu and branch offices in other parts of Kathmandu, Damauli, Bhairahawa, Birgunj, Banepa, Dhankuta, Ithari, Aabukhareni, Waling, Narayanghat, Butwal, Ilam and different parts of Pokhara in addition to the Head Office in Naya Bazar, Pokhara. A full-fledged banking branch is in operation in Jomsom located high up in the mountains too. The bank aims to serve the people of both the urban and rural areas. The bank intends to open many more branches in the coming years and have already envisaged the opening of 8 branches during the year 2007/08.

1.2 Focus of the Study

Capital is the most important factor from beginning of the business organization. Due to lack of the capital, the business organization cannot operate regularly their daily activities. The success of business organization depends upon proper composition of debt equity in the capital structure. The proper composition of debt and equity help to generate high return to the business organization and help in long-term solvency.

Investors invest their funds in ownership securities or debt securities of the organization with the expectation of getting favourable return in the future. In absence of proper utilization of the capital it fails to meet their

expectation and damages the creditworthiness of the organization and leads to fall the market value of the organization.

The banks are such business organization which deals with others money and the capital structure incase of the bank are very crucial. This study mainly focuses on the capital structure management of MBL.

1.3 Statement of the Problem

Today the functions of commercial bank is not only confined to do its usual functions but also to do something for the development of the economy. The development of the country depends upon the financial position in this regard; the commercial bank collects the scattered resources from different sectors and mobilizes them in productive sectors.

Commercial banks are very important for the development of a country. They channel funds from saver unit and productivity in the country. At present, there are altogether 31 commercial banks operating in the country with heavy competitions. The banks are introducing various new technologies and schemers to lure to customers. Today most of the banks have introduced E-banking services, ATM, Debit and Credit Cards, Any Branch Banking and Mobile Banking systems. The banking business is one of the fastest growing businesses in the country.

The study of capital structure for banking business is very essential since the business is operated with outsider's funds. The capital structure decision is important for long run profitability and solvency of the business. Generally, high debt-equity ratio is concerned to be disadvantageous from owner's point of view especially when the firm is earning higher rate of return on the capital employed.

The study of the capital structure in banking business is very important as it deals with other money. The capital structure decision also impact upon long run profitability and solvency of the firm. The capital structure decision is important for long run profitability and solvency of business. Generally high debt-equity ratio is considered to be disadvantageous from owner's point of view especially when the firm is earning higher rate of return o the capital employed. The financial manager must be able to maintain appropriate proportion of debt-equity to avoid financial risk. The proportion of debt in the banking business is obviously larger than in any other business. The banks accumulate deposit from various unit groups paying certain percent interest and mobilize in productive sector and earn high return. The banks are considered as mechanism to canalize the funds from the small saver to the productive sectors. The study of capital structure, in case of banking business very important of liquidation of one bank creates contagion effect over the economy of the country. In this study, debt is considered to be cost bearing liabilities (i.e. saving deposit, fixed, call deposit and short term loan).

Under new policy of commercial banks, NRB directed the entire bank to increase the capital to Rs. 1 billion by mid July 2009 through minimum 10 percent paid up capital increment every year effective from mid may 2002. So, the banks are being highly sensitive business. NRB reforms their policy from time in favours of depositors and owners of the companies.

The problems area for the study is reflected in the following research questions:

i) Does the capital structure affect the cost of capital?

ii) Is the sample bank capable to enhance the earning by its capital structure?

iii) What is the relation between capital structure, profitability and EPS of the bank?

1.4 Objective of the Study

The major objectives of the study are to evaluate the capital structure of Machhapuchchhre Bank Ltd., Kathmandu Office. It is the study about the capital structure & profitability of MBL by taking the financial data. It tries to analyze the overall capital structure & profitability. The specific objectives are as follows:

i) To evaluate the effect of capital structure on the cost of equity of MBL.

ii) To analyze the debt serving capacity of MBL.

iii) To analyze the relationship between capital structure and profitability, cost of capital, EPS of MBL.

1.5 Significance of the Study

The capital structure affects on the profitability and long-term financial position of the organization. The earning nature of the organization helps to adopt appropriate mix of debt and equity in the capital structure. On account of this significance, the capital structure and profitability of the organization is justified as a specific matter for the study.

The study helps to analyze the relation between the capital structure and performance of the organization and leads to design appropriate capital structure. This helps also the researcher, creditors, investors and stockholders to analyze the financial position of the organization and they

may know the impacts if capital structure on the profitability of the organization.

1.6 Limitation of the Study

This study has been made for the partial fulfillment of the requirement for the Master's Degree in Business Studies (M.B.S.) but not a comprehensive study. The study has been conducted with certain limitations. The time is the one factor of limitations. Besides it, the scope of the study is limited within the bank. Some more limitations are follows:

i) The study analyzes capital structure and profitability of a particular bank.
ii) The whole study is based on secondary data.
iii) Difficult to collect all required data, due to business secrecy.
iv) The study is fully based on the student's limited financial resources within a limited period.
v) Variation of data in itself is also found when comparing with different sources.
vi) The study is not a final study of the subject.

1.7 Organization of the Study

The study has been organized into five chapters. The title of each of these chapters is as follows:

CHAPTER I Introduction
CHAPTER II Review of literature
CHAPTER III Research methodology
CHAPTER IV Presentation and analysis of data and major findings
CHAPTER V Summary, conclusion and recommendation

Introduction chapter comprises background of the study, focus of the study, statement of problem, objectives of the study, significance of the study and limitation of the study.

Review of literature chapter comprises conceptual review of the capital structure and review of the past thesis.

Research methodology deals with the method of investigation and includes research design, nature of the data, data collection procedure and tools used.

Data presentation and analysis of data deal with different statistical and the financial tools that used in the analysis of the data.

Last chapter includes the *summary*, *findings* of the study and *recommendation*.

CHAPTER - II

REVIEW OF LITERATURE

Review of the Literature is undertaken in order to find out what works have already been conducted in the area of the concerned research problem. It promotes greater understanding of the problem under study, provides comparative data to evaluate and interpret the significance of the findings, and provides fruitful sources of hypothesis and conceptual framework. It is the chapter where a researcher reviews the books, journals, magazines or any other types of studies, which are related to his/her field of study. Research is a continuous process it never ends. The procedures and the findings may change but research continues. This chapter is focused on brief discussion about the abstract regarding the theories of capital structure and profitability management.

The purpose of reviewing the literature is to develop some expertise in one's area, to see what new contribution can be made and to receive some ideas for developing a research design. Thus, the previous studies can't be ignored because they provide the foundation to the present study. In other words, there has to be continuity in research. This continuity in research is ensured by linking the present study with the past research studies. From this, it is clear that for analyzing the data and to find something new a researcher must review the study and know if there are any studies ahead or not.

Conceptual Review of the Study

As this study follows with Capital Structure and Profitability, here it is most important to open up the conceptual thought behind it.

2.1 General Concept of Capital Structure

Capital, collective term for a body of goods and monies from which future income can be derived. Generally, consumer goods and monies spent for present needs and personal enjoyment are not included in the definition or economic theory of capital. Thus, a business regards its land, buildings, equipment, inventory, and raw materials, as well as stocks, bonds, and bank balances available, as capital. Homes, furnishings, cars, and other goods that are consumed for personal enjoyment (or the money set aside for purchasing such goods) are not considered capital in the traditional sense.

In the more precise usage of accounting, capital is defined as the stock of property owned by an individual or corporation at a given time, as distinguished from the income derived from that property during a given period. A business firm accordingly has a capital account (frequently called a balance sheet), which reports the assets of the firm at a specified time, and an income account, which reckons the flow of goods and of claims against goods during a specified period.

Capital is a scare sources and much essential to maintain smooth operation of any firm. The available capital and financial sources should be efficiently that could generate maximum return.

Capital Structure is considered as the mix of debt and equity and to operate in long run prospect. A firm must concentrate in its proportion. A firm can raise required fund by issuing various types of financial instruments. Investors and creditors being the key supply of capital, they hold greater degree of risk and hence have claims over firm’s assets and cash flow is uncertain and there is probability that it may default in it’s

obligations to pay off it's interest and principal. In the other hand, if the firm issues preference share, those shareholders have the priority in payment of dividend before common shareholders but after debt holders. Since the percentage of preference dividend is fixed as the percentage of interest to debt, it is preferably paid off only after interest payment. Common shareholders as are the owner of the firm; they are paid from cash remaining after all payment is being made. Since the common share i.e. equity fluctuate in the market more than the preference share and debt, there is more risk.

The above statement states in brief that either fund is raised by debt or equity financing, risk is associated in proportion of its uncertainty is being paid off. The required rate return of expected by investors according to their risk is cost of capital. Therefore a firm should try to obtain necessary fund at lowest cost. The cost of capital is fully dependent upon the proportion of debt and equity i.e. financial leverage, which is actually the capital structure used by the firm.

2.2 Conceptual Basis of Capital Structure

Capital Structure concept has important place in financial management theory. It is basically known as financial structure, financial plan or leverage. Financing decision of a firm, as the other financial decision is concerned with shareholders wealth maximization. As capital structure refers to the proportion of debt and equity, a choice in proportion is actually financial decision in case to fulfill investment requirement. Therefore, it is a wise decision to select a financing mix, which maximizes shareholders wealth.

The term capital denotes the long-term funds of the firm. The long-term funds o the firms are financed by two major components, i.e., debt capital

and equity capital. Debt capital includes long-term borrowings incurred by the firm. Equity capital consist long-term funds provided by the firm's owners. *The mix of long-term debt and equity maintained by the firm is called capital structure.* Capital structure shows, what percentage of the firm's capital is in equity and what percentage of firm's capital is in debt. Capital structure is one of the most complex areas of financial decision making due to its inter-relationship with other financial decision variables. A financial manager must understand the firm's capital structure and its relationship to risk, return and value for attainment of its primary objective of wealth maximization. (V.K. Saxena & C.D. Vashist, 2002: B.5.1)

A financial manager must strive to obtain the best financing mix or optimum capital structure for his/her firm. The firm's capital structure is optimum when the market value of share is maximized. The use of debt affects the return and risks of shareholders; this will increase the return on equity but also risk at the same time. When the shareholders' return is maximized with the minimum risk, the market value per share will be maximized and firm's capital structure would be optimum (Van Horne, 1983: 10).

Capital structure is permanent financing of the firm represented primarily by long-term debt, preferred stock and common stock, but excluding all short term credit (Weston & Brigham, 1982: 555).

Both debt and equity are used in most large corporation. The choice of the amount of debt and equity is made after a comparison of certain characteristics of each kind of securities, of interest factor related to the firm's and of external factors can affect the firm (Hampton, 1986: 42).

The term of capital structure is used to represent the proportionate relationship between debt and equity. The debt and equity mix of a firm is called capital structure. The capital structure decision is a significant financial decision since it affects the shareholders' return, risk and market value of shares (Pandey, 1992:663).

The importance of an appropriate capital structure is the obvious. There is a viewpoint that strongly supports the close relationship between leverage and value of firm. There is an equally strong body of opinion, which believes that financing mix or the combination of debt and equity has no impact on the shareholders' wealth and the decision on financial structure is irrelevant. In other words, there is nothing such as optimum capital structure (Khan & Jain, 1999: 11.1).

Under the assumption that a firm will attempt to maximize the run market value of ownership shares; there exists an optimum capital structure for each individual firm. It varies in different industries because the typical assets structure and stability of earning, which determine inherent risks vary for different type of production (Kulkarni, 1983: 368).

The concern of the financial decision is with the financing mix or capital or leverage. The financing decision of a firm relates to the choice of the portion of these sources to finance the investment requirement. There are two aspects of the financing decisions. First, the theory of capital structure which shows the theoretical relationship between the employment of debt and the return to the shareholders. The use of debt implies a higher return to the shareholders and also the financial risk. A proper balance between debt and equity to ensure a trade off between risk and return to the shareholders are necessary. A capital structure with

reasonable proportion of debt and equity capital is called optimum capital structure (Khan & Jain, 1984: 10).

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 (Charles, 1960: 72).

2.3 Assumptions of Capital Structure (Khan & Jain, 1999: 11.1-11.2)

Capital structure theory has some assumptions which are as follows:

a) There are only two sources of funds used by a firm: Debt and Ordinary Shares.
b) There are no corporate taxes (this assumption is removed later)
c) The dividend payout ratio is 100% i.e. the total earnings are paid out as cash dividend to the shareholders and there is no retained.
d) The firm's total assets are given and do not change. The investment decisions are in other words, assumed constant.
e) The firm's total financing remains constant. The firm can change its degree of leverage either by selling shares and use the proceeds to retire debentures or by raising more debt and reduce the equity capital.
f) The operating profits (EBIT) are not effect to grow.
g) All investors are assumed to have the same subjective probability of the future expected EBIT for a given firm.
h) The firm's business risk is constant over the time and it assumed to the independent of its capital structure and financial risk.
i) Perpetual life of the firm.

2.4 Classification of Capital Structure (Saxena & Vashist, 2002: B.5.1-5.2)

There are different classifications of capital structure. These are mentioned below:

1. Simple Capital Structure

(i)

Balance Sheet as at…….

Equity Share Capital	Rs.2,00,000	Fixed Assets	Rs.1,20,000
		Current Assets	80,000
	2,00,000		2,00,000

(ii)

Balance Sheet as at…….

Equity Share Capital	Rs.1,60,000	Fixed Assets	Rs.1,20,000
	40,000	Current Assets	80,000
Retained Earnings	2,00,000		2,00,000

2. Complex Capital Structure

(i)

Balance Sheet as at…….

Equity Share Capital	Rs.1,80,000	Fixed Assets	Rs.1,20,000
	20,000	Current Assets	80,000
Current Liabilities	2,00,000		2,00,000

(ii)

Balance Sheet as at…….

Equity Share Capital	Rs.1,40,000	Fixed Assets	Rs.1,20,000
Preference Share Capital	40,000	Current Assets	80,000
Retained Earnings	20,000		
	2,00,000		2,00,000

(iii)

Balance Sheet as at…….

Equity Share Capital	Rs.80,000	Fixed Assets	Rs.1,20,000
Preference Share Capital	40,000	Current Assets	80,000
Retained Earnings	20,000		
Debentures and long term loan	60,000		
	2,00,000		2,00,000

(iv) Mostly short-term liabilities are omitted in considering capital structure, but some authors (for example, J.R. Lindsay and A.W. Samtez) have held the view that considering the importance of bank credit, etc. it is better to include all liabilities (long-term and short-term) in consideration of capital structure. The view is not common view. If this view is also considered, the capital structure will be shown as follows:

Balance Sheet as at…….

Equity Share Capital	Rs.80,000	Fixed Assets	Rs.1,20,000
Preference Share Capital	40,000	Current Assets	80,000
Retained Earnings	20,000		
Debentures and long term loan	40,000		
	20,000		
Current Liabilities			
	2,00,000		2,00,000

Normally, current liabilities are considered only in working capital analysis and not in the analysis of sources of long-term funds.

3. Classification Based on Sources

Under this category long-term funds can be financed from (i) Internal capital, and (ii) External capital. Internal capital includes bonus issue, capital reserve and reserves and surplus. External capital refers to share capital, share premium, forfeited share, debentures and long-term liabilities.

4. Classification Based on Ownership

(i) Ownership capital comprises of equity share capital and retained earnings.

(i) Debt capital includes debentures and long-term loans.

Preference share capital is treated both as part of ownership capital or as part of debt capital. It should be grouped based on the view taken by the management.

5. Classification Based on Cost Behaviour

Classification is also attempted based on cost behaviour of various sources of capital, i.e., fixed cost capital and variable cost capital.

Fixed cost capital includes preference share capital, debentures, long-term debt.

Variable cost capital includes equity share capital.

2.5 Theories of Capital Structure

2.5.1 Net Income (NI) Approach

Two capital structure theories, i.e., the net income approach and the net operating income approach, were propounded by David Durand. According to NI approach, the firm can increase its total valuation (V), and lower its cost of capital (K_o) when it increases the degree of leverage (D/V). The optimum capital structure can be attained when the cost of capital of a firm is the lowest and value of the firm is the greatest. The main feature of the NI approach is that a firm can lower its cost of capital continuously by use of debt capital and thus increase its total valuation. Reduction in the cost of capital (i.e., more and more use of debt and increase in the value of the firm) is possible when:

i) Cost of debt (K_d) is less than cost of equity (K_e) and it remains constant;
ii) The firm does not become more risky in the minds of investors and creditors consequent upon increase in the degree of leverage (Saxena & Vashist, 2002: B.5.3).

The financial leverage according to the NI approach is an important variable in the capital structure decision of the firm. With the judicious

mixture of debt and equity, a firm can evolve an optimum capital structure which will be the on, at which value of the firm is the highest and overall cost of capital the lowest. At that structure the market price per share would be maximum. If the firm uses no debt 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 on (Pandey, 1984: 412).

According to this approach, there is optimal capital structure where the market price per share of stock is maximum. The significances of this approach are that a firm can lower its cost of capital continually and increase its total valuation by the use of debt funds. This will increase use of leverage overall cost of capital declines and total value of the firm rises (Khan & Jain, 1984: 411).

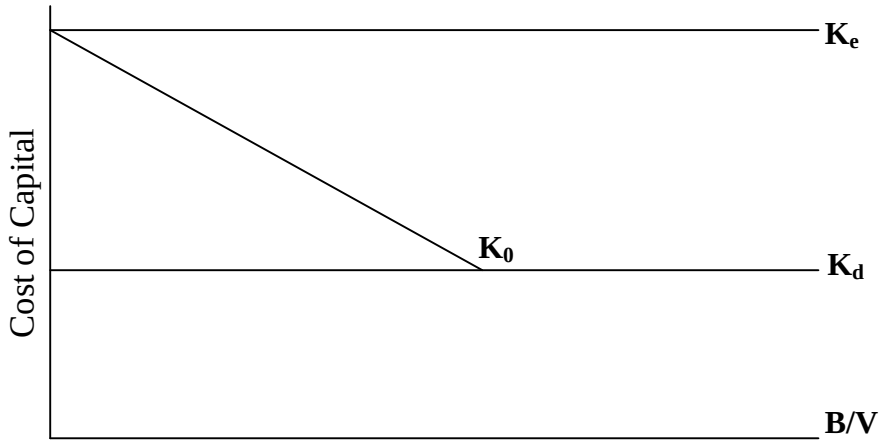


Fig. No. 1

Graphically, the effect on the firm's cost of capital and its total market value is shown in Figure No. 1. If cost of debt and cost of equity are constant as is assumed in the NI approach, then the proportion of cheaper debt funds in capital structure increases, the cost of capital decreases.

Thus, under the NI approach the firm can lower its cost of capital and raises its total market value through the addition of debt capital (Gitman and Pinches: 710).

Assumption of Net Income (NI) Approach

NI approach is based on the following three assumptions:

a) The cost of debt is less the cost of equity.

b) The debt content does not change the risk perception of the investors, as a result the equity capitalization rate K_e and the debt capitalization rate K_d remain constant with change in leverage.

c) There are no corporate taxes. Therefore as firm increases its leverage by increasing its level of debt relatives to equity, the overall cost of capital declines (Saxena & Vashist, 2002: B.5.3).

As per NI approach, the value of the firm can be determined as under:

$$V = S + D$$

Where,

V = Value of the firm;

S = Market value of equity;

D = Market value of debt.

Market value of debt can be determined as follows:

$$S = E/K_e$$

Where,

S = Market value of equity;

E = Earnings available for equity shareholders;

K_e = Equity capitalization rate or cost of equity (Saxena & Vashist, 2002: B.5.3).

2.5.2 Net Operating Income (NOI) Approach

NOI approach was also advocated by David Durand. This approach is diametrically opposite to the net income approach. The essence of this approach is that the capital structure decision to the firm is irrelevant. Any change in leverage will not lead any change in the total value of the firm and the market price of shares, as the overall cost of capital is independent of the degree of leverage (Saxena & Vashist, 2002: B.5.5).

Assumption of Net Operating Approach (NOI) Approach

NOI approach is based on following assumptions:

a) Overall cost of capital (K_o) does not vary with leverage, i.e., it remains constant for all degree of leverage.
b) Both Earning Before Interest and Taxes (EBIT) and overall cost of capital (K_o) are constant and independent of leverage. Value (V) of the firm does not change as leverage is changed. The market capitalizes the value of the firm as a whole. The split between debt and equity is not important. The value of the firm is found out by capitalizing the net operating income (EBIT) at overall cost of capital (K_o). Thus:

$$V = \frac{EBIT}{K_o}$$

c) The value of equity (S) is a residual value, which is arrived at by subtracting the value of debt (D) from the constant of the firm (V), i.e.,

$$S = V - D$$

d) The cost of debt, i.e., K_d is a constant.

The cost of equity (K_e) is arrived at as follows:

$$K_e = \frac{EBIT - I^*}{S}$$

Where, I^* = Interest

The use of cheaper debt capital increases the risk to shareholders. This raises the cost of equity or capitalization rate.

The main point of NOI approach is that cost of equity (K_e) increases with increase in leverage, but the cost of debt (K_d), the weighted average cost of capital, K_e and total value of the firm V remain constant (Saxena & Vashist, 2002: B.5.5).

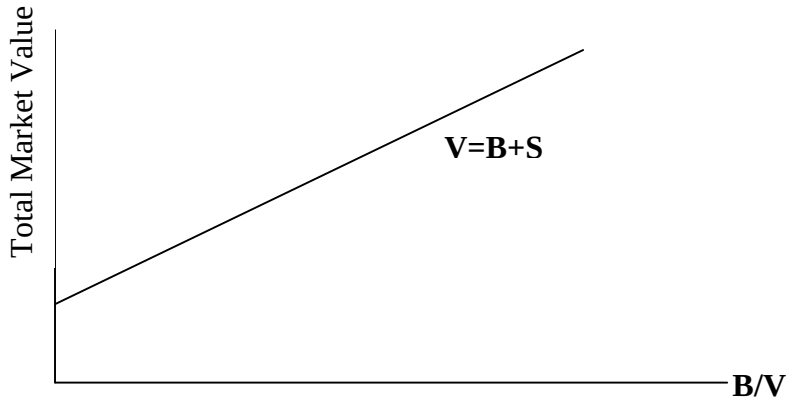
Features of Net Operating Approach (NOI) Approach

⇒ Total market value of the firm (V) is obtained by capitalizing net operating income (EBIT) at the overall cost of capital (K_e), which is constant.

⇒ Total value of the stock (S) is found by subtracting the value if debt from total market value of the firm.

⇒ The cost of equity (EBIT - I)/S tends to rise in correspondence in the degree of leverage.

⇒ The overall cost of capital is an average of the cost of debt and equity.



Financial Leverage

Fig. No. 2

Under the NOI approach, the capital structure selected is a “more detail” since the value of the firm is independent of the firm’s capital structure. If the firm increases its uses of financial leverage more debt directly offset by an increase in the cost of equity capital. This relationship as presented in Figure No. 2 indicates that as more debt is added to the firm’s capital structure, the cost of equity capital rapidly rises. According to NOI approach, the cost of debt has two parts. The explicit cost which is represented by the interest rate, and an implicit or hidden cost, which result from the increased cost of equity attribute to increase in the degree of financial leverage. At extreme degree of financial leverage, this hidden cost becomes very high. Hence, the firm’s cost of capital and its total market value is not influenced by the use of additional “cheap” debt funds (Gitman & Pinches: 792).

2.5.3 Modigliani– Miller’s (M-M) Hypothesis

Franco Modigliani and Meron H. Miller (M-M) developed a hypothesis, which fundamentally affects the understanding of effects of gearing. They argue that in the absence of corporate tax, cost of capital and the market value of the firm remain invariant to the changes in capital structure or degree of leverage (Saxena & Vashist, 2002: B.5.7).

Assumptions of Modigliani – Miller’s (M-M) Hypothesis

The M-M Hypothesis is based on following assumptions relating to the capital market, behaviour of investors, actions of the firm and tax environment.

a) The securities are traded in perfect market. This means that investors are free to buy and sell securities. The investors can

borrow from the market at the rate of interest at which firms can borrow.

b) The investors have homogeneous expectations.
c) It is possible to classify the firms into homogeneous risk classes. The firms in a given risk class are equally risky and their expected future earnings are capitalized at the same rate, i.e., in a given class, the firms have same expected and required rate of returns.
d) The dividend payout ratio is 100%, i.e., firms distribute all net earnings to shareholders.
e) There is no corporate tax. This assumption was later on removed (Saxena & Vashist, 2002: B.5.7).

Based on the above assumptions, the M-M Hypothesis gave two propositions- Proposition I and Proposition II. These propositions are discussed below:

Proposition I: - This proposition is identical to the NOI hypothesis. The M-M hypothesis argues that the market value of the firm (V), and its overall cost of capital (K_o) are independent of its capital structure. For a firm's risk class, the market value of the firm is established by capitalizing net operating income (NOI = EBIT) at an appropriate rate as follows:

$$V = S + D = \frac{EBIT}{K_o} = \frac{X}{K_o} \quad \text{or} \quad K_o = \frac{EBIT}{V}$$

Or K_o = K_d (D/V) + K_e (S/V)

V = The market value of the firm.

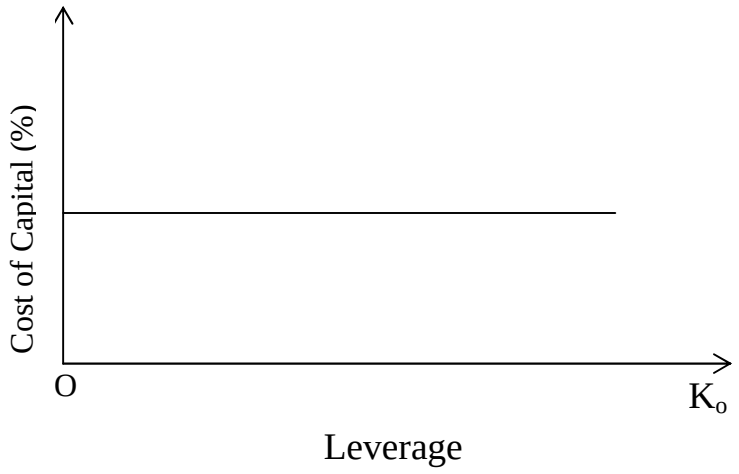
S = The market value of equity share.

D = The market value of debt.

X = Net operating income or earning before interest.

K_o = The capitalization rate appropriate to risk class of the firm.

In the above formula, EBIT is calculated before interest and for this reason it is independent of capital structure or leverage. Cost of capital K_o is equal to the capitalization rate appropriate to the risk class of the firm, and therefore, it is independent of capital structure, market structure, market value (V) must also be independent of capital structure or leverage. This is explained in the diagram given below:



Effect of leverage on cost of capital (M-M Hypothesis- Proposition I)

Fig. No. 3

The cost of capital function as hypothesis by M-M through Proposition I is shown above in Figure No. 3. It is evident from this that average cost of capital is a constant and is not affected by leverage (Saxena & Vashist, 2002: B.5.7-5.8).

Arbitrage Process: - M-M hypothesis does not accept the NOI approach as valid. It is held in this hypothesis that two identical in all respects except for their capital structure cannot command different values or have different cost of capital. M-M argue that if two firms differ only (a) in the

way they are financed, i.e., capital structure are different; and (b) in their total market values, investors will sell the share of over-valued firm and buy the shares of under-valued firm. This process will continue till the two firms have the same market value. This is called arbitrage or switching process. When the equilibrium is reached, the NOI condition will be fulfilled and the value of the firm and their average cost of capital will be the same. Thus, it is held that V and K_o are independent of capital structure (Saxena & Vashist, 2002: B.5.8).

Proposition II: - The M-M Hypothesis argues that cost of capital K_e is equal to constant average cost of capital K_o plus a premium for the financial risk. This can be written as follows:

$$K_e = K_o + \text{Risk premium}$$

The premium for financial risk equals to the difference between equity capitalization rate K_e and cost of debt multiplied by the ratio of D/S, that is:

$$K_e = K_o + (K_o - K_e) \times D/S$$

In brief, the Proposition II implies that firm's cost of equity increases to offset the use by cheaper debt capital. Alternatively, the firm's use of debt increases its cost of equity as well. Proposition II of M-M Hypothesis presumes a linear relationship between K_e and debt equity ratio (D/S) (Saxena & Vashist, 2002: B.5.9).

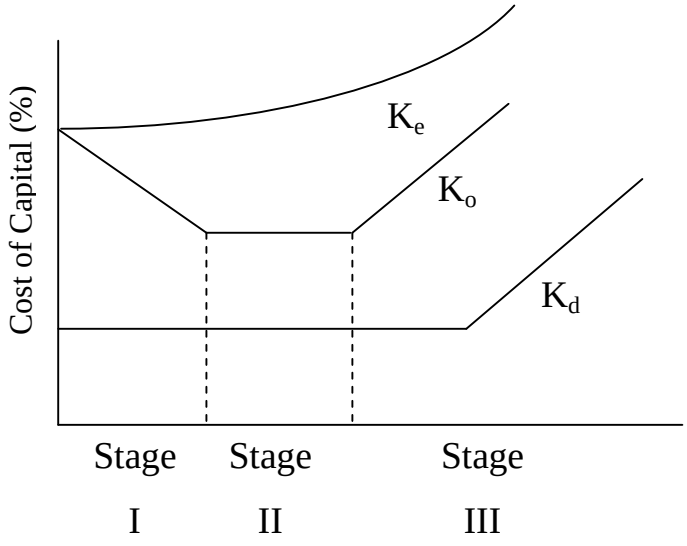
2.5.4 Traditional Approach

The traditional view, which is also known as an intermediate approach, is a compromise between NI approach and NOI approach. The crux of the traditional view relating to leverage and valuation and valuation is that

through judicious use of debt-equity proposition, a firm can increase its total value and thereby reduce its overall cost of capital (Barges, 1963: 11).

The approach justifies the view that debt capital is relatively cheaper than ordinary shares. So changing leverage i.e., using debt instead of equity capital obviously causes a decline in the overall cost of capital is minimum or raised further the firm would become financially more risky to the investors who whole penalize the firm by demanding a higher equity capitalization rate (Khan & Jain, 1992: 495).

Traditional approach is a compromise between two extremes, i.e., net income approach and net operating income approach. The advocates of this approach hold the view that the value of the firm, i.e., V, can be increased or the cost of capital can be reduced up to a certain point by a judicious mix of debt and equity capital. Beyond that, the increase of equity more than offsets the use of cheaper debt capital in the capital structure and average cost of capital begins to rise. The average cost of capital structure further rises, when cost of debt also begins to rise. The optimum capital structure is the point at which overall cost of capital is the minimum or value of the firm is maximum. The essence of the traditional approach is that a firm may, through judicious mix of debt and equity, reduce the cost of capital and increase its total value. Graphically, traditional approach can be depicted as follows: (Saxena & Vashist, 2002: B.5.10)



The Cost of Capital Behaviour (Traditional Approach)

Fig. No. 4

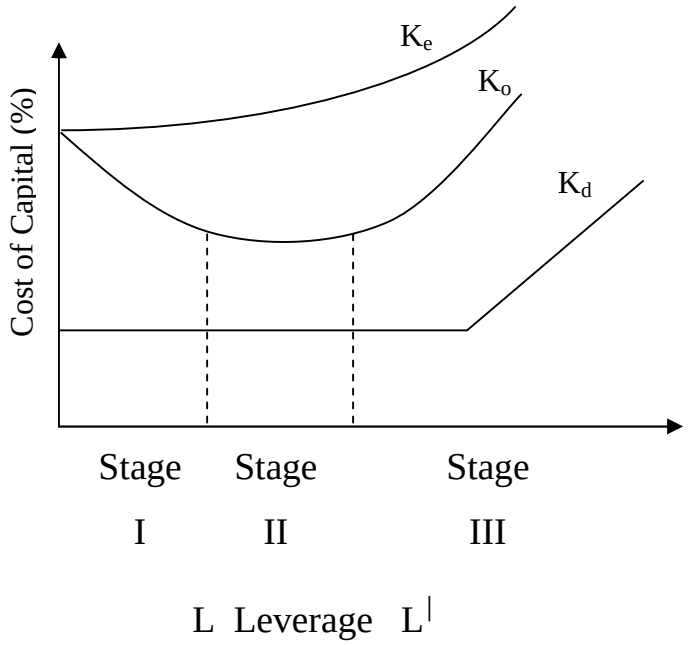
The traditional theory implies that the cost of capital is not independent of the capital structure of the firm. The traditional theory holds that this is an optimum level of capital structure. For degree of leverage before this point marginal cost of debt is less than the marginal cost of equity. Beyond this point, the marginal cost of debt exceeds that of equity (Saxena & Vashist, 2002: B.5.10).

Solomon holds the view that the reaction of the overall cost of capital to changes in capital structure can be divided into following three stages:

First stage (Increasing value):- in the joint stage cost of equity K_e remains constant or rises slightly with debt, but it does not rise fast enough to offset the advantage of low cost of debt. Thus during this stage the market value of the firm increases and the average cost or overall cost of capital. i.e., K_o decreases as leverage increases.

Second Stage (Optimum value):- once the firm has reached certain degree of leverage, increase in leverage (i.e., additions of debt capital) will have insignificant or negligible effect on the value of the firm and the cost of capital. During this stage, there is a range in which value of the firm V will be maximum and the average cost of capital K_o will be minimum.

Third Stage (Declining value):- Beyond the acceptable limits of leverage, the value of the firm V will decrease and overall cost of capital K_o will increase with in lend of leverages. This happens because both cost of debt K_o and cost of equity K_e will rise abnormally as the investors perceive high degree of financial risk. The three stages have been expressed graphically as below: (Saxena & Vashist, 2002: B.5.10 - 5.11)



Effect of leverage on Cost of Capital (Traditional Approach – A variation)

Fig. No. 5

2.6 Other Related Concept of Capital Structure

Common Stock

Common stock is a security representing the residual ownership of a corporation. It guarantees only the right to participate in sharing the earning of the firm if the firm is profitable. Common shareholders usually have the additional right to vote at stockholders meeting on issues affecting fundamental policies of the corporation. Also, the shareholders have the right to select the members of their board of directors, the right to inspect the firm's books (only for the legitimate purpose of evaluating the performance of management), and the right to obtain a list of the names and address of other shareholders (Hampton, 1986: 38).

Common equity in a corporation or partnership or proprietorship interests in an unincorporated firm constitute the first source of funds to a new business and the base of support for borrowing by existing firms. The nature of equity ownership depends on the form of the business or organization. The central problems of such ownership revolve around an apportionment of certain rights and responsibilities among those who have provided the funds necessary for the operation of the business. The rights and responsibilities attached to equity consist of positive considerations (income potential and control of the firm) and negative considerations (loss potential, legal responsibility, and personal liability) (Weston & Copeland: 931).

When the investors buy common stock, they receive certificates of ownership as proof of their part as owner of the firm. The certificate states the number of shares and their par value (Bhalla, 1983: 154).

Preferred Stock

Shares whose holders are the first to receive dividends from available profit are preference shares. Preference shares are redeemed before ordinary shares when a company is liquidated (Microsoft Encarta 2006).

Preference stock is a source of capital that is part of shareholders equity. It has lower claim priority than the firm's debt but a higher priority than its common stock (Steven E. Bolten, Robert L. Conn, 1981: 612).

Accountants classify preferred stock as equity and generally list it in the equity proton of the balance sheet under the title "preferred stock" or "preferred equity". However in financial analysis preferred is sometimes treated as debt and sometimes as equity, depending on the type of analysis being made. If the analysis is being made by a common stockholder's then the key consideration is the fact that the preferred dividend is a fixed charge, which must be paid ahead of common stock dividends, so the common stock holder will view preferred stock as being similar to debt. Suppose, however that the analysis is being made by a bondholder studying the firm's vulnerability to failure due to a decline in sales and income. If the firm's income declines the debt holders have a prior claim ahead of preferred stockholder's to the available income and if the firm fails, debt holders have prior claims to assets when the firm is liquidated. Thus to the bondholder preferred stock is similar to common equity. From management's perspective preferred lies between debt and common equity. Since the dividends on preferred stock are not a fixed charge in the sense that failure to pay them represents a default on an obligation, preferred stock is safer to use than debt. On the other hand, if the firm is highly successful, then the common stockholders will not have to share that success with the preferred stockholders, because preferred

dividends are fixed. We see then, that preferred has come characteristics of debt and some the characteristic of common stock and it is entirely appropriate (Brigham, pg no. 510).

Long-term Debt

If an existing obligation is not to be paid within one year or current operating cycle (whichever is longer) or replaced by another current liability, it is properly classified as long-term liability. The most frequently encouraged long-term liabilities are holds payable; long-tern notes payable, lease obligations, pension obligations, differed taxes, other long-term deferrals and occasionally contingent liabilities.

The use of borrowed funds is known as the trading on equity. The customary reason for using borrowed fund is the expectation of investing them in a capital project that will provide a return in excess of the cost of the acquired funds.

When additional funds are needed to expand the business or for current operations, a corporation has the choice of issuing debt or equity securities. There are four basic reasons why a company may wish to issue debt rather than equity securities.

⇒ Bonds may be the only available source of funds.

⇒ Debt financing has a lower cost.

⇒ Debt financing offers a tax advantage.

⇒ The voting privilege is not shared.

Debenture

The word “debenture” has derived from the Latin word ‘debere’ meaning merely a debt and it has nothing to do with the security or lack of it.

A corporate debenture is a security representing a long-term promise to pay a certain sum of money at a certain time or over the course of the loan, with a fixed rate of interest payable to the holder of the debenture. Debenture have significant place in corporate finance. It enables to have funds without sharing control with the holders of the security. It may be unsecured or secured, convertible or non-convertible.

Retained Earning

Retained earning is also called reinvested earnings. It is increased in stockholders equity due to profitable operation. It may be capital reserve, revenue reserve etc.

Dividend

Dividend, in corporation finance, a fund appropriated out of the profits of a corporation and distributed among its stockholders; also the share of the fund received by a stockholder. Dividends are usually declared periodically (quarterly, semi-annually, or annually) by the directors of a corporation. The action of a board of directors with respect to the declaration or non-declaration of dividends is usually final and conclusive upon the stockholders and is subject to review by the courts only in the event that the action is arbitrary or capricious.

Dividends are distributed on a proportional basis; the fractional share of the total dividend received by stockholders is equal to the proportional share of the stocks owned by them. Holders of the preferred stock of a

company generally have a prior right to the payment of dividends over holders of common stock, and if their stock so provides, are paid at a fixed periodic rate. Preferred dividends may be cumulative or non-cumulative. Cumulative dividends are those that, if not paid for one or more periods, constitute charges on the profits of succeeding periods and must be paid at a future date before dividends may be distributed on common stock. Non-cumulative dividends, if omitted, do not constitute charges on future profits. Dividends may take the form of additional shares of stock or of the right to purchase stock for a fixed sum per share; such dividends are called stock dividends and rights.

The term *dividend* is applied also to the assets of a bankrupt or insolvent business that are distributed among its creditors during the course of its liquidation. The term is used in insurance to signify the sum appropriated out of profits for distribution among policyholders whose policies so provide; such dividends may be used to reduce the next premium (Microsoft Encarta 2006).

Dividend, in the normal use of the word, refers to that portion of retained earnings that is paid to stockholders. Dividend policy refers to the policy or guidelines that management uses in establishing the portion of retained earnings that is to be paid in dividend (Bhalla, 1983: 167).

2.7 Determination of Capital Structure

There is some element of capital structure for decision. Without study of these element, the company cannot make appropriate capital structure and analysis of leverage may be incomplete. So we have to make a study of determinants of capital structure in the following ways.

EBIT / EPS Analysis

In the study of leverage the EBIT-EPS analysis is must because it is a method of financing under various assumptions of EBIT that should raise its capital position in different situation. In that situation, they have to choose better capital source as per the profitability of the company in the near future. To make balanced and appropriate capital structure for better future, the company needs to select different alternatives from different source in different proportion. The EBIT-EPS analysis is one of the best ways by which, we can understand the exclusive use of equity capital, debt capital, preference capital, a combination of different proportion and so on. These are analytical instrument, which will be useful in planning the capital structure and increasing earning before interest and taxes with greater value of EPS.

The main objective of any company is to maximize the market value of the firm as well as shareholder's wealth position. Keeping this in view, the EBIT-EPS analysis should be considered logically at the first stage of designing capital structure. The EBIT-EPS analyses show the impact of various financial alternatives on EPS at various levels of EBIT. This method involves the comparison of alternative method of financing under various assumptions as to EBIT. With these methods, the financial manager can make an appropriate financial decision.

Cost of Capital

Cost of capital is generally used in the sense of overall cost of capital. This overall cost of capital is comprised of the costs of various components of financing, i.e., the sources from which the capital has been raised. Each source has got own cost. All these costs are combined to compute overall cost of capital of a firm.

Cost of capital is a very widely used term in the literature of finance. It is defined as the minimum rate of return (or required rate of return), that a firm must earn on its assets in order to maintain its market value and attract needed funds. It is the rate of return at which the market value of a firm remains unchanged. In capital investment proposals, cost of capital is used as discounting rate or hurdle rate, or cut-off rate that is applied to projects' cash flow stream to determine whether the project is worthwhile or not. One of the financial objectives of a firm is to earn more than cost of capital. It is the rate of return required by those who invest in the firm (Saxena & Vashist, 2002: B.5.16).

Flexibility

Flexibility means the firm's ability to adopt its capital structure to the needs of changing condition. The firm should keep flexible financial plan in order to economize use of funds by substituting one from financing other.

The restrictive covenants are commonly included in long-term loan agreement and debenture. The covenants in loan agreement may include restriction to distribute cash dividend, to purchase assets or to raise additional external financial. The firm also is required to maintain a certain ratio, as debt equity ratio or current ratio at certain ratio.

The firm having the discretion of refunding its debt and preference shares capital can enjoy considerable degree of flexible. The financial plan of the firm should be flexible enough to change the composition of the capital structure as warranted by the firm's operating strategy and needs.

2.8 General Concept of Profitability

Profit, in business, the monetary difference between the cost of production and marketing of goods or services and the prices subsequently received for those goods or services. Profit is an essential competitive feature of buying and selling in the economic system. The opposite of profit is loss, whereby the cost of producing certain goods or services is higher than the price a buyer is willing to pay for them. In free market economy, the will to make and function by profits is termed the *profit motive*. Though normally taken as the basic motive for business, its universality has been challenged by the theory of the firm. Japanese firms, especially, are renowned for preferring market share over at least short-term profits.

The term 'Profit' is being used in several senses. According to Prof. Knight, "Perhaps no term or concept in economic discussion is used with a more bewildering variety of well-established meaning that profit". Some writers have defined it as the percentage returns on investment of capital while others have called it the reward of ownership. Some have referred to it as reward for risk-taking, while others have called it as a reward for entrepreneurship. There are still others who have defined profit as the residual income which results after all the three factors of production have been paid off. To get an accurate meaning of profit, it appears necessary to distinguish gross profit from net profit (Seth M.L., 1998: 438).

The profit and simply the money gained from a sale, which is more than the money spent. According to the dictionary of commerce, profit is termed as to describe the surplus resulting after a defined trading period but must be regarded as the first essential charge upon business, being a

reward for engaging resources in conditions of speculative risk for the satisfaction of consumer resources of speculative risk for the satisfaction of consumer demand. It furnishes resources to invest in future operations and consequently its absence must result in a decline in effective capital resources and ultimately competitive extinction of the business.

The term ‘profit’ can be used in two senses. As a owner oriented concept it refer to amount and share of national income which is paid to the owners of business, that is those who supply equity capital as variant is described as profitability. In other word, profitability refers to situation where output exceeds input that is the value created by the use of resources is more than the total of input resource.

Profitability is a deviation of the term profit which explains ability to make a profit is a primarily a measuring rod of success of business enterprise. It is the basic test performance of any business simply stating. Profit is money excess of sale over money spent but the term “Profit” is very controversial and there are several different interpretations about it.

An economist will say that profit is the reward of entrepreneurship for risk taking. A labour leader might say that it is a measure of how efficiently labour has produced and that it provides a base for negotiating a wage increase. And investor will view it is a gauge of the return on his/her money. An internal revenue agent might regard it as a base for determining income taxes. The accountant will define it simply as the excess of firm’s revenue over expenditure of producing revenue in given fiscal period (Lynch & Williamson, 1989: 99).

In this regard, American Institute of Banking says, “Under the free enterprise system like USA, the interest of the nation as well as those of the individual stockholders is supposed to be best served by vigorously

seeking profit. But the profit cannot be a sole objective of an enterprise and an enterprise should not be evaluated just on the ground of the profit it earned. Neither bank nor the community will be the best served it the banker unreasonably sacrifices safety funds of the liquidity of bank in an effort to increase income" (American Institute of Banking, 1972).

Every business firm has different types of goal. Profit maximization is the goal of business. Profit is very important for business firm. It is equally important as for is water. To cover cost of staying in business such as replacement of machines, furniture, obsolescence of machines, market or technical risks etc. Profit is essential in the sense to the self-financing principal. It provides structure and helps to minimize cost of capital. Profit of business is attraction for investors. So investors would invest their money where there is adequate profit. Hence profit is required to ensure and satisfy the entire expectation of management, shareholders, investors, employees and nation as whole.

2.8.1 Traditional Approach towards Profit

Profit maximization is the traditional approach of business environment and economic theory on the ground of profit for firm. In the economic theory, one of the assumptions is profit maximization. It always assumes that a firm sets a target to maximize the profit and is discretionary behaviour of the firm, so in the managerial economics, to maximize profit is the central belief.

"Profit is the measurement of the business firm's overall performance. A business firm can claim it to be successful if it can maintain maximum profit to justify the worth of return on investment. This helps business firm to save from shortage of funds and provides best opportunities to

under take the expansion of assets to enlarge business" (Shrestha, 1980: 23-24).

The promise of profit provides a strong incentive to owners and manager to act efficiently. Therefore it is common in economic theory to hypothesis that the criteria for evaluating the action of the firm are profit maximization. The basic incentives for business are to produce goods and services. The profit in this sense is revenue that remains after deducting both explicit and implicit costs, including nominal profit considered of the entrepreneur's services. "Profit is essential for every enterprise to survive in the long run as well as to maintain capital adequacy through retained earning. It is also necessary to accept market for both and equity to provide funds for increased assistance to the productive sector" (Robinson, 1951: 21-22).

2.8.2 Modern Approach towards Profit

Business environment is totally different from past to today. In past time one of main objectives of firm was profit maximization. But today salsas maximization is the main objective of the firm. So that firm's objective may be to maximize its growth rate or satisfaction shareholders' wealth maximization.

Today every business firms finance by equity owners, creditors. Professional management is related to customer, employee, government and society concerned with firm. Besides other objectives of business firm, wealth maximization of shareholders' is normal objective of firm or otherwise a firm should set a standard for reasonable profit.

There are threats given to profit maximization and the economists to the profitability concept of firm give so many alternatives. Though there are

denials towards profitability maximization model of a firm. Economists still do not have unified views to cover the alternative model when markets are perfect competitive, monopolistic or oligopolistic form. Therefore, the profitability model is still in the existence. A business firm still prefers to maximize profit as far as possible. “Business has multiple goals and the needs of survival, goodwill, security and both commonly call for some sacrifice of short term profits. Most business does, however, rate profitability consistently high among their term objectives and it could be argued short term goal such as security and growth rate, subordinate to long term profitability.”

2.9 Review from Past Thesis

Shambhu Prasad Parajuli had carried out a study on “Capital & Ownership Structure: It’s Impact on Profitability: a case study of Nepal Lever Limited” **(2001)**. He found that firm’s debt equity ratio has been decreasing & has reached zero level from the fiscal year 2055/56. This in other words means that the management has decided against the use of leverage in its financial structure. But the firm could do well if it does lever its financial structure as the ROE has decreased from the fiscal year 2055/56 i.e. the year in which it relinquished its long term debt from the financial structure. From the Du pont analysis, it is seen that the asset use efficiency if some what consistent over the study periods but profit margin and equity multiplier is in decreasing trend which caused continuous decrease in ROE over the period. Now it appears that ROE could be levered up by increasing amount of debt in the firm.

The current liabilities also have been increasing with the decrease in the long term debt. The increase in current liabilities would affect the liquidity aspects of the firm. The flexible financing policy implies surplus cash and little short-term borrowing. But in the case of NLL, it is just

opposite. To rely on current liabilities for the employment of capital increases the profitability that the firm will experience long lived asset with short term borrowing, maturity mismatching would necessitate frequent & is inherently risky because short term interest rate are more volatile than longer rates.

Therefore he has suggested to maintain a proper capital structure by including long term debt also.

Kamal Raj Pathak had carried out a study on "Capital and Profitability: a comparative case study between Nepal Indoseuz Bank Ltd. and Nepal Grindlays Bank" **(1999)**. The capital structures of both banks are highly levered, so it is difficult for them to interest and principal that may ultimately lead them to liquidity and bankruptcy. There is no significance relationship between debt and equity ratio in term of fixed deposits to net worth and overall capitalization rates of the banks. The ROE fluctuation is found to be influenced by the dividend payout ratio and interest margin in NIB Ltd. Both banks vary in the total assets, number of bank branches and volume of truncations. Both the banks are efficient and well established and doing well. He has suggested that NIB Ltd. should expand assets and branches, which ultimately affect the bank's performance and increase the profitability more than ever.

G.B. Tamang had done the comparative study about two Hotels, Yak & Yeti and Soaltee, which is entitled "An Impact of Capital Structure on Profitability" **(2001)**. He has found that to provide maximum returns to the shareholders and to increase the value of the firm, the firm has to focus on profit which is one of the measurements of successful firm in planning its most optimal capital structure. By analyzing the debt to equity ratio in terms of long-term debt and shareholders equity, both Hotels' D/E ratios are not higher according to the standard ratio, which

constitute 1:1. Hotel Yak & Yeti is trying to be levered company, which has practice of increasing the D/E ratio, since 2055/056 by approximately 27% every year. While calculating the correlation coefficient, he found that Hotel Soaltee has negative correlation and there is safety to lenders last year, which is indicated by the decreasing D/E ratio. Hotel Soaltee does not have financial leverage that is why changes in EBIT are not able to bring multiplier and increase the use of assets efficiently. In other words to get higher ROE, both Hotels have once higher profit margin but it is impossible to get high profit margin every time. So thy should try to increase assets turnover and redeem the amount of total debt, otherwise such debt would be a burden in terms of paying fixed interest while Hotels are not getting high profit. He has also recommended that they should give equal importance to other factor like operating efficiency and assets efficiency, etc. and the government also should make effective tourism policy.

Gautam Raj Giri had conducted a thesis on "Capital Structure Management of Listed Joint Venture Commercial Banks" **(2006)**. He studied on two joint venture commercial banks; they are Standard Chartered Bank Nepal Limited (SCBNL) and Nepal Bangladesh Bank Limited (NBBL). He found that JVBs have lack of theoretical and practical knowledge with regard to capital structure theories. Nepalese investors are not attracted by the theories. JVBs in Nepal have concentrated their business with big businessmen and industrialists. Their clients are mostly big manufacturer; carpet and garment exporters, multinational companies, large scale of industries, NGOs as well as INGOs, travel agencies, cargo agencies, housing companies etc. Therefore, the JVBs are suggested to open their doors to the small depositors and entrepreneurs also. The capital structure of selected banks is highly levered. The proportion of debt and equity capital should be

decided keeping in mind the efforts of tax advantage and financial distress. The banks, when they are in difficult to pay interest and principal, ultimately lead to liquidation or bankruptcy. For such, the banks should reduce the high use of debt capital. Return ratios like; return on total assets and return on shareholder's equity are not satisfactory in NBBL. SCBNL seems very good performing than NBBL in case of ROE. The savings from rural communities are neglected by JVBs, without which they can't contribute much to the economic development of the country. So, JVBs recommended being cooperative and should expand the branches by covering all the five development regions of the country including rural areas to achieve geographically balanced approach. JVBs are basically not concentrated to mobilize their deposit funds in productive areas. Nepalese shareholders are very much concerned about the payment of cash dividend by the joint venture banks rather than their financial statement. He has suggested paying cash dividend consistently. He also has suggested expanding branches and assets, which ultimately affect the banks capital structure and expected to increase the profitability more than the present. Last but not the least; the banks have to enhance effectiveness, efficiency and proper coordination of its departmental tasks by continuously reviewing its structural design in accordance with the need of the changing time and situation.

Ramesh Raj Aryal had submitted a thesis study on "An evaluation of Capital Structure of Bottlers Nepal Limited" **(2001)**. He has found that the long-term debt on BNL is increasing year by year because the company has borrowed more long-term debt. Different ratio analyses show the inefficient capital structure management of the company. He had made his analyses only five years periods and he suggested that the company has to follow good policy to set capital structure. The calculation of leverage position indicates the bad performance of the

company because it is in increasing trend. After doing all calculations like ratio, leverage, capital structure position, correlation and P/E ratio etc, it was found that the company is facing bad situation due to inefficient capital structure. So the company has to lower down the amount of debt and to obtain additional fund through the issue of equity share by using cheaper source of collecting funds. In order to build up public image, share must be issued to the general public. Moreover the company should think about other new product for winter season to increase good image of the company. The company ahs regarded as highly geared up capital structured company. Thus, to design suitable pattern of capital structure for the company, the management must bring about a satisfactory compromise among these conflicting factors of cost, risk, control and timing. He recommended that the company to shift debt capital to equity capital when the company has high earning per share.

This study is different from the above studies. The study revolves around the banking industry and name of the selected bank is Machhapuchchhre Bank Ltd. This study is done considering the data of five years for the bank from the year 2005/2006 to 2009/2010. This study attempts to analyze and evaluate the relationship of the capital structure with various variables as like profitability, cost of equity and so on that will provide useful information for policy maker and the implementation of suggested findings.

2.10 Research Gap

This study is different in the sense that the selected companies are very different form the above previous studies. This study done considering the data of five year (2005/6 to 2009/10) of the MBL.

CHAPTER - III

RESEARCH METHODOLOGY

3.1 Introduction

Stated, simply, research means to search again. We study the social problems again and again to find out something more about the phenomena. The first look may not always be adequate. It may be prone to error. Therefore, we look into the phenomena again and again and study the problems differently and thoroughly each time. This process of searching again and again is known as research. It is essentially a systematic enquiry seeking facts through objectives verifiable methods in order to discover the relationship among them and to deduce from them broad principle or laws. The term “Research” refers to a critical, careful and investigation or enquiry or examination or explanation having as its aim the revision of accepted conclusion in the newly discovered facts.

In this chapter, it has been used research design, nature and source of data, population and samples, data collection procedure and method of analysis. Also it has been used the methods of investigation followed by the objectives of the study, states the sources and limitations of the data in the study.

3.2 Research Design

Research design is the plan, structure and strategy of investigation conceived so as to obtain answers to research questions and to control variance.

The study is evaluative and analytical type of study regarding the capital structure and profitability. The research design used in the study is

descriptive and evaluative. The data relative to topics are collected through financial statement of the bank and other available sources. The data for five years had been collected and various financial and statistical tools had been used to resolve the objectives.

3.3 Nature and Sources of Data

Generally this study is based on secondary data. Annual report of the concerned firm, supporting data and information are collected from the office of the concerned firm and another institution. Documents, books, other publishes or unpublished material, thesis, newspapers are the important data and informal quires, with the authorities of the concerned firm is primary source in nature.

3.4 Population and Sample

In this study, all the financial statements published by the concerned bank from the beginning till the period of the study are taken as the population of the study and the statement taken to analyze about the bank is taken as the sample of the study. So the entire operating periods of the company from establishment till now is the population of the study and the period covered by this study is the sample period of the study.

This study on capital structure and profitability of MBL is based on the financial statement of the concerned bank from fiscal year 2005/2006 to 2009/2010. In this study the mentioned five-year period are take as the sample period.

3.5 Data Collection

Almost secondary data has been taken in this study. The data needed are collected from Balance Sheet, Profit & Loss Account, other related books

of account of the concerned bank, stock exchange board and Nepal Rastra Bank.

3.6 Tools and Techniques Employed

As mentioned earlier, this study is confined to the single analysis of capital structure and profitability of the private commercial bank. To reach the objectives, the collected data are computed and analyzed using statistical and financial tools.

3.6.1 Statistical Tools

Statistical tools such as simple correlation coefficient, simple regression analysis, time series and test of hypothesis etc. have been used in this study.

Correlation Analysis

Correlation analysis is defined as the statistical technique, which measures the degree and direction of relationship between the variables. Among the various methods, Karl Pearson's method is used in this study. The result of correlation coefficient lies between +1 and -1, i.e. correlation can either be positive or negative. If correlation is positive it explains that the variables are moving in the same direction. If correlation is negative, it explains that the variables are moving in the opposite direction. Correlation coefficient (r) is calculated as below:

$$r = \frac{N\Sigma XY - \Sigma X\Sigma Y}{\sqrt{N\Sigma X^2 - (\Sigma X)^2} \times \sqrt{N\Sigma Y^2 - (\Sigma Y)^2}}$$

Where,

N= number of observations.

X and Y are variables.

Regression Analysis

Regression is one of the statistical tools, which is used to determine relationship between two or more variables and to make estimate of one variable on the basis of the other variable. It helps which unknown value of one variable can be estimated on the basis of known value of the variable. In this study the researcher uses simple regression equation.

Simple Regression Model

Regression analysis shows how variables are related. Regression is the estimation of unknown values or prediction of one variable from known of the other variables. The regression equation can be determined by:

$$Y = a + bX$$

Where,

a = Intercept or Regression Constant
b = Slope of regression line or regression coefficient

Regression Constant (a)

It is known as numerical constant that determine the distance o the fitted line directly above or below the origin (i.e., Y-intercept). The value of the constant, which is intercept of the model, indicates the leverage level of dependent variable when independent variable is zero. In other words, it is better to understand that constant indicates mean or average effect on dependent variable if all the variables omitted from the model.

T- Statistic

In order to test whether the sample correlation coefficient is significance of any correlation between the variable in the population, t-test for the significance of an observed sampled correlation is applied.

The t-statistic is calculated by the following formula under H_o:

$$t = \frac{r}{\sqrt{1-r^2}}\sqrt{n-2}$$

Decision: t calculated value ≤ t tabulated at α = 5% level of significance, it is not significant

Analysis of Time Series

A series formed from a set of statistical data arranged in accordance with their time occurrence is said to be a time series. A time series shows the relation between two variables, one being the time. With the view of MBL, it helps in future forecasting & planning on the basis of past information.

To measure the Trend, Least Square Method is widely used and the straight-line trend is represented by the following equitation:

Y = a + bX ---------- (I)

Where,

Y= Estimated Value of Y
a = Value of Y variable when X=0
b = Slope of line or the amount of change in Y variable that is associated with a change of one unit in X variable.

In order to determine the value of the constants a and b, the following two normal equations are to be solved.

$$\sum Y = Na + b\sum X \text{ ---------- (II)}$$

$$\sum XY = a\sum X + b\sum X^2 \text{ ---------- (III)}$$

Where,

N = Number of years for which the date are given.

The value of 'a' and 'b' can be determined by solving equations (II) and (III). These values of a and b are substituted in equation (I) to have the required tend line. To make calculation easier, the deviation of the independent variable (i.e. time) are taken from the middle of the time period so that $\sum X=0$; then the above two equations change to:

$$\sum Y = na \qquad \sum XY = b\sum X^2$$

$$\therefore a = \sum Y/n \qquad \therefore b = \sum XY/\sum X^2$$

The constant 'a' gives the arithmetic mean of Y and the constant 'b' indicates the rate of the change.

3.6.2 Financial Tools

1. Capital Structure Analysis

⇒ Fixed deposit analysis

⇒ Fixed deposit composition and index statement

⇒ Fixed deposit to total assets

⇒ Fixed deposit to total debt

2. Shareholders' Equity Analysis

⇒ Shareholders' composition and index statement

⇒ Net worth as percentage of total liabilities

3. Analysis of Financial Mix

The financial analysis mix is performing by using ratio analysis. It is a powerful tool of financial analysis. Ratio analysis is assess enterprise efficiency and to help to find reason for inefficiency, and also to see management ratio.

Ratios reflect symptoms not causes. It is used to interpret the financial statement so that the strengths and weakness of a firm as well as its historical performance and current condition can be determined.

4. Capital Structure Ratio

The ratio indicates the proposition of debt and debt equity in financing the firm's assets. It is concerned with long-term debt solvency of a firm. Capital structure ratios are calculated to measure the financial risk and firm's ability of using the debt for the benefit of the shareholders. The capital structure ratios are as follows:

- ⇒ Fixed deposit to net worth
- ⇒ Debt to net worth
- ⇒ Fixed deposit to capital employed
- ⇒ Debt to total assets adequacy
- ⇒ Capital sufficiency ratio
- ⇒ Debt competence ratio
- ⇒ Capital structure & capitalization rate

5. Profitability Analysis

This is performed by analyzing earning capacity of the assets, expenses analysis, return ratio, market related profitability ratios to arrive at the

conclusion. Profitability analysis would be incomplete if these above aspects are not taken into considerations.

⇒ Earning capacity of assets analysis

⇒ Proportion of investment in assets

⇒ Income of assets as % of total income

6. Expenses Analysis

⇒ Major Expenses to total operating expenses

⇒ Major Expenses to total income

7. Profitability ratio to investment or Return Ratio

⇒ Return on total deposit
⇒ Return on total assets
⇒ Return on capital employed
⇒ Return of shareholders' equity
⇒ Earning per share
⇒ Dividend per share
⇒ Earning and dividend yield
⇒ Price earning ratio

CHAPTER - IV

DATA PRESENTATION AND MAJOR FINDINGS

The basic objectives of this study have been already highlighted in the first chapter. In order to achieve the highlighted objectives, analytical and research methodology have been followed. In this chapter, the researcher analyses capital structure and profitability of MBL.

4.1 Financial Analysis

4.1.1 Fixed Deposit Analysis

Fixed deposit includes only long-debt, collected from the customers, which a bank generally accepts for maximum periods of two years. The following table shows the position of fixed deposit in the bank over the past five-year (2005/06 - 2009/10).

Table No.: 4.1

Fixed Deposits Position & Index table of MBL

Fiscal Year	Fixed Deposits (Rs.)	Index	% Increase or Decrease
2005/06	2604900000	100	-
2006/07	2733359694	104.9315	4.93
2007/08	2961140677	113.2648	8.34
2008/09	3681829529	137.5948	24.34
2009/10	6754150810	221.0348	83.44
		Average Change	24.20

Source: - Annual report of the MBL

Above table shows fixed deposit position & index of MBL. In fiscal year 2006/07, fixed deposit was increased by 4.93 %. Then fixed deposit increased by 8.34 % in fiscal year 2007/08, 24.34 % in 2008/09 and 83.44 % in 2009/10. This table shows its fixed deposit is increased as well as the fixed deposit trend too. The bank was increasing fixed deposit in its capital structure or financial mix. An average collection of fixed deposit of bank was 24.20%.

Figure No.: 4.1

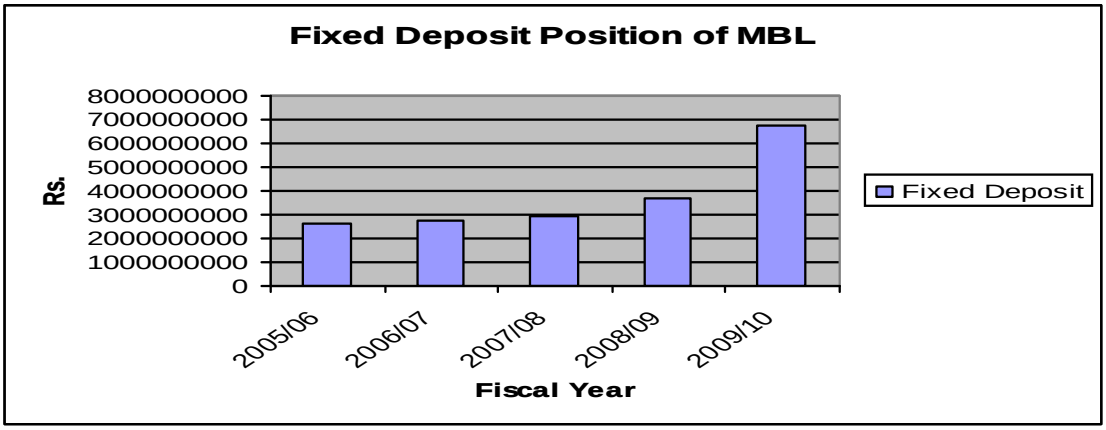


Table No.: 4.2

Fixed Deposit as Percentage of Total Liabilities of MBL

Fiscal Year	Total liabilities (Rs.)	Fixed Deposits (Rs.)	Percentage	Change
2005/06	9069830401.31	2604900000	28.72	-
2006/07	10810330518	2733359694	25.28	-3.43
2007/08	12498548226	2961140677	23.69	-1.59
2008/09	17490782101	3681829529	21.05	-2.64
2009/10	20678790827	6754150810	32.66	11.61
		Average	26.28	

Source: - Annual report of the MBL

Fixed deposit of MBL 2005/06, was 28.72% , fiscal year 2006/07; it was decreased to 25.28% i.e. changed by 3.43 of total claims on assets. In fiscal year 2007/08 and 2008/09 also decreases by 23.69 and 21.05. Then after it was in the increases in fiscal year 2009/10 by 32.66.

Table No.: 4.3

Fixed Deposit to Total Debt of MBL

Fiscal Year	Total Debt (Rs.)	Fixed Deposits (Rs.)	Percentage	Change
2005/06	8138739044	2604900000	32.00	-
2006/07	9803038594	2733359694	27.88	-4.12
2007/08	11335212600	2961140677	26.12	-1.75
2008/09	15790584000	3681829529	23.31	-2.80
2009/10	18905279930	6754150810	35.72	12.40
		Average	29.00	

Source: - Annual report of the MBL

Total debt includes deposits, borrowings from other bank, bills payable and other liabilities. In the fiscal year 2005/06 was 32%. But it was decreased to 27.88% in the fiscal year 2006/07, i.e changed into -4.12%. It was still in the decreasing trend but in 2009/10 was increased by 35.72%. On an average, 29% of fixed deposit was in total debt.

4.1.2 Analysis of Shareholders' Equity

Paid up capital, reserve and funds are included in the shareholders' equity of the bank. The reserve and funds include accumulated profit/loss, general reserve, capital reserve, share premium, exchange gain loss, proposed bonus share and other reserve. The researcher had taken shareholders' equity composition and net worth per share.

Table No.: 4.4

Composition of Shareholders' Equity of MBL (in Rs.)

Year → Particulars ↓	2005/06	2006/07	2007/08	2008/09	2009/10
Paid up capital (Rs.)	715000000 (100%)	821651300 (114.92%)	901339300 (126.06%)	1479269600 (206.90%)	1627196560 (229.58%)
Reserve and Funds (Rs.)	216091357 (100%)	185640616 (85.90%)	262007658 (121.25%)	220928496 (102.24%)	146314335 (67.70%)
Total SHS equity (Rs.)	931091357 (100%)	1007291916 (108.18%)	1163346958 (124.95%)	1700198096 (182.60%)	1773510895 (190.47%)
No. of shares	7150000	8216513	9013393	14792696	16271965.60
Net worth per share (Rs.)	130.22 (100%)	122.60 (94.15%)	129.06 (99.10%)	114.93 (88.25%)	109 (83.70%)

Source: - Annual report of the MBL

Note:- Figure in 4.2 represent percentge of respective amount

Paid up capital of MBL was increased every year. In the fiscal year 2005/06 paid up capital was 100%. Then it increased to 229.58% while preparing this thesis. Over the study period reserve and funds were found increase and decrease both, while preparing this thesis it is decrease by 67.70%. Total shareholder's equity is increasing in every year. Net worth per share also decrease while prepare this thesis.

Figure No.: 4.2

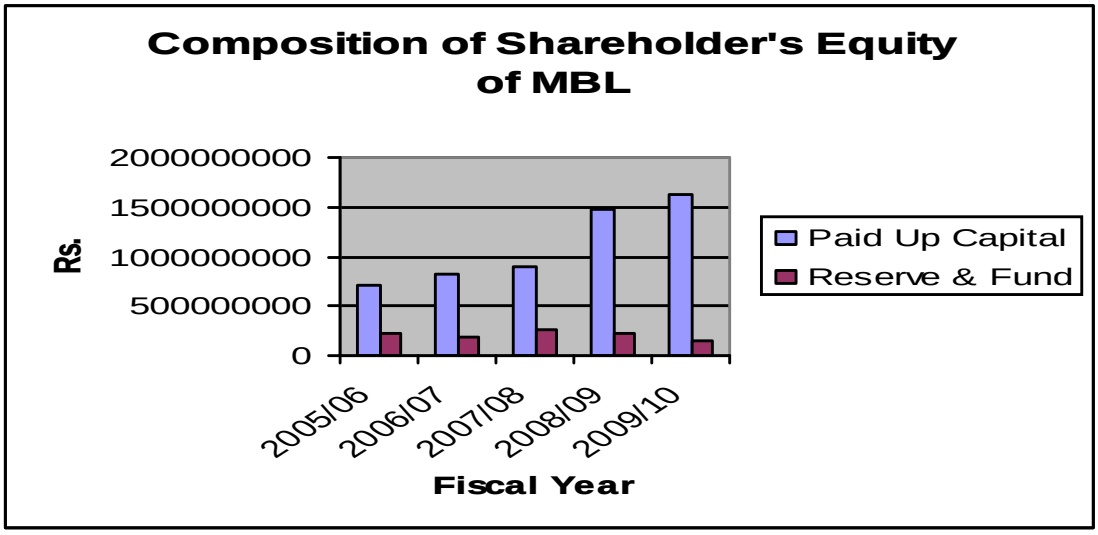


Table No.: 4.5

Net Worth to Total Liabilities of MBL (in %)

Fiscal Year	2005/06	2006/07	2007/08	2008/09	2009/10	Average
MBL	10.26	9.32	9.30	9.72	8.58	9.43
Change	-	-0.94	-0.02	0.42	-1.14	

Source: - Annual report of the MBL

Shareholders' equity of MBL was covered 10.26% in fiscal year 2005/06 of total liabilities. The proportion decreased in 2006/07 to 9.32% from last year. But shareholders' equity to total liabilities of the bank was decreasing like 9.30% in 2007/08 and 9.72% in 2008/09. Again it decreased to 8.58% from previous year. This was because of more increment of shareholders' equity over increment in total debt. On an average, the ratio was 9.43%. However the bank had lower ratio of shareholders' equity over the total claims on assets.

The following table shows increase or decrease percentage of shareholders' equity in the past five-year.

Table No.: 4.6

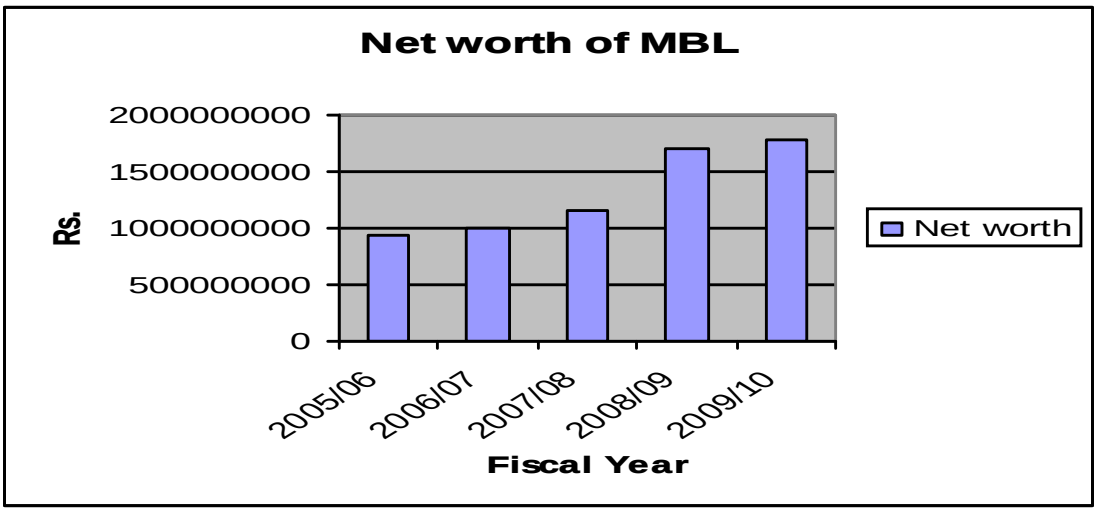
Shareholders' Equity Composition & Index of MB

Fiscal Year	Net worth	Index	% increase or decrease
2005/06	931091357	100	-
2006/07	1007291916	108.184	8.18
2007/08	1163346958	123.676	15.49
2008/09	1700198096	169.823	46.14
2009/10	1773510895	174.135	4.31
		Average change	18.53

Source: - Annual report of the MBL

There was a drastic change in the fiscal year 2001/02 i.e. of 530.73% over the study period, which was because of positively less paid up capital and negative reserve & funds in comparison to coming to coming years, then after the rate of shareholders' equity was in the increasing trend. Average changes the rate if shareholders' equity was 150.57%.

Figure No.: 4.3



4.1.3 Analysis of Financial Mix of the Bank

Using ratio analyses as financial tools for analyzing financial mix of bank, data available from bank was “Annual Report.”

4.1.3.1 Debt to Equity Ratio (DER)

It shows the relationship between borrowed funds and owner’s capital. This ratio reflects the relative claims of creditors and shareholders against the assets of the firm. This ratio measures the long-term financial viability of a firm and it is also an important tool to appraise the financial structure. It can be calculated in different ways:

Debt to equity ratio in term of fixed deposit to net worth

$$\text{DER} = \frac{\text{Fixed Deposit}}{\text{Net Worth}}$$

Debt to equity ratio in term of total debt to net worth

$$\text{DER} = \frac{\text{Total Debt}}{\text{Net Worth}}$$

A higher ratio shows a large share of financing by the creditors relatively to owners. So that, there is a large claims against the assets of the company. It would be riskier to the creditors. Smaller ratio shows smaller claims of creditors which imply sufficient safety margin and protection against shrink in assets. A high proportion of debt in the financial structure would lead to inflexibility in the operation of the company because company must pay the interest still the company.

Table No.: 4.7

DER in term of fixed deposit to net worth of MBL (in %)

Fiscal Year	2005/06	2006/07	2007/08	2008/09	2009/10	Average
DER	279.76	271.35	254.53	216.55	380.83	280.54
Change	-	-8.41	-16.82	-37.98	164.28	

Source: - Annual report of the MBL

The following table shows DER in term of fixed deposit to net worth of bank. This ratio is used to determine whether fixed deposit financing is sufficient to build up the profitability of the bank. The bank has more DER, so that the worth is less than creditors.

DER of MBL in fiscal year 2005/06 was 279.76% . In fiscal year 2006/07 it was 271.356%,254.53% fiscal year 2007/08, 216.55% in fiscal year 2008/09. Then after the next year it increased to 380.83% in fiscal year 2009/10. On an average, the bank had 280.54% of DER. The bank was highly leveraged because their business depended on the deposit rather net worth.

FigureNo.: 4.4

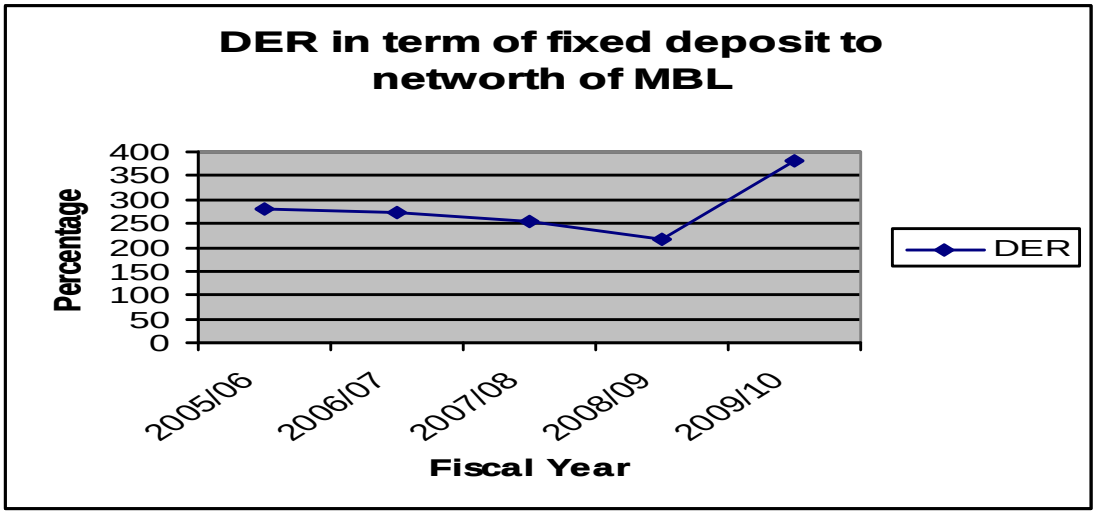


Table No.: 4. 8

DER in Term of Total Debt to Net Worth of MBL (in %)

Fiscal Year	2005/06	2006/07	2007/08	2008/09	2009/10	Average
MBL	874.10	973.20	974.36	928.75	1065.98	963.28
Change	-	99.1	1.16	-45.61	137.23	

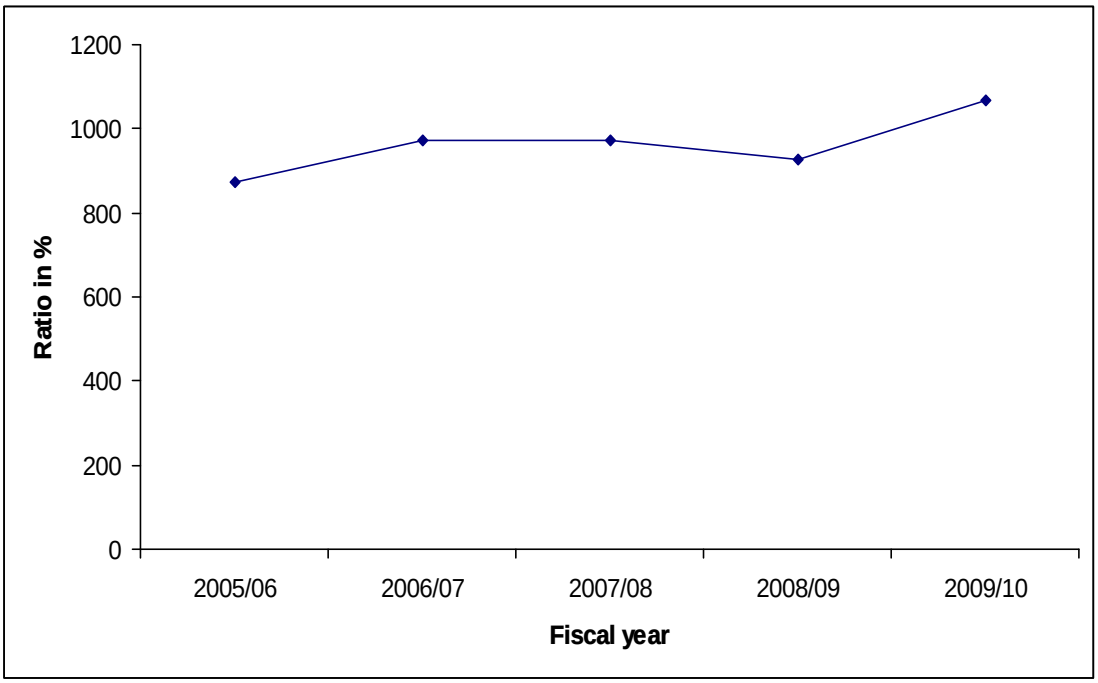
Source: - Annual report of the MBL

High ratio shows that the bank is very conservative in using debt and low shows that the bank is using excessive debt. It does not have the ability to offer assured payment of interest to the creditors.

Above table shows proportion of total debt to net worth. In fiscal year 2005/06, MBL had 874.10% of debt to net worth. Then it increased to 973.20% in fiscal year 2006/07. The proportion of debt was increasing in the fiscal year 2007/08 to 974.36% and in the fiscal year 2008/09 was decreased to 928.75%. But again total debt to net worth was increased to 1065.98% in fiscal year 2009/10. On an average the bank used 963.28% of debt to net worth. We can say that bank is leveraged over the study period. Because in using more debt and depended upon deposits and borrowings.

Figure No.: 4.5

DER in Term of Total Debt to Net Worth of MBL



4.1.3.2 Debt to Total Capital Ratio (DTCR)

This ratio indicates the relationship between creditors funds and owners capital. It states that the outsiders' liabilities are related to the capitalization to the bank and not only to the shareholders' equity. These are calculated in this ways:

$$\text{Fixed deposit to total capital ratio} = \frac{\text{Fixed Deposit}}{\text{Total Capital Employed}}$$

$$\text{Debt to total capital ratio} = \frac{\text{Total Debt}}{\text{Total Assets}}$$

Where,

Total assets = Shareholders' equity + current liabilities

Total capital employed = Shareholders' equity + fixed deposit

Table No.: 4.9

DCR in Term of Fixed Deposit to Total Capital Employed of MBL

(in %)

Fiscal Year	2005/06	2006/07	2007/08	2008/09	2009/10	Average
FDTCR	73.67	73.07	71.80	68.40	79.20	73.22
Change	-	-0.6	-1.27	-3.40	10.80	

Source: - Annual report of the MBL

Above table shows DCR in term of fixed deposit to total capital employed of MBL. This ratio constituted about 73.67% in fiscal year 2005/06. For 2009/10 is 79.20% this means about 79% of permanent capital has contributed by fixed deposit, which indicates more than the satisfactory level of long-term debt. This ratio was decreased for three years till in 2006/07 to 2008/09. On an average, fixed deposit to capital employed was 73.22%. The ratio was fluctuating over the study period.

Figure No.: 4.6

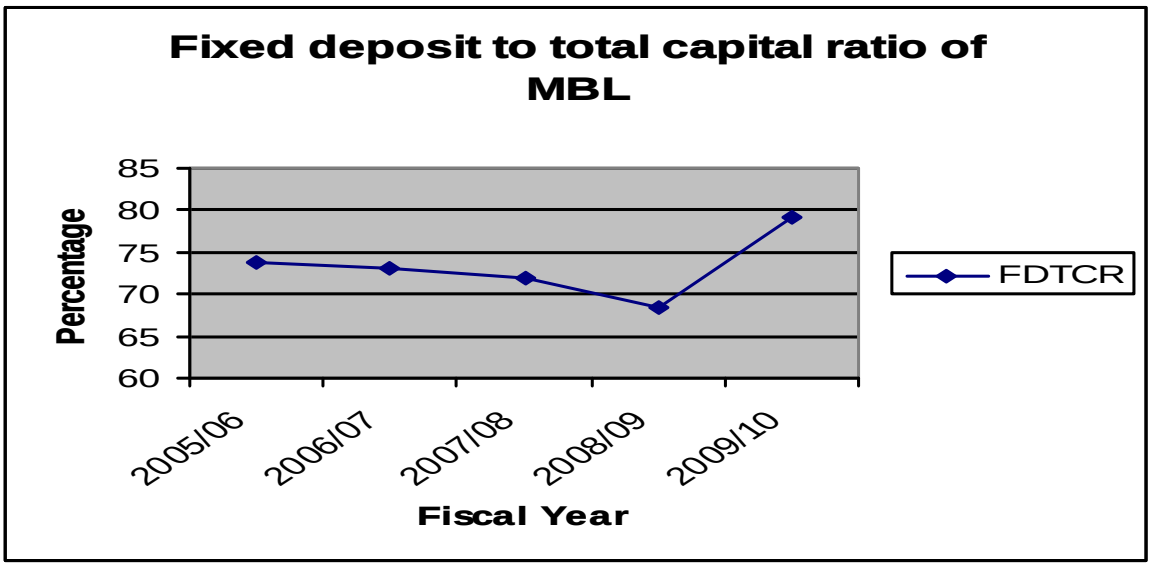


Table No.: 4.10

DCR in Term of Total Debt to Total Assets of MBL (in %)

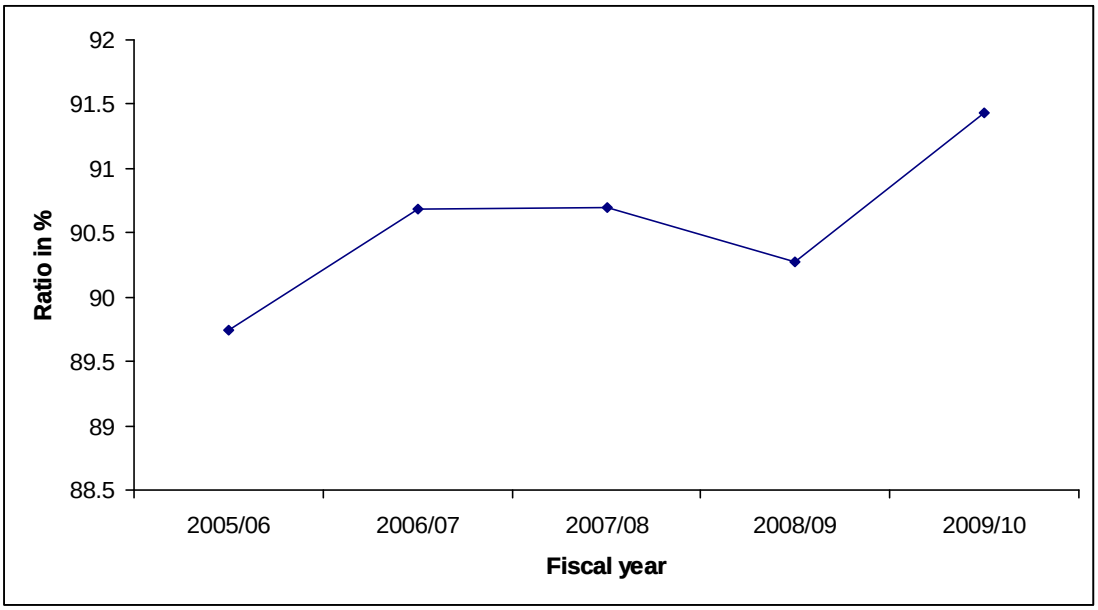
Fiscal Year	2005/06	2006/07	2007/08	2008/09	2009/10	Average
MBL	89.74	90.68	90.70	90.28	91.43	90.56
Change	-	0.94	0.02	-0.42	1.15	

Source: - Annual report of the MBL

Above table shows DCR in term of total debt to total assets. The ratio of total debt to total assets was nearly same out of the study period. There was highest total debt to total assets ratio i.e., 91.43% in fiscal year 2009/10. There was least total debt to total assets ratio i.e., 89.74% in fiscal year 2005/06. On an average, 90.56% of debt capital was used to finance.

Fig No.: 4.7

DCR in Term of Total Debt to Total Assets of MBL



Analysis of Capital Sufficiency of the Bank

It is used in case of bank to assess the strengths of the capital, the sufficiency of the capital. Appropriate capital sufficiency ratio always been a controversial issue for the commercial banks, however very higher or lower capital sufficiency ratio is considered to be unfavorable in term of lowered return or lowered solvency respectively. Capital sufficiency is calculated as below:

$$\text{Capital Sufficiency Ratio (CSR)} = \frac{Capital\ \ fund}{Total\ \ deposit}$$

Where,

Capital fund = Paid up capital, general reserve and undistributed profit

Table No.: 4.11

Capital Sufficiency Ratio of MBL (in %)

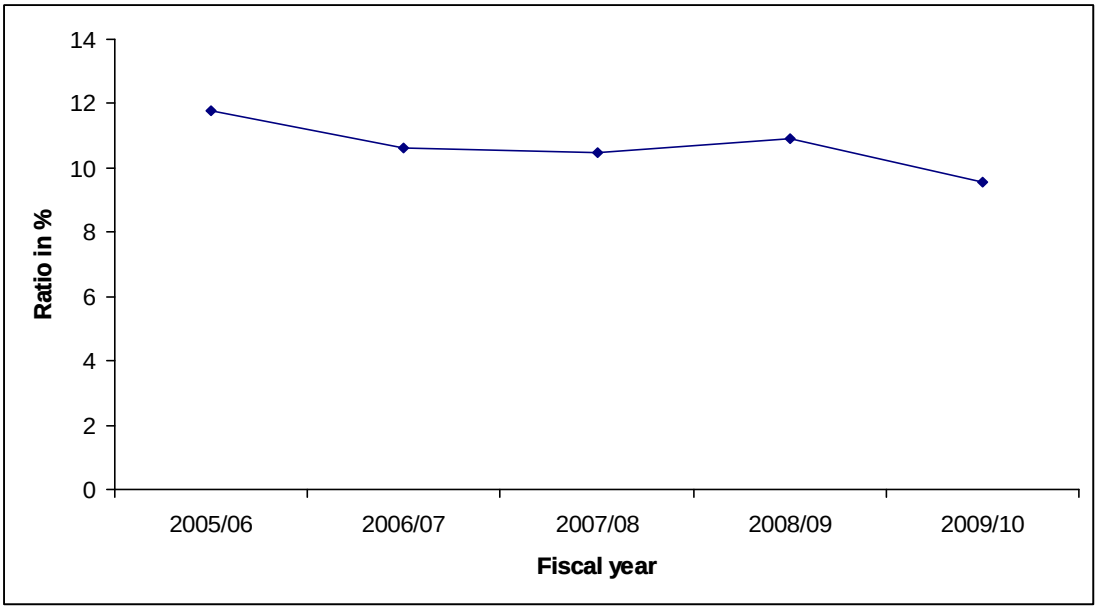
Fiscal Year	2005/06	2006/07	2007/08	2008/09	2009/10	Average
MBL	11.80	10.63	10.48	10.90	9.57	10.67
Change	-	-1.17	-0.15	0.42	-1.33	-

Source: - See appendix 11

Above table shows capital sufficiency ratio of MBL. The capital sufficiency ratio was ranged between 11.80% in 2005/06 and 9.57% in 2009/10. Capital sufficiency ratio was fluctuating over the study period. There was the highest ratio i.e. 10.90% in 2008/09. On an average the capital sufficiency ratio of MBL was 10.67%.

Fig No.: 4.8

Capital Sufficiency Ratio of MBL



Analysis of Debt Competence of the Bank

For the analysis of debt competence the bank, it has been calculated interest coverage ratio. It is one of the most conventional ratios, which measures the relationship between what is normally available from operation of the bank and claims of the outsiders. It is used to test bank's debt servicing capacity. It is calculated as below:

$$\text{Interest Coverage Ratio (ICR)} = \frac{EBIT}{Interest}$$

The ratio is too high or too low as well as unfavorable to company. High ratio implies that the bank is very conservative in using debt and low ratio implies that the bank is using excessive debt and does not have the ability to offer assured payment of interest to the creditors.

From the point of creditors the larger the coverage ratio the greater the ability of the bank to handle fixed charges and guarantee of the payment of interest to the creditors.

Table No.: 4.12

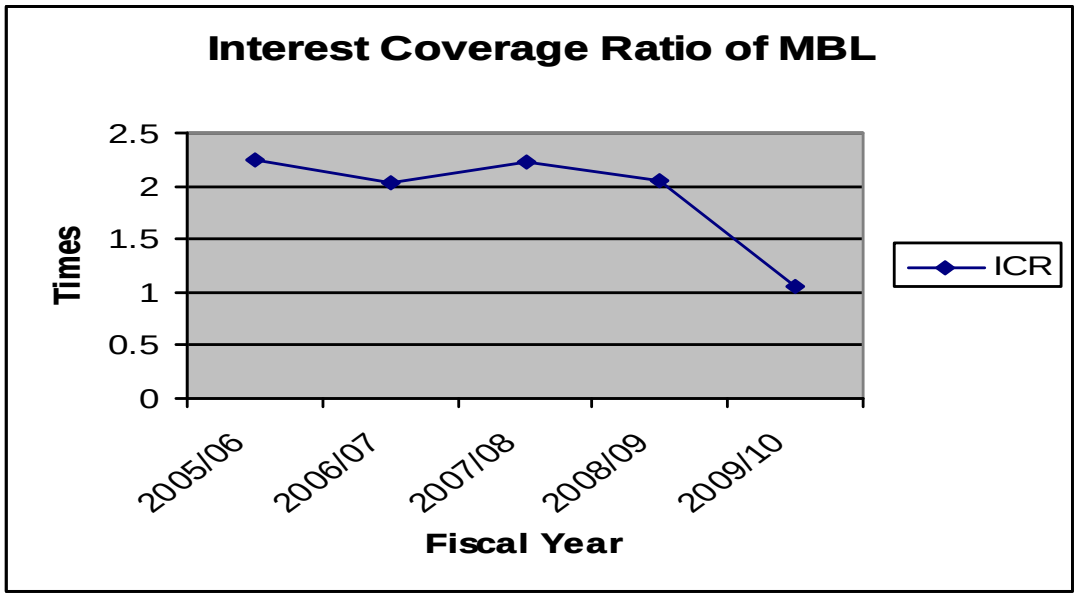
Interest Coverage Ratio of MBL (in times)

Fiscal Year	2005/06	2006/07	2007/08	2008/09	2009/10	Average
MBL	2.24	2.03	2.22	2.06	1.06	1.92
Change	-	-0.21	0.19	-0.16	-1	

Source: - Annual report of the MBL

Above table shows interest coverage ratio of MBL. In fiscal year 2005/06, the interest coverage ratio was 2.24 times which, was the greatest ratio and 1.06 times in fiscal year 2009/10, which was the lowest ratio throughout the study period. Then other years the ratio was fluctuated ranging 2.03 times to 2.22 times. All the ratios were smaller than normal times 3. On average the bank had 1.92 times interest coverage ratio, which could be considered as tight debt service capacity. The bank is able to meet the interest obligation. Interest coverage should be not being tight in banking business so that the bank could not be able to service the debt capital. In this regard the bank do not have sufficient interest ratio.

Fig No.: 4.9



Capital Structure Position of the Bank

Capital structure is a mix of debt and equity capital. So that if minimized the cost of capital and maximized the value of company, the debt capital & equity capital would be properly mixed. Fixed deposit and equity share capital were taken to analyzing the value of the bank. Net income approach is considered to find the overall capitalization and net operating income approach is considered to find out the equity capitalization rate. Value of the bank is determined by adding debt capital and equity capital. Fixed deposit is debt capital and equity capital only i.e. equity share capital is added at market price.

Table No.: 4.13

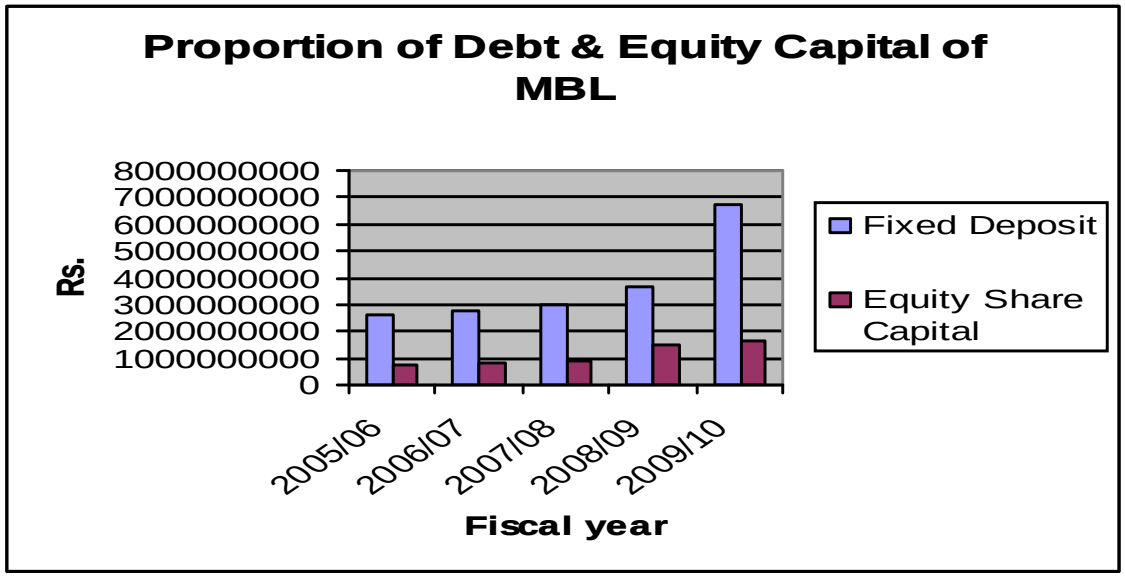
Capital Structure Mix of MBL

Fiscal Year	Fixed Deposits (Rs.)	Equity share capital	Total value of bank	Proportion
2005/2006	2604900000	715000000	3319900000	0.78:0.21
2006/2007	2733359694	821651300	3555010994	0.76:0.23
2007/2008	2961140677	901339300	3862479977	0.76:0.23
2008/2009	3681829529	1479269600	5161099129	0.71:0.28
2009/2010	6754150810	1627196560	8381347370	0.80:0.19

Source: - Annual report of the MBL

Above table shows the capital structure mix of MBL. In fiscal year 2005/06, there was 0.78:0.21 proportion debt capital to equity capital.0.76:0.23 for the fiscal year 2006/07 and 2007/08. The lower proportion was 0.71:0.28 in fiscal year 2009/10. 0.80:0.19 for the period 2009/10 which was the highest than other.

Figure No.: 4.10



Overall Capitalization Rate (K_o)

The overall capitalization rate is calculated under net income approach, which measures the financial degree of leverage of the bank. This approach assumes that the cost of debt is less than cost of equity, if financial degree of leverage is increased the weighted average cost of capital will decline as a result value of bank will increase. The higher use of debt lowers the cost of increase in value. It is calculated as follow:

$$\text{Overall capitalization rate } (K_o) = \frac{EBIT}{Value\ of\ \ firm}$$

Table No.: 4.14

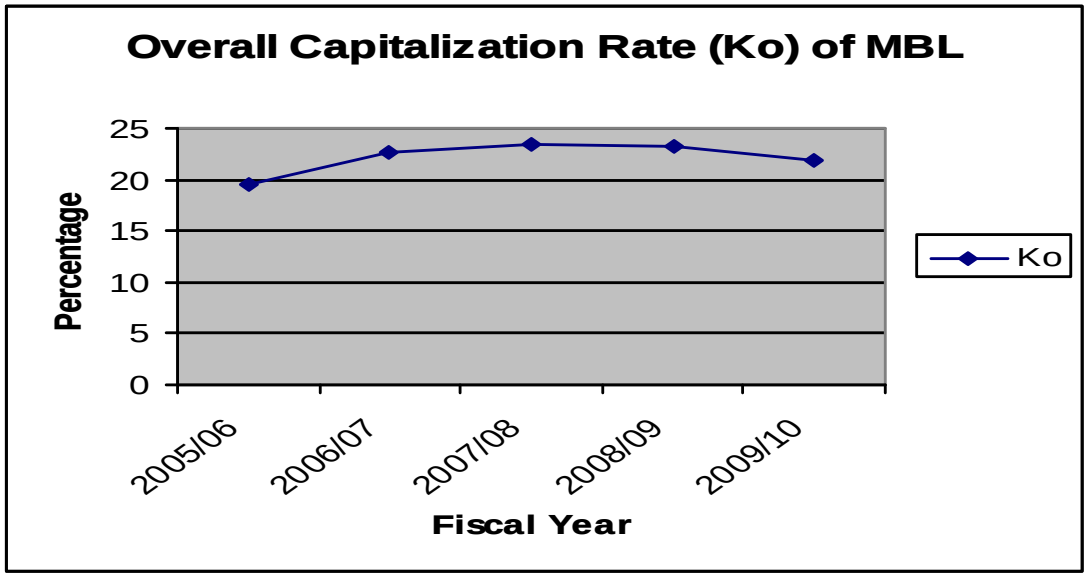
Overall Capitalization Rate of MBL (in %)

Fiscal Year	2005/06	2006/07	2007/08	2008/09	2009/10	Average
Ko	19.44	22.69	23.50	23.18	21.97	22.15
Change	-	3.25	0.81	-0.32	-1.20	

Source: - Annual report of the MBL

Above table shows overall capitalization rate of MBL. Overall capitalization rate was fluctuating over the study period. In 2005/06, there was the lowest overall capitalization rate of 19.44%. After it was increased for remaining three years ,in fiscal year 2009/10,it was the decrease of 21.97. on an average 22.15% was recorded over the study period.

Figure No.: 4.11



Equity Capitalization Rate (K_e)

The net operating income approach is considered to find out and analyze the equity capitalization rate of MBL. This approach implies that the total valuation of the bank is unaffected by its capital structure. In this approach the equity capitalization rate has to be analyzed. It is calculated as follow:

$$\text{Equity capitalization rate } (K_e) = \frac{EPS}{MVPS}$$

Table No.: 4.15

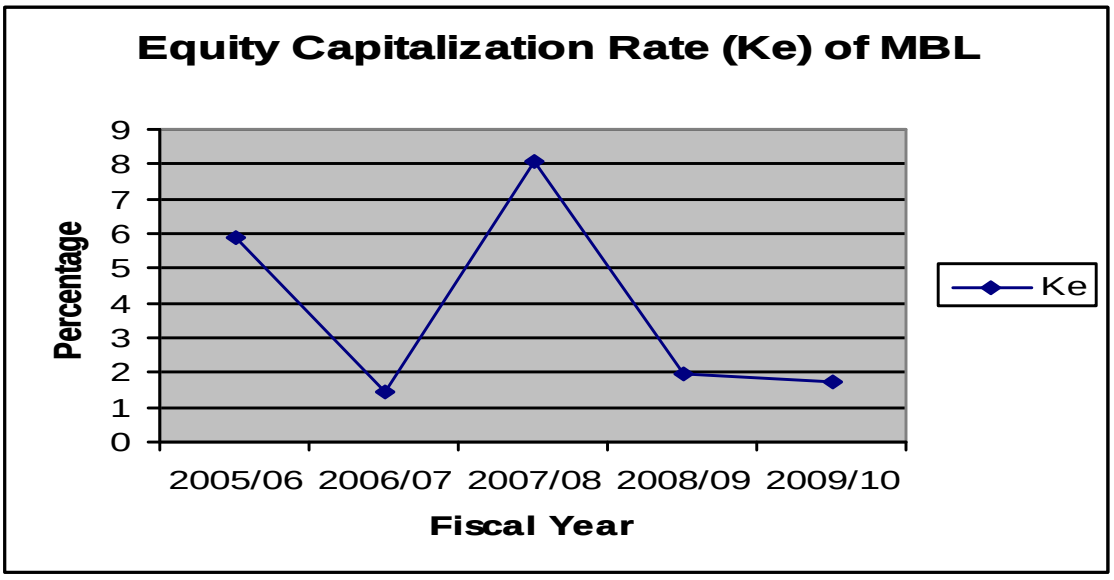
Equity Capitalization Rate of MBL (in %)

Fiscal Year	2005/06	2006/07	2007/08	2008/09	2009/10	Average
MBL	5.86	1.45	8.05	1.95	1.75	10.28
Change	-	-4.41	6.6	-6.1	-0.2	

Source: - Annual report of the MBL

Above table shows the equity capitalization rate of MBL. It was in fluctuating trend over the study period. There was highest cost of equity of 8.05% in fiscal year 2007/08 and the lowest cost of equity of 1.45% in fiscal year 2006/07. It was because earning per share was lower than market value per share. On an average cost of equity was 10.28%.

Figure No.: 4.12



4.1.4 Profitability Analysis

Profitability depends upon earning and expenditure. Every business institution should be attempted to increase earning and minimize expenses. For profitability analysis the researcher has to analyze earning capacity of assets, expenses analysis, profitability related to sales, profitability related to investment of return etc.

Earning capacity of assets analysis

It is important source of earning for the bank. Following table shows different investment in assets and income of each asset as percentage of total income according to the types of assets are expressed in percentage.

Table No.: 4.16

Proportion of Investment in Assets of MBL (in %)

Fiscal Year→ Assets↓	2005/06	2006/07	2007/08	2008/09	2009/10	Average
Loan, Advances and Bills Purchase	66.90	65.95	69.15	71.55	69.10	68.53
Investment	13.12	11.82	11.55	7.13	10.14	10.75
Other assets	1.77	1.46	1.75	1.68	2.12	1.75
Total assets	100	100	100	100	100	100

Source: - Annual report of the MBL

Above table shows the proportion of investment in assets of MBL. Investment included government securities and other investment, where the earning assets are loan & advance, Govt. securities, bills purchase. The highest earning asset was Loan, Advances and Bills Purchase, which was 68.53% in an average. The lowest earning asset was investment, which was 10.75% in an average.

Fig No.: 4.13

Proportion of Investment in Assets of MBL

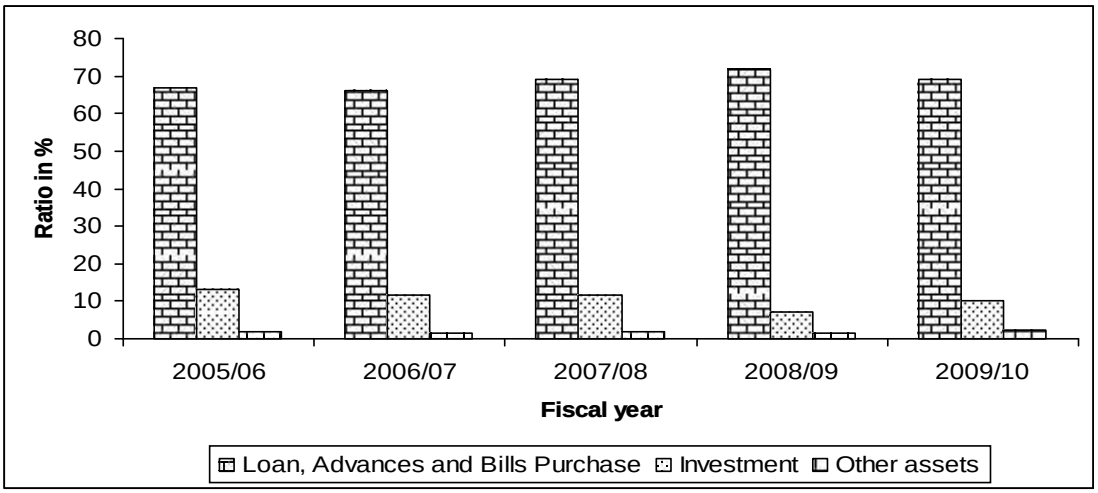


Table No.4. 17

Income of Assets as % of Total Income of MBL

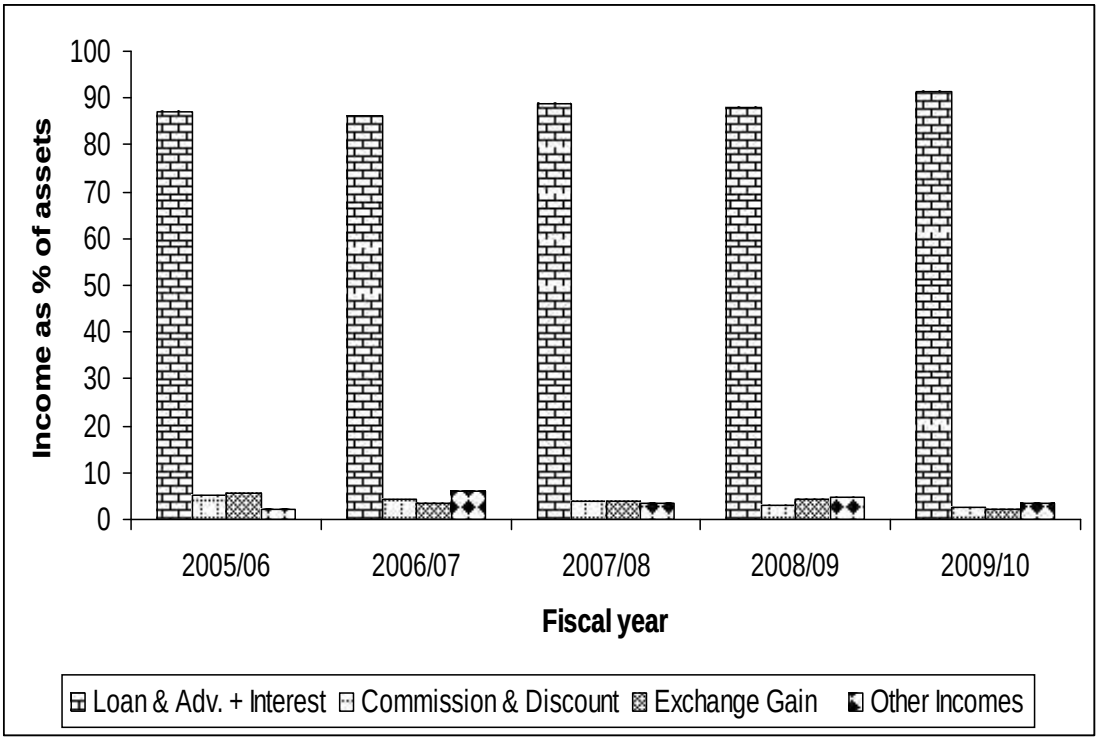
Fiscal Year→ Earning↓	2005/06	2006/07	2007/08	2008/09	2009/10	Average
Loan & Adv. + Interest	87.26	86.07	88.70	87.73	91.57	88.26
Commission & Discount	5.17	4.25	3.96	3.22	2.71	3.86
Exchange Gain	5.44	3.60	3.98	4.25	2.34	3.92
Other Incomes	2.13	6.07	3.35	4.80	3.38	3.95
Total	100	100	100	100	100	100

Source: - Annual report of the MBL

Above table shows the income of each asset of the bank. Interest was highest earning assets of the bank. In 2009/10, the loan & advance was 88.26% of total assets. Commission & Discount was going to decrease, in 2005/06 was 5.17% and 2009/10 is 2.71% on average 3.86%. Exchange Gain was 5.44% in 2005/06, it was decrease by 3.60% in 2006/07 and next two years it was increase by 3.98% and 4.25% respectively and last year 2009/10 also decrease by 2.34% on average 3.92%. Other income was fluctuate in 2005/06 was 2.03%,in 2006/07 was 6.07%, in2007/08 was 3.35%, in 2008/09 was 4.80 and 2009/10 was 3.38%, on average 3.95%.

Fig No.: 4.14

Income of Assets as % of Total Income of MBL



4.1.5 Expense Analysis

Expense flow of any business firm has to be evaluated. So that it can be able to identify major expenses of total expenses. The firm may be able to limit down the unnecessary expense. Here major expenses only analyze for the profitability analysis. It includes interest & commission paid, office operating expenses, employees expense and provision for staff bonus.

Table No.: 4.18

Major Expenses to Total Operating Expenses of MBL (in %)

Fiscal Year→ Expenses↓	2005/06	2006/07	2007/08	2008/09	2009/10	Average
Interest Expenses	80.87	97.20	81.58	94.10	164.23	103.60
Employees Expenses	12.19	13.28	14.28	14.76	21.82	15.26
Office Expenses	24.07	24.80	24.87	29.66	32.05	27.09
Provision for Staff Bonus	5.38	2.78	3.18	2.85	1.48	3.13
Bad Debt	-	-	-	-	-	-
Total	100	100	100	100	100	100

Source: - Annual report of the MBL

Table No.: 4.19

Major Expenses to Total Expenses of MBL (in %)

Fiscal Year→ Expenses↓	2005/06	2006/07	2007/08	2008/09	2009/10	Average
Interest Expenses	62.75	65.65	63.63	64.82	74.71	66.31
Employees Expenses	9.16	8.55	10.45	10.40	10.20	9.75
Office Expenses	14.40	13.14	14.80	16.61	10.95	13.98
Provision for Staff Bonus	-	3.20	0.0089	-	-	0.65
Others	3.14	2.36	-	3.35	1.18	2.00
Total	100	100	100	100	100	100

Source: - Annual report of the MBL

Above table shows major expenses to total expenses of MBL. Interest paid by MBL was fluctuating over the study period. In fiscal year 2005/06, interest expense was 62.75%. After it increased to 65.65% in 2006/07, but it decreased to 63.63% in the year 2007/08. Then in 2008/09 and 2009/10, it was 64.82% and 74.71% respectively. On an average, 66.31% of interest expenses was recorded over its total operating expenses of total income on an average interest is major expenses of the bank so that it plays an important role to increase or decrease the profit of bank.

Employees' expenses include salary & allowances, trainings, uniforms & liveries, contribution to provident fund and other staff expenses. Employees' expense of MBL was fluctuating over the study period. In 2005/06, 9.16% was employees' expenses to total operating expenses. In 2006/07, it was 8.55%. In 2007/08 it was 10.45%. Similarly, in 2008/09 and 2009/10, it was 10.40% and 10.20% respectively. On an average, 9.75%.of employees' expense was recorded over its total operating expenses.

Office operating expenses to its total operating expenses of MBL was fluctuating over the study period. In 2005/06 to 14.40%, in 2006/07 was 13.14%, in 2007/08 it was 14.80%, in 2008/09 was 16.61% and 2009/10 was 10.95%. On an average, 13.98%, was recorded over the study period.

Provision for staff bonus of MBL was fluctuating over the study period. The highest provision for staff bonus in 2006/07 was 2.36%.

4.1.6 Profitability Ratio to Investment of Return Ratio

Deposit collection and deposits are mobilized for loans & advances and other investments are major financial sources of the bank to earn profit.

This ratio helps the bank either the bank is well efficient or not in mobilizing its total deposit so that corrective action could be forward to the concerned bank. This ratio is calculated as below:

$$\text{ROD} = \frac{Net\ income}{Total\ deposit}$$

Higher the ratio signifies better mobilization and utilization of deposits and vice versa. If ratio is decreasing trend of ROD represents the weak aspect of a bank because the major fluctuation of a bank is to utilize the deposit.

Table No.: 4.20

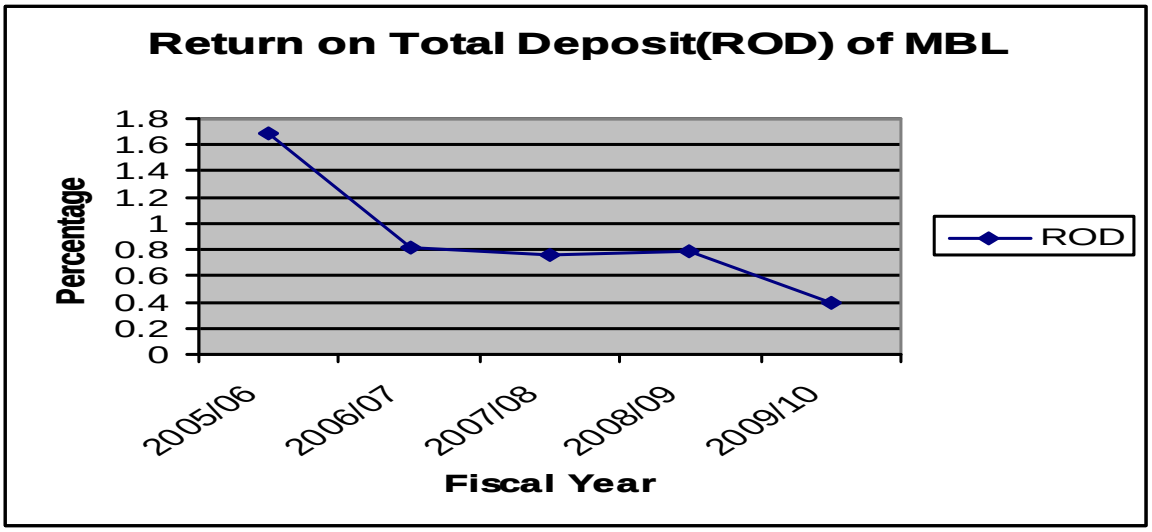
Return on Total Deposit of MBL (in %)

Fiscal Year	2005/06	2006/07	2007/08	2008/09	2009/10	Average
ROTD	1.69	0.81	0.76	0.79	0.39	0.88
Change	-	-0.88	-0.04	0.03	-0.39	

Source: - Annual report of the MBL

Above table shows return on total deposit of MBL. Return on total deposit of MBL was decreasing over the study period. It was 1.69% 2005/06. In period,2009/10, 0.39%. On an average, 0.88% was recorded over the study period.

Fig No.: 4.15



Return on Total Assets (ROA)

Return on total assets ratio measures the profitability of the firm that explains firm to earn satisfactory return on all financial invested assets otherwise its survival is threatened. The ratio explains net income for each unit of asset. Higher the ratio means efficiency in utilizing its overall resources and vice versa. It is computed as follow:

$$\text{ROA} = \frac{Net\ income}{Total\ assets}$$

Table No.: 4. 21

Return on Total Assets of MBL (in %)

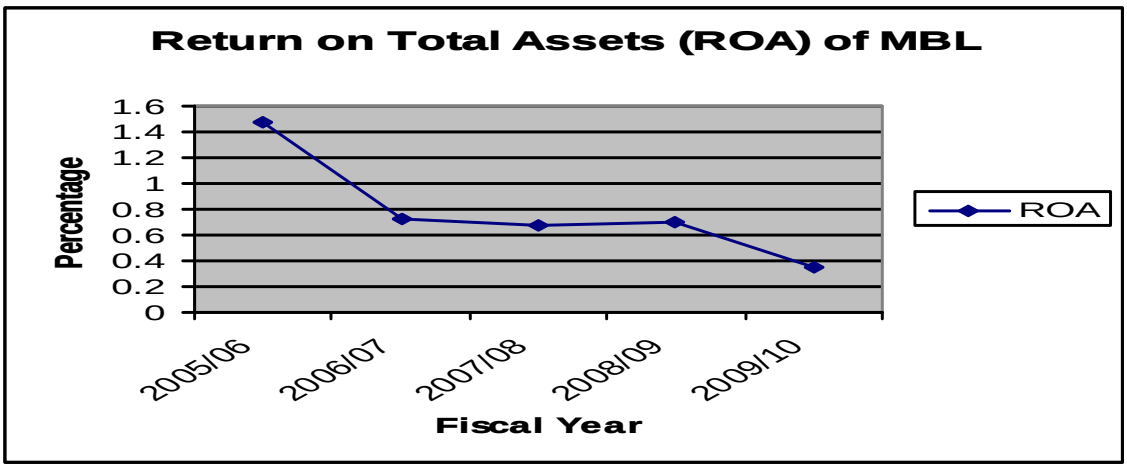
Fiscal Year	2005/06	2006/07	2007/08	2008/09	2009/10	Average
ROA	1.48	0.72	0.68	0.70	0.35	0.78
Change	-	-0.76	-0.03	-0.02	-0.35	

Source: - Annual report of the MBL

Above table shows return on total assets of MBL. It was ranged between 1.48% in 2005/06 and 0.35% in 2009/10. The highest return on total

assets was 1.48% in 2005/06, and the lowest return on total assets was 0.35% in 2009/10. On an average, 0.78% was recorded over the study period.

Fig No.:4.16



Return on Capital Employed

This is another type of return on investment, which is similar to ROI. The term "Capital Employed" refers to the fund supply by creditor and owner of the firm. The higher the ratio the more efficient is the use of capital employed. It is computed as follow:

$$\text{ROCE} = \frac{EBIT}{Capital\ employed}$$

Table No.: 4.22

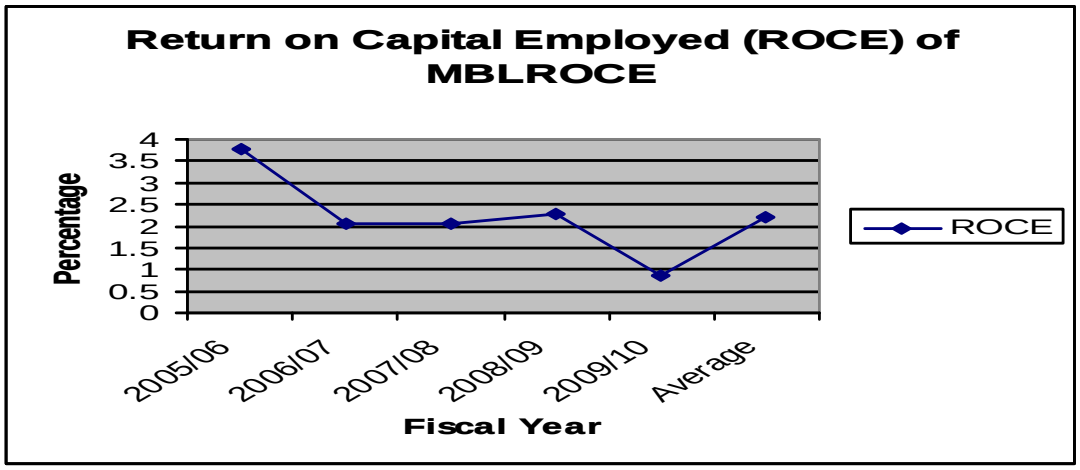
Return on Capital Employed of MBL (in %)

Fiscal Year	2005/06	2006/07	2007/08	2008/09	2009/10	Average
ROCE	3.78	2.05	2.06	2.29	0.85	2.20
Change	-	-1.73	0.008	0.22	-1.43	

Source: - Annual report of the MBL

Above table shows the return on capital employed of MBL. It was between 0.85% in 2009/10 and 3.78% in 2005/06. There was highest return on total assets 3.78% and the lowest return on capital employed was 0.85% in 2009/10. It was decreasing over the study period. On an average the bank recorded 2.20% of ROCE.

Fig No.: 4.17



Return on Shareholders' Equity (ROSE)

ROSE measures an available return for investor from their investment. According to this ratio of profitability can be measured by net profit after

taxes before interest dividend by shareholders' equity. Higher the ratio, higher will be the investment, which will undertake.

$$\text{ROSE} = \frac{Net\ \ profit\ \ after\ \ tax}{Shareholders'\ equity}$$

Table No.: 4.23

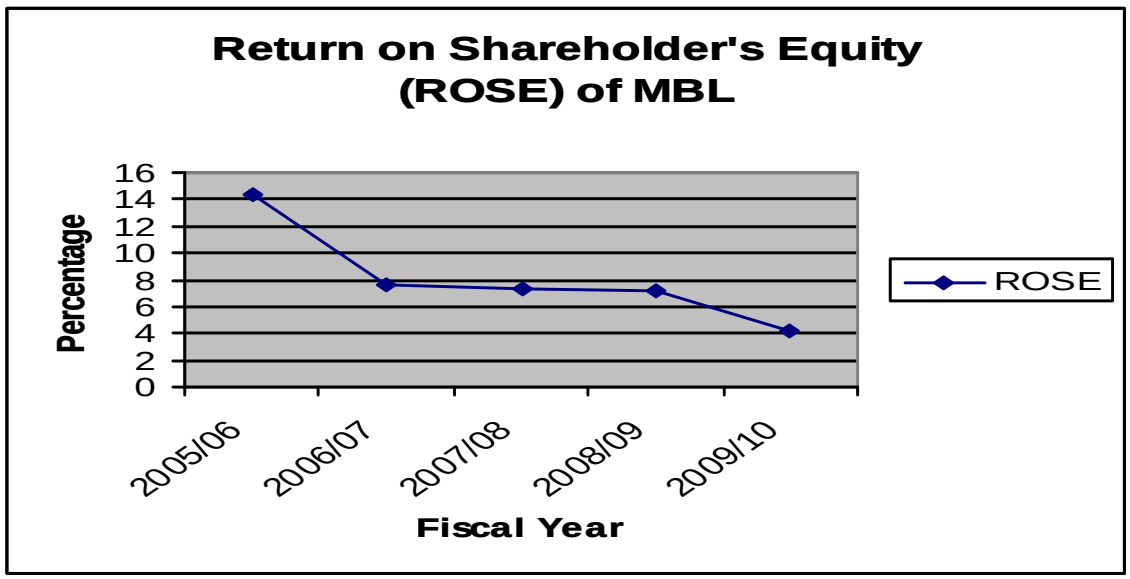
Return on Shareholders' Equity of MBL (in %)

Fiscal Year	2005/06	2006/07	2007/08	2008/09	2009/10	Average
ROSE	14.39	7.62	7.30	7.24	4.13	8.13
Change	-	-6.76	-0.31	-0.05	-3.11	

Source: - Annual report of the MBL

Above table shows return on equity of MBL. ROE of MBL was found fluctuating over the study period. The ratio found in 2005/06 was highest ratio of 14.39% and in 2009/10 was the lowest ratio of 4.13%. The ratio was in decreasing trend after. The average ratio of 8.13% was found over the study period.

Fig No.:4.17



Earning Per Share (EPS)

The profitability of firm from the point of view of the ordinary shareholder is earning per share. The ratio explains net income for each unit of share. EPS of the firm gives the strength of the share in the market. As EPS does neither reveal how much dividend paid out to the owners nor how much of the earning retained firm? Thus, it only shows how much theoretically belongs to the ordinary shareholders. It is computed as follow:

$$\text{EPS} = \frac{Net\ \ income}{No.\ of\ \ shares\ \ outs\tan ding}$$

Table No.: 4.24

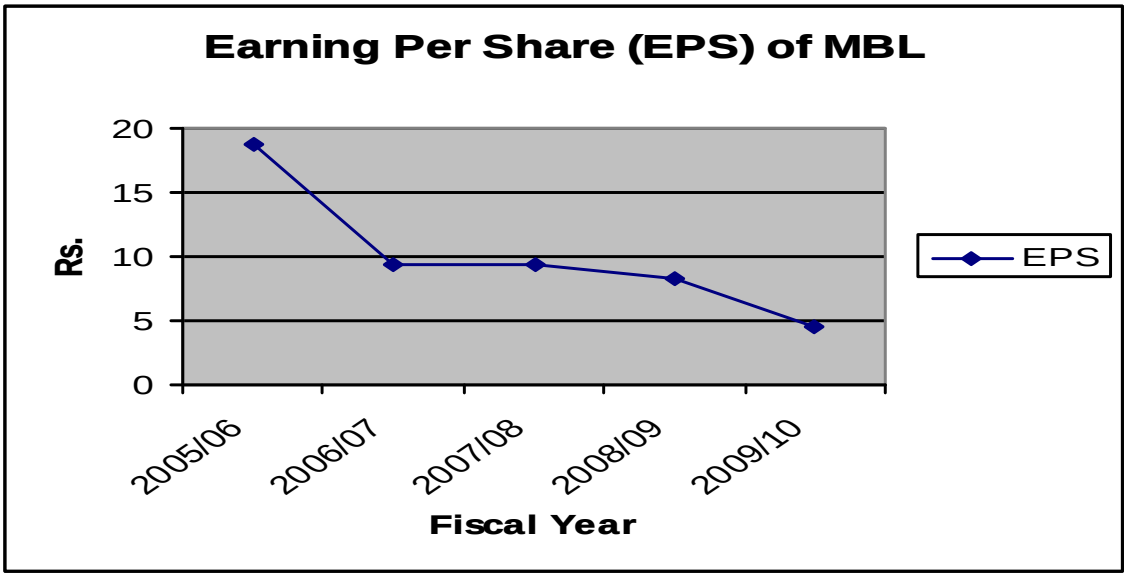
Earning Per Share of MBL (in Rs.)

Fiscal Year	2005/06	2006/07	2007/08	2008/09	2009/10	Average
EPS	18.74	9.34	9.43	8.33	4.50	10.06
Change	-	-9.4	0.09	-1.1	-3.83	

Source: - Annual report of the MBL

Above table shows earning per share of MBL.2005/06, EPS was Rs.18.74. Afterwards it was in the decreasing trend. In the year 2006/07 and 2007/08, it was Rs.9.34 and Rs.9.43 respectively. Similarly in the year 2008/09 and 2009/10, the EPS was Rs8.33 and Rs.4.50 respectively. In 2005/06, it was the highest EPS because the net income was higher. On an average, Rs.10.06 was recorded over the study period.

Fig No.: 4.18



Dividend Per Share (DPS)

Table No.: 4.25

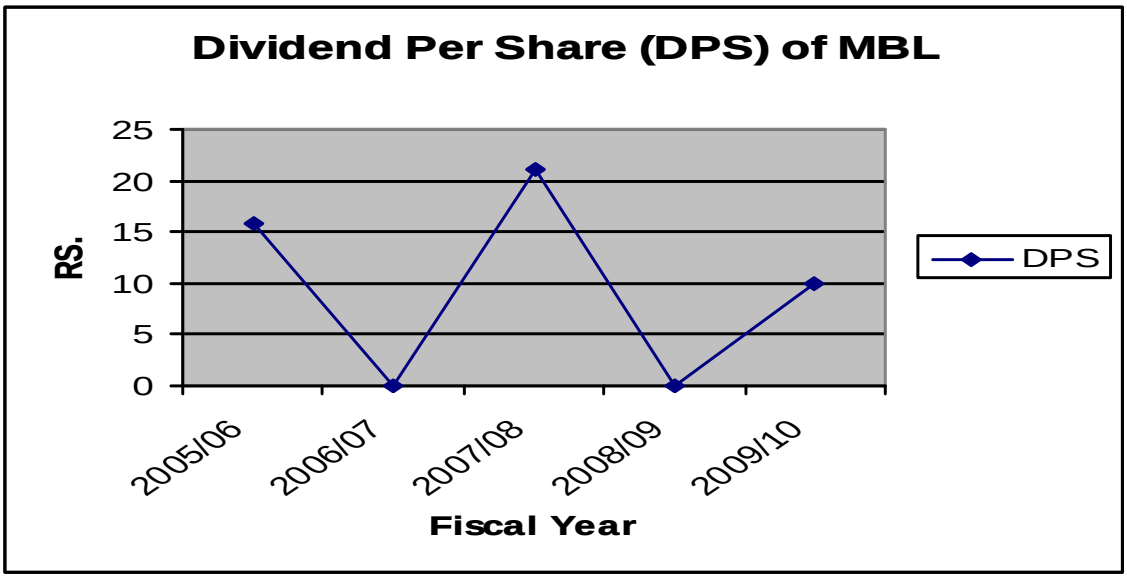
Dividend Per Share of MBL (in Rs.)

Fiscal Year	2005/06	2006/07	2007/08	2008/09	2009/10	Average
DPS	15.79	-	21.05	-	10	9.37
Change	-	-15.79	21.05	-21.05	10	

Source: - Annual report of the MBL

Above table shows that, during the study period only three times i.e. in the fiscal year 2005/06, 2007/08 and 2009/10 which are 15.79 %,21.05% and 10% respectively the dividend was declared . On an average, DPS of Rs.9.37 was recorded over the study period.

Fig No.: 4.19



Market Value Per Share (MVPS)

Market value per share is market related profitability ratio. It helps to indicate the financial achievement though the exchange of firm's shares. The ratio explains market value of each unit of ordinary share. Higher the ratio shows higher achievement of firm.

Table No.: 4.26

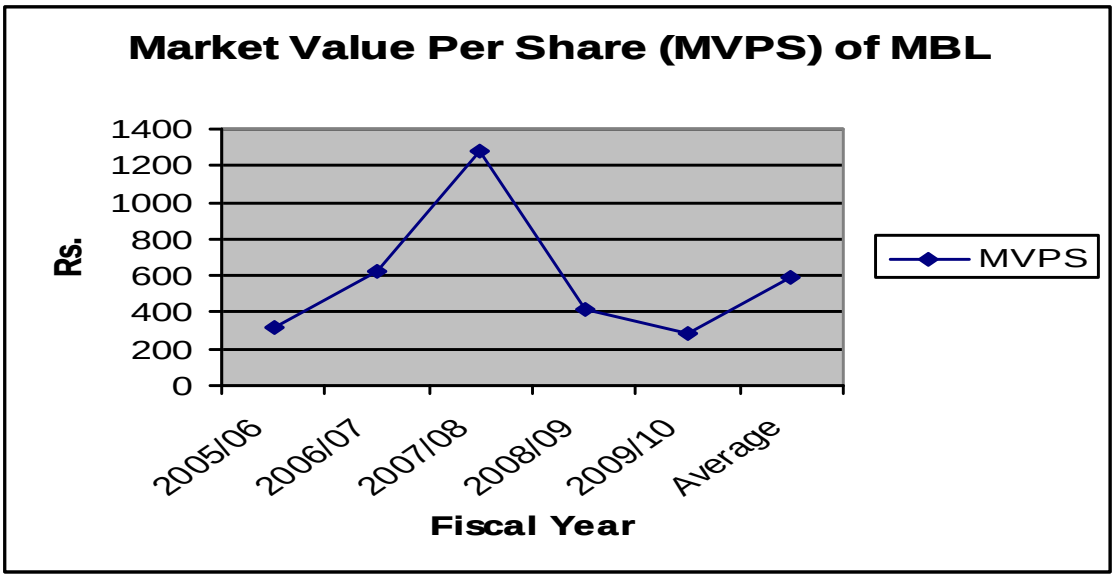
Market Value Per Share of MBL (in Rs.)

Fiscal Year	MVPS
2005/06	320.00
2006/07	620.00
2007/08	1285.00
2008/09	420.00
2009/10	282.00
Average	585.40

Source: - Annual report of the MBL

Above table shows market value per share of MBL. Market value per share of MBL is increasing during the study period. The maximum value of MVPS of MBL was Rs.1285 in 2007/08 because of higher earning per share and minimum value of MVPS of MBL. But in 2008/09 and 2009/10 was decrease of Rs420 and Rs.282 respectively. On an average, MVPS was Rs.585.40 over the study period.

Fig No.:4.20



Book Value Per Share (BVPS)

Book value per share is market related profitability ratio. It helps to indicate the financial achievement through the operation. The ratio explains net worth of each unit of ordinary share. Higher the ratio, higher is the value of firm.

Table No.: 4.27

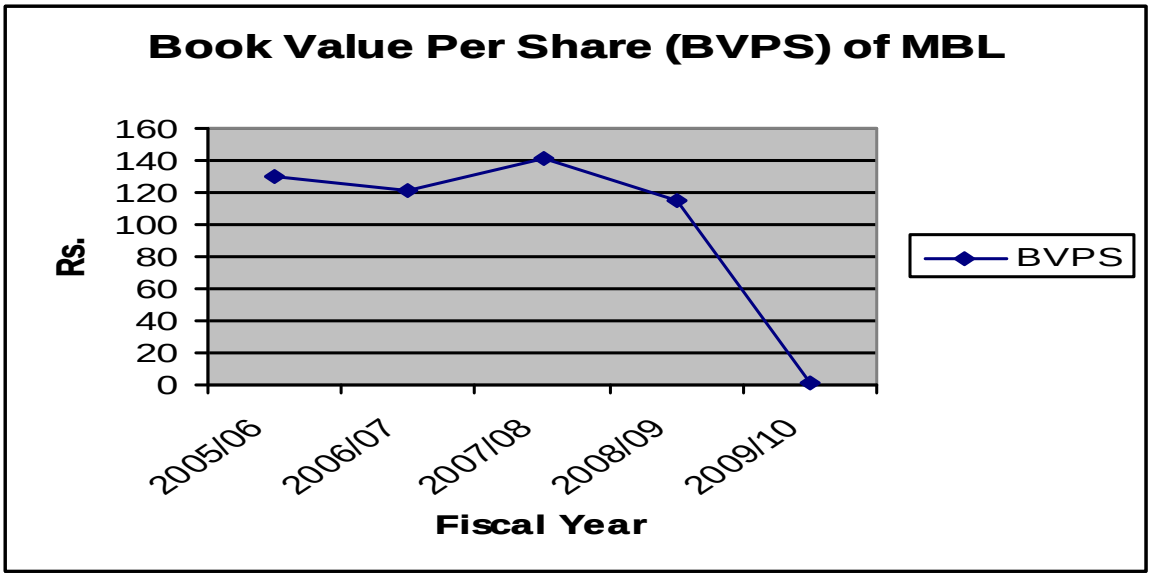
Book Value Per Share of MBL (in Rs.)

Fiscal Year	BVPS
2005/06	130.22
2006/07	121.74
2007/08	141.59
2008/09	114.93
2009/10	1.09
Average	101.91

Source: - Annual report of the MBL

Above table shows book value per share of MBL. The book value of MBL was fluctuating over the study period. it was ranged between Rs.141.59 to Rs.1.09. There was highest book value in 2007/08 and the lowest in 2009/10. On an average Rs.101.91, book value per share was recorded through the study period.

Fig No.: 4.21



Earning and Dividend Yield

Investors invest their money for a reasonable return as dividend. They can analyze their profit from their investment with the help of this ratio. It is closely related to the EPS and DPS. They are concerned with the book value per share, while the dividend yield is related to the market value per share. The earning yield is designed to calculate the ratio earning per share and market value per share. Similarly, dividend yield can be calculated by DPS by MVPS.

$$\text{Earning yield} = \frac{EPS}{MVPS}$$

$$\text{Dividend yield} = \frac{DPS}{MVPS}$$

Table No.: 4.28

Earning Yield of MBL (in %)

Fiscal Year	2005/06	2006/07	2007/08	2008/09	2009/10	Average
EY	5.85	1.45	0.80	1.98	1.75	2.36
Change	-	-4.4	-0.65	1.18	-0.23	

Source: - Annual report of the MBL

Above table shows the earning yield of MBL. It was ranged between 0.80% in 2007/08 and 5.85% in 2005/06. In the year 2006/07 and 2008/09, earning yield was 1.45% and 1.98% respectively. On an average, it was 2.36% out the study period.

Table No.: 4.29

Dividend yield of MBL (in %)

Fiscal Year	2005/06	2006/07	2007/08	2008/09	2009/10	Average
MBL	4.93	0	1.64	0	3.55	2.02
Change	-	-4.93	1.64	-1.64	3.55	

Source: - Annual report of the MBL

Above table the dividend yield of MBL, which was declared three times on the period. The dividend yield was 4.93% in 2005/06, 1.64% in 2007/08 and, 1.64% in 2007/08 and 3.55% in 2009/10. On an average, it was 2.02%.

Price Earning Ratio (P/E Ratio)

P/E ratio refers to the price currently being paid by market for each rupee of currently reported EPS. In other words, it measures investors' expectation and the market appraisal of the performance of the firm. It is an indication of the way that the investors think the firm would perform better future. Lower the ratio indicates investors feel that earning is not likely to rise. It is computed as follow:

$$\text{P/E ratio} = \frac{MVPS}{EPS}$$

Table No.: 4.30

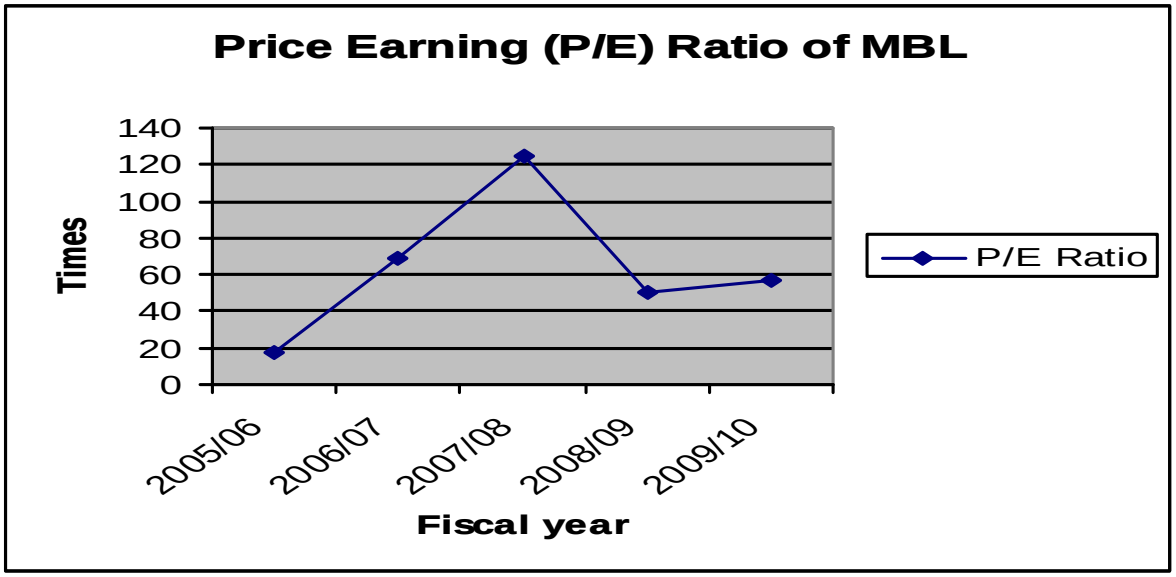
P/E Ratio of MBL (in times)

Fiscal Year	2005/06	2006/07	2007/08	2008/09	2009/10	Average
P/E Ratio	17.08	68.74	124.15	50.42	56.85	63.45
Change	-	51.66	55.41	-73.73	6.43	

Source: - Annual report of the MBL

Above table shows P/E ratio of MBL. The P/E ratio was increasing for three years. It was ranged between 17.08 times in 2005/06 and 124.15 times in 2007/08. On an average, P/E ratio was 63.45 times throughout the study period.

Fig No.: 4.22



4.2 Statistical Analysis

This chapter includes some statistical analysis such as Karl Pearson's coefficient of correlation, regression analysis and t-test, which are used to analyze the data to achieve the objective of the study.

4.2.1 Correlation Analysis

4.2.1.1 Coefficient of correlation Between Return on Equity (ROSE) & Debt Equity Ratio (DER):

The correlation between DER (X) in term of fixed deposits to net worth & ROSE (Y) of the bank is analyzed in order to know whether increase in debt capital portion in the capital structure increase return on equity.

$$r = \frac{N\Sigma XY - \Sigma X\Sigma Y}{\sqrt{N\Sigma X^2 - (\Sigma X)^2} \times \sqrt{N\Sigma Y^2 - (\Sigma Y)^2}}$$

Under t statistic test

Null hypothesis H_o: That is the variables in population are uncorrelated (insignificant)

Alternative hypothesis H_1: $p \neq 0$. That is the variables in population are correlated (significant)

The following result is obtained for MBL.

Table No.: 4.31

Coefficient of Correlation between ROSE & DER

Evaluation Criterion						
Bank	r	r^2	T calculated value	T tabulated value	Relationship	Sig. / Insig.
MBL	-0.35	0.12	0.65	3.182	Negative	Insignificant

Source: - Annual report of the MBL

Above table shows coefficient of correlation between ROSE & DER of MBL. Correlation between ROSE & DER, ROSE is being independent on DER. There was negative relationship between ROSE & DER i.e. decrease in DER, increases ROSE and vice-versa. Coefficient of determination (r^2) indicates that 12% of the variation in ROSE was explained by DER of MBL. Considering t statistic calculated value, which was -0.35 and tabulated value of t statistic, was 3.182 in 5% level of significance. t statistic is insignificant because t statistic value calculated is less than tabulated value.

4.2.1.2 Coefficient of correlation between Overall Capitalization Rate (K_o) & Debt Equity Ratio (D ER):

The correlation between overall capitalization rate (X) and debt equity ratio (Y) in terms of fixed deposit to net worth was calculated in order to measure whether increase in debt equity ratio decrease overall capitalization rate of the bank. Applying Karl Pearson's correlation, the following result obtained for MBL.

$$r = \frac{N\Sigma XY - \Sigma X\Sigma Y}{\sqrt{N\Sigma X^2 - (\Sigma X)^2} \times \sqrt{N\Sigma Y^2 - (\Sigma Y)^2}}$$

Under t statistic test

Null hypothesis H_o: p = 0. That is the variables in population are uncorrelated (insignificant)

Alternative hypothesis H_1: p ≠ 0. That is the variables in population are correlated (significant)

The following result is obtained for MBL.

Table No.: 4.32

Coefficient of Correlation between K_o & DER

Evaluation Criterion						
Bank	r	r^2	T calculated value	t tabulated value	Relationship	Sig. / Insig.
MBL	-0.30	0.09	0.55	3.182	Negative	Insignificant

Source: - Annual report of the MBL

Result from calculation, correlation between K_o & DER of bank was obtained poor negative relationship i.e. increase in debt capital portion in

capital structure then decrease in K_o and vice-versa. Coefficient of determination (r^2) indicated that only 9% of variation in K_o was explained by DER. Considering t statistic calculated value, which was 0.55 and tabulated value of t statistic, was 3.182 at 5% level of significance. t statistic is insignificant because t statistic calculated value is less than tabulated value. So that it cannot be concluded that increase in debt ratio significantly decrease the K_o of the bank though the variation move in the opposite direction. There is no significant relation between K_o & DER.

4.2.1.3 Coefficient of Correlation Between EPS & Debt Capital:

Debt capital is a source of long-term financing of the bank. It is a component of capital structure. And earning per share (EPS) is the earning of a share from one-year business activities. If the earning of the bank is high, the EPS will also be high. The relationship between debt capital and EPS has been analyzed by the Karl Pearson's correlation co-efficient formula. In order to find out the relationship between these two variables, thus correlation co-efficient has been calculated. From the calculation, we try to measure where increase in debt capital requires in EPS or not. The calculated 't' value and tabulated 't' value have been shown in below table:

$$r = \frac{N\Sigma XY - \Sigma X\Sigma Y}{\sqrt{N\Sigma X^2 - (\Sigma X)^2} \times \sqrt{N\Sigma Y^2 - (\Sigma Y)^2}}$$

Under t statistic test

Null hypothesis H_o: p = 0. That is the variables in population are uncorrelated (insignificant)

Alternative hypothesis H_1: p ≠ 0. That is the variables in population are correlated (significant)

The following result is obtained for MBL.

Table No.: 4.33

Coefficient of Correlation between EPS & Debt Capital

Evaluation Criterion						
Bank	r	r^2	t calculated value	t tabulated value	Relationship	Sig. / Insig.
MBL	-0.032	0.001024	0.055	3.182	Negative	Insignificant

Source: - Annual report of the MBL

In above table the Karl Pearson's co-efficient between debt capital and EPS is - 0.032. This means there is negative correlation between debt capital and EPS. It shows that the relationship between debt capital and EPS. It shows that the relationship between debt capital and EPS of MBL. In t statistic calculated value was 0.055 and the tabulated value was 3.182 in 5% level of significance. t statistic is insignificant because t statistic tabulated value is more than calculated value.

4.2.3 Time Series Analysis

Time series is used to predict future forecasting and planning of variable on the basis of past and present information. In regard to MBL basically the trend of debt and share Capital utilization is analyzed. MBL has taken loan from different sources for certain period. The company has also issued share capital but remains constant before few years, hence the ratio between total debt and share capital and interest coverage are forecasted for next 3 years. And the value of MBL is also forecasted. The projections are based on the following assumptions:-

The main assumption is that other things will remain unchanged.

i) The forecasted will be true only with the limitations of least square methods are carried out.

ii) The MBL will continue to run in present position.

iii) The economy will remain in the present stage.

Trend Analysis of Interest Coverage

The analysis of interest coverage ratio of MBL for five years from F/Y 2005/06 to 2009/10 and forecast of the same for next 3 years are given in the following table.

$$Y = a + bX$$

Where, Y = Actual Value of ICR

The fitted trend line is

$$Y = a + bX$$

$$Y = 1.92 + (-0.46)X$$

Table No.: 4.34

Calculation of Trend Values & Actual Value of Interest Coverage Ratio of MBL

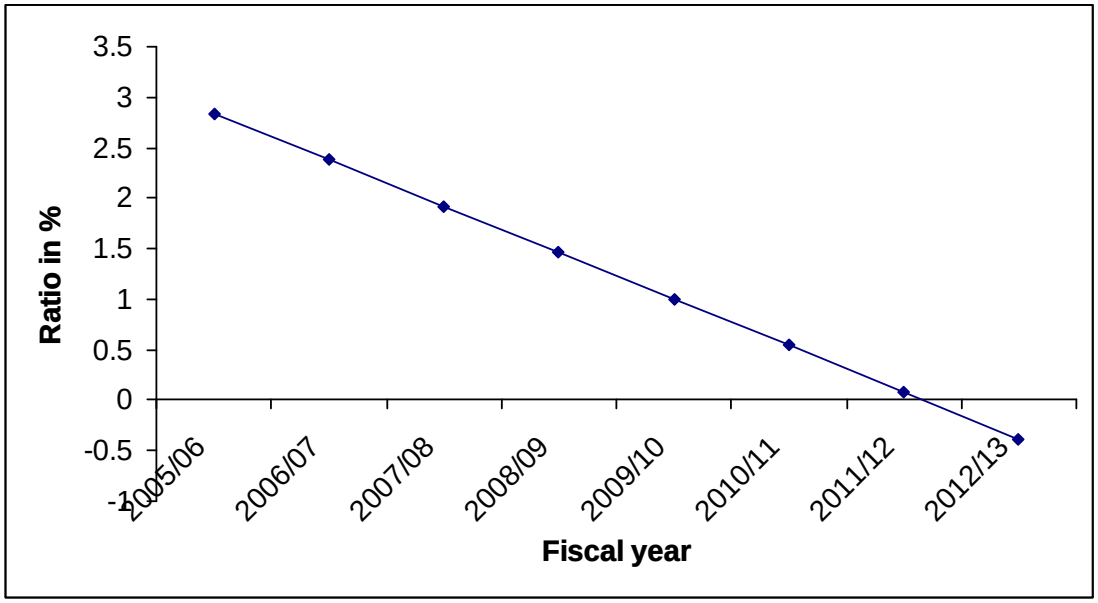
Fiscal Year	Actual Value (%)	Trend Values (%)
2005/06	2.24	2.84
2006/07	2.03	2.38
2007/08	2.22	1.92
2008/09	2.06	1.46
2009/10	1.06	1.00
2010/11	-	0.54
2011/12	-	0.08
2012/13	-	-0.38

Source: - Annual report of the MBL

In the above table of trend value of interest coverage ratio, shows decreasing trend. In the fiscal year 2005/06, it was 2.84 times where as it will be decreased to -0.38 times for the forecasted year 2012/13. It means the company hasnot able to pay interest . The above calculations of trend values are fitted in the following figure.

Fig No.: 4.23

Trend Value of Interest Coverage Ratio



4.3 Major Findings

From the above analysis followings major findings have been drawn.

4.3.1 Financial Analysis

Fixed deposit of MBL is increasing year by year since 2005/06. On average, collection of fixed deposit of bank is 24.20%, but it trends is in fluctuating rate. Fixed deposit is increasing since 2005/06 in total liabilities during the study period.

Shareholders' equity of MBL has been increasing while the study period. But proportion of shareholders' equity is in fluctuating trend. Paid up capital of MBL has been increasing while the study period. Reserve fund and provision for loan losses have been increasing in year 2007/08 and 2008/09 but 2006/07 and 2009/10 was decreasing. Numbers of shares have been increasing over the study period.

Debt equity ratio in term of fixed deposit to net worth of MBL is found the highest 380.83% in 2009/10 and lowest 216.55% in 2008/09. The average proportion of fixed deposit to net worth of MBL is 280.54%. DER in term of total debt to net worth of MBL is found the highest 1065.98% in 2009/10 and lowest 874.10% in 2005/06. The average is 963.28%.

Debt capital ratio in term of fixed deposit to capital employed is found that the proportion of fixed deposit is 73.67% in year 2005/06 and 79.20% in year 2009/10 which is the highest proportion. The average ratio 73.22% on the study period.It is found that the bank uses equally & above below fixed deposit portion in its permanent capital.

Debt capital ratio in term of total debt to total assets is found that the highest ratio was in 2009/10 of 90.56% and the lowest in 2005/06 of 89.74%. Average ratio is found 90.56%.shareholder equity is employed to finance the remaining assets. It is found that the outsiders finance the higher percent of total debt in financing in total assets.

The capital sufficiency ratio is ranged between 9.57% in 2009/10 to 11.80% in 2005/06 and average ratio is 10.67%. It shows that the bank has averagely maintained the ratio as directed by the central bank. It is found that the bank has maintained excess capital fund to safeguard that depositor's interest.

Banking sector play more debt capital in its financing activities than shareholders' equity. So that it has to pay fixed charges upon it. So the bank has to adequacy earning to cover the interest charges and to pay back the debt amount (Principal amount). In this regard the bank cannot be said to have sufficient interest coverage ratio.

Capital structure is mix of debt capital and equity capital. In this case debt means fixed deposit. If minimized cost of capital and maximized the value of company, the debt capital and equity capital would be properly mixed. There is the highest debt capital use in the bank because in banking sector there is exchange money. The highest debt & equity proportion is 0.80:0.19 and the lowest debt & equity capital proportion is 0.71:0.28.

Overall capitalization rate measures the financial degree of leverage of the company. Under the net income approach, the Ko of MBL is found to be 22.15% in an average. The rate is ranged from 19.44% to 23.50% over the study period. It can be concluded that the overall capitalization rate is increasing trend for two years and decreasing trend for two years. The correlation coefficient in between debts to equity ratio and overall capitalization rate of MBL is found -0.30. Its relation is insignificant.

The loan & advance is most earning assets of total assets. It is found that 88.26% in average. It is fluctuating over the study period. Commission & discount and foreign exchange are the other important income assets. They cover 3.86% and 3.92% respectively of total income on an average. Other income covers only 3.95% of total incomes on an average.

A major expense of the bank is interest & commission found 66.31% of total expenses. Office operating expenses is second major expense, which

is found 13.98% of total expenses. It is found that, it is most important role on profit.

Employee expenses include salary & allowances, training, uniforms & liveries, contribution to provident fund and other staff expenses. It is found 9.75% of total expenses. It is found that if maintained staff and other office activities it would be less employee expenses.

Provision for staff bonus is one of the major expenses of total expenses. It is found 0.65% of total expenses. Found that less provision for staff bonus of MBL means decreased profit.

Return on total deposit of MBL is found fluctuating over the study period. The highest ROD is 1.69% in 2005/06. Similarly the lowest ROD is 0.39% in 2009/10. The highest negative change is in 2006/07 because net income is much less than the total deposit. It is found that the bank cannot utilize the deposit.

Return on total assets is found to be in decreasing trend from 2005/06 to 2009/10, over the study period. The maximum ROA is 1.48% and the minimum ROA is 0.35% in 2005/06 and 2009/10 respectively. The highest negative change is in 2006/07 because net income is lower than the assets. It is found that the bank has insufficient return from assets.

ROCE of MBL is fluctuating over the study period. It is found the highest of 3.78% in 2005/06 and the lowest of 0.85% in 2009/10 because of lower income. It found that the bank cannot use sufficiently its long-term debt.

Return of shareholders' equity of MBL is decreasing over the study period. It is found the highest return of 14.39% on 2005/06 and the lower

of 4.13% in 2009/10. It is also found that the return is unsatisfactory because the bank cannot utilize its internal source.

Earning per share of MBL is decreasing trend over the period. It is ranged between Rs.18.74 in 2005/06 to Rs.4.50 in 2009/10. It is found that the bank cannot earn much net income so the EPS is in decreasing trend.

The bank has declared the dividend three times during the study period i.e. in 2005/06 and the DPS was Rs.15.79, in 2007/08 was Rs.21.05 and in 2009/10 was Rs.10. It was found that the bank cannot give much more dividend for investors.

P/E ratio of MBL is increasing and decreasing both for the study period. The maximum ratio was 124.15 times in 2007/08 and the lowest ratio was 17.08 times in 2005/06. It was found that market appraisal of the performance of the bank isnot well.

4.3.2 Statistical Analysis

The correlation coefficient between ROSE and DER is negative relation and the calculated value of 't' is less than the tabulated value of 't', so it is insignificant. There was no proper relationship between ROSE and DER.

The correlation coefficient between K_o and DER is negative relationship and the calculated value of 't' is less than the tabulated value of 't'. Hence, it is insignificant relation.

The correlation coefficient between EPS and debt capital is negative relationship. The calculated value of 't' is less than the tabulated value of 't', so it is insignificant.

CHAPTER - V

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary

Financial institution includes banks, finance companies, co-operative organizations and insurance companies. All of them do contribute something to the economy of the country. Financial institutions play a vital role in the proper functioning of an economy. Among them, banking sector plays an important role in the economic development of the country. Commercial banks are one of the vital aspects of this sector, which deals in the process of channel zing the available resources in the needed sectors. It is the intermediary between the deficit and surpluses of financial resource.

Every business needs capital to operate business smoothly and the capital is said to be blood of the business. Capital is a scare sources and much more essential to maintain smooth operation of any firm. As in order form, capital structure is crucial part for banking industry too. The study had been carried based on commercial bank i.e. Machhapuchchhre Bank Ltd. for Capital Structure and Profitability Management. The major objective for the study had been pointed out as follows:

a) To evaluate whether the capital structure affects the cost of equity, EPS, P/E ratio of MBL. b) To analyze the debt serving capacity of MBL. c) To analyze the relationship between capital structure and profitability. d) To identify problem in the capital structure of the company and provide suggestion and recommendation for their improvement.

The study is completed based on secondary data and carried over one bank among 31 commercial banks. The research methodology is followed to achieve the objective of the study and which constitutes Research design, Nature and source of data, population and sample, Data processing and method analysis. Moreover, financial tools and statistical tools have been employed according to requirement to achieve the target result.

Capital is a scare sources and much more essential to maintain smooth operation of any firm. The available capital and financial sources should be utilized so efficiently that could generate maximum return. The term of capital structure is used to represent the proportionate relationship between debt and equity. The debt and equity mix of a firm is called capital structure. The capital structure design is a significant financial decision since it affects the shareholders' return, risk and market value of shares. Both debt and equity are used in most large corporation. The choice of the amount of debt and equity is made after a comparison of certain characteristics of each kind of securities of interest factor related to the firm's and of external factors can affect the firm.

The main theories of capital structure are Net Income Approach, Net Operating Income Approach, Traditional Approach and Modigliani-Miller Approach. EBIT/EPS Analysis, Cost of capital, Flexible etc. are the determinant of capital structure. Without study of these elements, the company cannot make appropriate capital structure and analysis of leverage may be incomplete.

Profitability is basically an around which the ventures every business revolves. Profit is the main financial indicator of business firm, which is indeed a need to survive and grow the business environment. Profit is

essential to raise the market price of shares and to attract additional capital investment. Profit is the outcome of good management, cost control, credit risk management, efficiency of operation etc. Profit is described in two ways, one is traditional approach (Profit maximization) and another is modern approach (Sales maximization).

5.2 Conclusion

As per the objectives and analysis of the study following conclusions have been drawn:

- During the studied periods from 2005/06 to 2009/10, both the fixed and the shareholders' equity of the bank are in rising trend. But the average of the fixed and shareholders' equity position are 29.00% and 141.24% respectively. As a result, it can be concluded that the bank has more claims of owners than the creditors. In banking business, fixed deposits (on which the banks are dependent to strengthen the profitability) would obviously be more than the equity capitals when the capital markets are not well developed. So the bank is not facing heavy burden of interest payment.

- The average capital sufficiency ratio is 10.67% which as directed by the central bank has been satisfied. So it can be concluded the bank has maintained the capital sufficiency ratio.

- As the studied found that the highest debt capital & equity proportion is 0. 80:0.19 and the lowest debt & equity capital proportion is 0.71:0.28, it can be concluded the bank has almost used debt capital. That means the bank has to pay burden interest.

- Overall capitalization rate is increased because of decreased in value of firm and increased in EBIT. As the correlation coefficient between debt to equity ratio and overall capitalization rate of MBL is found negative correlation and its relation is insignificant. It can

be concluded that increase in debt to equity makes decrease in overall capitalization rate of the bank.

- It can be concluded that the profitability of the bank is mostly contributed by loan & advance alone compared to the other assets as loan and advance covered 88.26% out of the total income and remaining from other assets.

- It can be concluded that expense in interest & commission play vital role to increase & decrease the profit. It is because 66.31% of total income is expended in bank.

- Return on deposit, assets, capital employed, shareholders' equity and EPS all are in decreasing trend.. Even though the dividend was declared only three times during the study period.

- The normal interest rate is nearly 2 times. The interest coverage ratio is not satisfactory for the bank because using more debt capital the ratio is less than the normal rate i.e. 2 times.

- The correlation coefficient between K_o and DER is negative relationship and the calculated value of 't' is less than the tabulated value of 't'. So that it is insignificant relation. It can be concluded that if DER increases than K_o decreases.

- The correlation coefficient between EPS and Debt capital is negative relationship. The calculated value of 't' is less than the tabulated value of 't' so it is in significant. It can be concluded that it if debt capital is decreased then EPS also will be decreased.

5.3 Recommendations

The sound capital structure enhances the profitability and growth of any company and it is also indicated sound financial position of the company. The capital structure decision in term of banking industry is very much different from other industry. Bank enjoys by using outsiders' funds by various measures in variety of assets in order to provide good return to their shareholders. As the outsiders fund is very higher than owners' fund, financial manager must be very sensible in each step of investing and lending the funds in various assets. The researcher expects that to provide suggestion wound help for the betterment of the bank in relation to capital structure and profitability management. The recommendations are as follows:

1. The capital structure of bank is highly levered. The proportion of debt and equity capital should be decided keeping in mind the effects if tax advantage. It is difficult to pay interest and principal, ultimately lead to liquidation or bankruptcy. The capital structure position is not better. The bank requiresto maintainimproved capital structure by increasing equity i.e. issuing more capital, expanding general reserve and retaining more earning.

2. Return on shareholder equity and EPS are not satisfactory. So bank need to seek more profitable sectors in order to increase profit of the bank. And also need to maintain optimal capital structure considering cost of capital so that it helps to enhance the ROSE and profitability of the bank.

3. The central bank as regarding, supervising and directing bank mandates all the commercial banks to increase their capital funds to

Rs.1 billion and also to maintain sufficient capital adequacy ratio as per NRB directives. So the bank needs to adopt the guidance of the central bank to maintain appropriate capital structure to safeguard the depositor's money.

4. MBL is bearing high interest expenses since it used long-term debt on its capital structure. As a result, the return of the firm is not satisfactory. So the bank is recommended to minimize interest expenses by using cheaper debt as well as decrease other operating expenses to increase the return of the firm.

5. It is found that this bank is unable to plan their capital structure properly because its debt equity ratio is not satisfactory. Due to this reason, even the EPS is in the decreasing trend, it is below the optimal level. And weighted average cost of capital may not be minimized. So this bank is recommended to plan its capital structure by analyzing the possible alternative financial plans or analyzing future cash flow of the bank, which trade off between risk and return of the company.

6. Bank needs to review and monitor leverage ratio regularly so that risk to the bank may not increase which may effect in efficient operation of the bank.

7. Bank needs to employ better marketing strategy in order to reap handsome benefit and to sustain for long period.

8. The bank should give continuity in providing both conceptual and practical trainings to the staff to enhance their knowledge, skill and competency level. They should remain consistently vigilant in enhancing their motivation.

9. The bank has to enhance effectiveness, efficiency and proper coordination of its departmental tasks by continuously reviewing its structural design in accordance with the need of the changing time and situation.

Calculation of Correlation coefficient between EPS & Debt Capita

Fiscal year	X (Total debt) in millon	Y (EPS)	XY	X2	Y2
2005/06	8138.73	18.74	152519.8	66238926.01	351.1876
2006/07	9803.03	9.02	88423.3306	96099397.18	81.3604
2007/08	11335.21	10.35	117319.424	128486985.7	107.1225
2008/09	15790.58	8.33	131535.531	249342416.7	69.3889
2009/10	18905.27	4.96	93770.1392	357409233.8	24.6016
Total	63972.82	51.4	583568.225	897576959.4	633.661

N = 5
$\sum X = 63972.82$, $\sum Y = 51.4$, $\sum XY = 583568.22$, $\sum X^2 = 897576959.4$, $\sum Y^2 = 633.66$

Where,

N = No. of observation of X and Y
$\sum X$ = Sum of the observations in series X
$\sum Y$ = Sum of the observations in series Y
$\sum XY$ = Sum of the square of observations in series X
$\sum X^2$ = Sum of the square of observations in series Y
$\sum Y^2$ = Sum of the product of the observations in series X and Y

$$r = \frac{N\Sigma XY - \Sigma X \Sigma Y}{\sqrt{N\Sigma X^2 - (\Sigma X)^2} \times \sqrt{N\Sigma Y^2 - (\Sigma Y)^2}}$$

or, $$r = \frac{5 * 583568.22 - 63972.82 * 51.4}{\sqrt{5 \times 897576959.4 - (63792.82)^2} \times \sqrt{5 \times 63366 - (51.4)^2}}$$

or, $$r = \frac{2917841.1 - 3288202.95}{\sqrt{4487884795 - 4092521699}}$$

or, $r = \frac{-370361.85}{\sqrt{173919592.2} \times \sqrt{1191.84}}$

or, r = -0.032

$r^2 = (-0.032)^2$

or, $r^2 = 0.001024$

$t = \frac{r}{\sqrt{1-r^2}}\sqrt{n-2}$

$= \frac{-0.032}{\sqrt{1-0.001024}}\sqrt{5-2}$

= -0.055

/t/ = 0.055

Degree of freedom (d.f.) = n-2 = 5-3 = 3

α = 5% = 0.05

Calculation of Correlation coefficient between K_o& DER

FY	X (K_o)	Y (DER)	XY	X^2	Y^2
2005/06	19.44	279.76	5438.534	377.914	78265.6576
2006/07	22.69	271.35	6156.932	514.836	73630.8225
2007/08	23.5	254.53	5981.455	552.25	64785.5209
2008/09	23.18	216.55	5019.629	537.312	46893.9025
2009/10	21.97	380.83	8366.835	482.681	145031.489
	110.78	1403.02	30963.39	2464.99	408607.392

N = 5

$\sum X$ =110.78, $\sum Y$ = 1403.02, $\sum XY$ = 30963.39, $\sum X^2$ = 2464.99, $\sum Y^2$ = 408607.392

Where,

N = No. of observation of X and Y
$\sum X$ = Sum of the observations in series X
$\sum Y$ = Sum of the observations in series Y
$\sum XY$ = Sum of the square of observations in series X
$\sum X^2$ = Sum of the square of observations in series Y
$\sum Y^2$ = Sum of the product of the observations in series X and Y

$$r = \frac{N\Sigma XY - \Sigma X\Sigma Y}{\sqrt{N\Sigma X^2 - (\Sigma X)^2} \times \sqrt{N\Sigma Y^2 - (\Sigma Y)^2}}$$

or, $$r = \frac{5 \times 30963.39 - 110.78 \times 1403.02}{\sqrt{5 \times 2465 - (110.78)^2} \times \sqrt{5 \times 408607.39 - (1403.02)^2}}$$

or, $$r = \frac{154816.95 * 155426.55}{\sqrt{12325 - 12272.20} \times \sqrt{2043036.95 - 1968465.12}}$$

or, $$r = \frac{-609.6}{\sqrt{52.80} \times \sqrt{74571.83}}$$

or $$r = \frac{-609.6}{7.26 \times 273.08}$$

or $$r = \frac{-609.6}{1982.56}$$

or, r = -0.30

$r^2 = (-0.30)^2$

or, $r^2 = 0.09$

$$t = \frac{r}{\sqrt{1-r^2}}\sqrt{n-2}$$

$$= \frac{-0.30}{\sqrt{1-0.09}}\sqrt{5-2}$$

$$= -0.55$$

/t/ = 0.55

Degree of freedom (d.f.) = n-2 = 5-3 = 3

$\alpha = 5\% = 0.05$

Tabulated value of t for 3 d.f. at α = 5% level of significance for two tails test is 3.182.

Calculation of Correlation coefficient between DER in term of fixed deposit to net worth and return shareholders' equity (ROSE)

FY	X (DER)	Y (ROSE)	XY	X^2	Y^2
2005/06	**279.76**	**14.39**	**4025.7464**	**78265.6576**	**207.0721**
2006/07	**271.35**	**7.62**	**2067.687**	**73630.8225**	**58.0644**
2007/08	**254.53**	**7.3**	**1858.069**	**64785.5209**	**53.29**
2008/09	**216.55**	**7.24**	**1567.822**	**46893.9025**	**52.4176**
2009/10	**380.83**	**4.13**	**1572.8279**	**145031.489**	**17.0569**
	1403.02	**40.68**	**11092.152**	**408607.392**	**387.901**

$N = 5$
$\sum X = 1403.02, \sum Y = 40.68, \sum XY = 11092.152,$
$\sum X^2 = 408607.392, \sum Y^2 = 387.901$

Where,

N = No. of observation of X and Y
$\sum X$ = Sum of the observations in series X
$\sum Y$ = Sum of the observations in series Y
$\sum XY$ = Sum of the square of observations in series X
$\sum X^2$ = Sum of the square of observations in series Y
$\sum Y^2$ = Sum of the product of the observations in series X and Y

$$r = \frac{N\Sigma XY - \Sigma X \Sigma Y}{\sqrt{N\Sigma X^2 - (\Sigma X)^2} \times \sqrt{N\Sigma Y^2 - (\Sigma Y)^2}}$$

or, $$r = \frac{5 \times 11092.15 - 1403.02 \times 40.68}{\sqrt{5 \times 408607.39 - (1403.02)^2} \times \sqrt{5 \times 387.90 - (40.68)^2}}$$

or, $$r = \frac{55460.76 - 57074.85}{\sqrt{2043036.95 - 1968465.12} \times \sqrt{1939.5 - 1654.36}}$$

or, $$r = \frac{-1614.09}{273.08 \times 16.87}$$

or, $$r = \frac{-1614.09}{4606.85}$$

,

or, r = -0.35

$r^2 = (-0.35)^2$

or, $r^2 = 0.1225$

$$t = \frac{r}{\sqrt{1-r^2}}\sqrt{n-2}$$

$$= \frac{-0.35}{\sqrt{1-0.12}}\sqrt{5-2}$$

$$= -0.65$$

/t/ = 0.65

Degree of freedom (d.f.) = n-2 = 5-3 = 3

$\alpha = 5\% = 0.05$

Tabulated value of t for 3 d.f. at α = 5% level of significance for two tails test is 3.182.