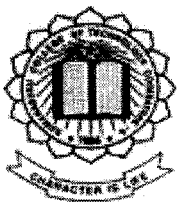
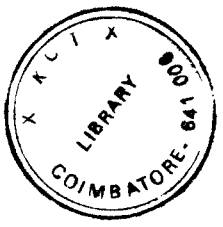




A STUDY ON THE FINANCIAL PERFORMANCE ANALYSIS OF GVG PAPER MILLS PRIVATE Ltd., PALANI

By

C.SATHISH KUMAR
Reg No. 71206631048

Of

Department of Management Studies
Kumaraguru College of Technology
Coimbatore

A PROJECT REPORT
Submitted to the

FACULTY OF MANAGEMENT SCIENCES

In partial fulfillment of the requirements
For the award of the degree

Of

MASTER OF BUSINESS ADMINISTRATION

May 2008

DECLARATION

DECLARATION

I, **Mr.C.SathishKumar (71206631048)** final year MBA student of Department of Management Studies, Kumaraguru College of Technology, hereby declare that the project entitled "**A Study on the Financial performance analysis of GVG Paper Mills Private Ltd., Palani**" has done by me under the guidance of Lecturer, A.Senthil Kumar, submitted in partial fulfillment for the award of the degree of Master of Business Administration of Anna University, during the academic year 2006-2008.

I, also declare hereby, that the information given in this report is correct to best of my knowledge and belief.

Place: Coimbatore
Date: 03/07/08

C. Sathish

Signature of the Candidate

(C.Sathish Kumar)

CERTIFICATE

DEPARTMENT OF MANAGEMENT STUDIES

KUMARAGURU COLLEGE OF TECHNOLOGY

COIMBATORE

BONAFIDE CERTIFICATE

Certified that this project report titled **"A Study on the Financial performance analysis of GVG Paper Mills Private Ltd., Palani"** is the Bonafide work of **Mr.C.Sathish Kumar (71206631048)** who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Faculty Guide **Director**

Evaluated and vice-voce conducted on 3/7/2008

Examiner I **Examiner II** 3/7/2008

GVG PAPER MILLS PRIVATE LIMITED

REGD. & ADMN. OFFICE : 168/2, SIKANDHAR BATCHA STREET, GANDHI NAGAR, UDUMALPET - 642 154.
TAMILNADU, INDIA Phone : +91 4252 224113, 224513 & 224943 Fax : +91 4252 225425
E-mail : gvgpmudt@dataone.in & gvgpaper@sancharnet.in

CERTIFICATE

This is to certify that **Mr. C.Sathish Kumar**, Final Year M.B.A, student of **Kumaraguru College of Technology, Coimbatore** underwent Project in our organization during January 2008 to May 2008. The Project undertaken was in respect of **A Study on the Financial Performance Analysis**. During the period he showed keen interest in knowing the system of various operations and his performance was highly commendable.

Place : Udumalpet
Date : 30-05-2008

(N.P.Madhavan)
General Manager-Admin.

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

In the modern industrial economy, finance is one of the basic foundations of all kinds of economic activities. The financial function of the enterprise deals with raising the funds and their effective utilization, keeping in view the overall objective of the company. The management of the company makes use of various financial techniques, devices etc for administrating the financial affairs of the company in the most effective and efficient way.

This project is undertaken to study the financial performance of GVG paper Mills private Ltd. The researcher used four types of ratio analysis liquidity ratio, long term solvency and leverage ratios, profitability ratio and activity ratio to interpret the financial performance. This is done with the help of annual report of the company for last five years 2001-02 to 2005-06. Suggestions and conclusions are given based on inference of the analysis.

The profitability ratio shows that the net profit of the organization has increased compared to the previous years. The liquidity ratio shows that the short term liquidity position of the organization is in satisfactory position. The activity ratio shows the organization has efficiently used the investment, asset and the working capital in the current year when compared to the previous year.

In general the financial position of the organization has increased in all aspect for the past years. The study reveals that the financial position of the paper mill is in a very strong situation. Due to technological advancement and changes in environment, there is stiff competition among the firms; implementation of changes should be effectively done to counter competition.

ACKNOWLEDGEMENT

ACKNOWLEDGEMENT

Few people are as fortunate as I have been. Throughout my life I have always benefited from many wonderful people around me, and the last two months of my summer project have been no exception. I have many people to be thankful to.

I adore the almighty and extol his glory by paying my contribution of thankfulness for blessing me with all knowledge required to complete this project successfully.

I thank our respected chairman **Dr. N. Mahalingam** who helped us to undergo this master's degree and acquire a lot of knowledge.

I thank our beloved Vice-Chairman **Prof. Dr. K. Arumugam**, for his kind blessings and moral support for carrying out this project.

I express my sincere thanks to our principal **Dr. Joseph V Thanikal** for allowing us to carryout this project.

I express my gratitude to our director **Prof. Dr. S. V. Devanathan**, for his kind patronage and for his consent to carryout this project.

I take privilege and immense pleasure in expressing my sincere gratitude to my guiding spirit, **Lecturer, Mr. A.Senthil Kumar**, for his in-depth guidance, motivation and encouragement in executing this project right from beginning and making it a success.

I am highly obliged to extend my sincere thanks to **Mr. Madhavan, General Manager (Admin),** Organization Guide for their effective guidance and valuable support to carryout this project in their premises.

My special acknowledgements and thanks to Department of Management Studies, Faculty Members and my friends for their help and motivation throughout.

CONTENTS

CONTENTS

CHAPTER	TITLE	PAGE NO
	LIST OF TABLES	
	LIST OF CHARTS	
I	INTRODUCTION AND DESIGN OF THE STUDY	
	Background	1
	Review of Literature	2
	Statement of the problem	3
	Objectives of the study	3
	Scope of the study	4
	Methodology	4
	Limitations	5
II	ORGANISATION PROFILE	
	History of the Organization	6
	Management	7
	General Data	9
	Functional areas	11
III	MACRO-MICRO ANALYSIS	19
IV	DATA ANALYSIS AND INTERPRETATION	41
V	SUMMARY OF FINDINGS AND SUGGESTIONS	80
	BIBLIOGRAPHY	84

LIST OF TABLES

LIST OF TABLES

SL.NO	TITLE OF TABLES	PAGE NO
1	CURRENT RATIO	43
2	QUICK RATIO	45
3	ABSOLUTE LIQUID RATIO	47
4	DEBT-EQUITY RATIO	49
5	PROPRIETORY RATIO	51
6	SOLVENCY RATIO	53
7	FIXED ASSETS TO NETWORTH RATIO	56
8	CURRENT ASSETS TO PROPRIETOR'S FUND RATIO	58
9	FIXED ASSET TURNOVER RATIO	60
10	INVENTORY TURNOVER RATIO	62
11	WORKING CAPITAL TURNOVER RATIO	64
12	NET PROFIT RATIO	66
13	RETURN ON SHAREHOLDERS INVESTMENT	68
14	MANUFACTURING EXPENSES RATIO	70
15	OFFICE AND ADMINISTRATION EXPENSES RATIO	72
16	SELLING AND DISTRIBUTION EXPENSES RATIO	74
17	TREND ANALYSIS FOR SALES	76
18	TREND ANALYSIS FOR PROFIT	78

LIST OF CHARTS

LIST OF CHARTS

SL.NO	TITLE OF CHARTS	PAGE NO
1	CURRENT RATIO	44
2	QUICK RATIO	46
3	ABSOLUTE LIQUID RATIO	48
4	DEBT-EQUITY RATIO	50
5	PROPRIETORY RATIO	52
6	SOLVENCY RATIO	54
7	FIXED ASSETS TO NETWORTH RATIO	56
8	CURRENT ASSETS TO PROPRIETOR'S FUND RATIO	59
9	FIXED ASSET TURNOVER RATIO	61
10	INVENTORY TURNOVER RATIO	63
11	WORKING CAPITAL TURNOVER RATIO	65
12	NET PROFIT RATIO	67
13	RETURN ON SHAREHOLDERS INVESTMENT	69
14	MANUFACTURING EXPENSES RATIO	71
15	OFFICE AND ADMINISTRATION EXPENSES RATIO	73
16	SELLING AND DISTRIBUTION EXPENSES RATIO	75

CHAPTER I

INTRODUCTION

CHAPTER I
INTRODUCTION

1.1 BACKGROUND OF THE STUDY

In our present day economy, finance is defined as the provision of money at the time when it is required every enterprise, whether big, medium of small, needs finance to carry on its operations and to achieve its targets. In fact, finance is so indispensable today is rightly said to be the lifeblood of an enterprise. Without adequate finance, no enterprise can possibly accomplish its objective.

Meaning for Financial Analysis

Financial analysis is the process of determining the significant operating and financial characteristics of a firm accounting data. Financial analysis is the judgmental process, which aims to evaluate the current and past financial positions and the result for determining the best possible estimates and predictions about the future conditions.

Financial analysis is the process of identifying the final strength and weakness of the firm by properly establishing relationships between the items of the balance sheets and the profit and loss account. Financial analysis can be undertaken by the management of the firms or by other parties outside the firm via owners, creditors, investors and other. The nature of analysis will differ depending on the purpose of the analysis.

Financial analysis depends to a very large extend on the use of ratios. Thus a direct examination of the magnitude of two related items is somewhat enlightening. But the comparison is greatly facilitated by expressing the relationship as a ratio.

1.2 REVIEW OF LITERATURE

Rao N J[1] said in his article that India recorded economic growth of 5.8% and an industrial growth rate of 3.5% in 1998. Over the last 18 months, the Indian rupee lost almost 20% of its value against the dollar. Added to that, the BJP central government recently collapsed, causing further uncertainty on the political scene.

Rao N J[2] said in his article that India's paper industry has steadily improved since late-1999. Industry players have improved their financial performance and are considering investments to increase production, improve quality and work toward complying with environmental regulations. For example, Tamil Nadu Newsprint Papers is rebuilding PM 1 at its mill in Kagithapuram to raise the unit's capacity of newsprint and printing/writing paper from 300 tonnes/day to 360 tonnes/day, as well as boosting pulp capacity. Seshasayee Paper and Board has already increased its capacity to 115,000 tonnes/yr with the startup of the company's new 55,000 tonne/yr lightweight coated PM. Fellow producer, Ballarpur Industries, started production at the Servall mill and has also taken a controlling stake in Sinar Mas Pulp & Paper (India), a 115,000 tonne/yr printing/writing paper unit near Pune.

Ferguson & Kelly H[3] wrote an article as NORTH AMERICA'S PULP AND PAPER MILL MANagers say their mills in general experienced financial success in 1995, and although some are not as positive about 1996, most expect the good times will continue. According to Pulp & Paper's exclusive mill manager's survey, 33% predict 1996 will be an "excellent" year for their mills, and 51% predict it will be "good" (Figure 1). (Figure 1 omitted)

---

[1] Rao N J, *PPI*, "India: Producers look for help from rising tariffs" July 1999.
[2] Rao N J, *PPI*, "India: Producers move ahead with new capacity" July 2001.
[3] Ferguson & Kelly H, *Pulp & Paper*, "Mill managers predict continued good times for industry in 1996" Dec 1995.

R. Balaji[4] wrote an article as PAPER manufacturers are hoping to increase prices further early next year as increasing costs of production erode margins. Raw material shortage and price increase have hit both the conventional wood pulp users and those dependent on non-conventional raw materials such as bagasse. Paper prices across the board, including newsprint and printing and writing paper, have been buoyant in the current year.

1.3 STATEMENT OF THE PROBLEM

Effective and sound financial position very much important at all levels of operations. They determine the operational efficiency and the ultimate success or failure of a business. A financial analysis reveals that where a company stands in respect provided the frame work with in which the science of planning takes place. Hence a study on the financial position is taken as a problem to be studied upon.

1.4 OBJECTIVE OF THE STUDY

PRIMARY OBJECTIVE

- To study the financial position of the company.

SECONDARY OBJECTIVE

- To study the liquidity position of the concern.
- To get an overview about the short term as well as long term solvency of the position of the concern.
- To study the profitability position of the concern.
- To forecast the sales and profit of the concern for future period.
- To high light the findings made in this study and to provide suggestions to the betterment of the company.

---

[4] R. Balaji, The Hindu Business Line, "Rising production costs — Paper cost mull further price hike" Dec 2004.

1.5 SCOPE OF THE STUDY

The major cause for every successful and as well as sick unit, is not nothing but its financial policy. Therefore, financial analysis helps in identifying the financial strengths and weakness of the firm. However, the present study aims at assessing the financial performance of GVG Paper Mills Private Ltd.,

1.6 METHODOLOGY

1.6a Type of study

As the study analyses the financial performance of the company the study is analytical one in nature.

1.6b Method of data collection

The data required for the study have been obtained from the company records of financial statements. The study is entirely based on the secondary data through the company records.

Secondary data has been used in this study the published financial reports of GVG Paper Mills Private Ltd., directors reports and annual report has been the main source of secondary data. For the purpose of carrying out the analysis, the data available in the financial statement have been regrouped and rearranged suitably.

1.6c Period of the study

The period of study is the five financial years starting from 2002-2003 to 2006-2007.

1.6d Tools for the analysis

The data so collected have been analyzed with the help of following accounting tool and statistical tool.

1. Ratio analysis
2. Trend analysis

1.7 LIMITATIONS OF THIS STUDY

The following were considered to be the limitations of the study.

- The study covers the periods between 2002-2003 and 2006-2007. It does not consider the changes that have taken place before and after the study.

- The reliability and correctness and findings relied upon the information provided in the annual report of the concern.

- The calculations have been on the figures provided in the published financial statements. Hence the study is subjected to limitations inherent to financial accounting.

- Financial performance of GVG Paper Mills Private Ltd., consists of overall performance of different units. Here, financial performances of individual units are ignored.

CHAPTER II

ORGANISATION PROFILE

CHAPTER II
COMPANY PROFILE

2.1 HISTORY

GVG Paper Mills Private Limited was incorporated in the year 1985 as a private limited company with a installed capacity of 3000 MT per annum of printing and writing paper.

The company commenced its production in the year 1986 with a capacity of 10 MT per day and within a span of 5 years, the production was increased to 20 MT per day with the installation of few equipments and drying capacity.

In the year 1991, the company went in for MG machine to produce Kraft varieties of paper with a capacity of 15 MT per day. This has enabled the company to have a wide range of products in its manufacturing range.

During the year 1995-96, the company put up the third machine (MG) to manufacture special varieties of paper. The present production capacity of the Mill is 3800 tones per month.

The Company producing Newsprint, Printing & Stationery Papers and Kraft varieties of paper in 3 machines.

The company export papers to various countries like Sri Lanka, Egypt, Canada, Bermuda and Mexico.

The company has put up 10 wind mills supplied by various manufactures in Attukinathupatti village and Coimbatore with financial assistance of M/s.ICICI Ltd and own generation.

2.2 MANAGEMENT

The following constitute the Board of Directors of the Company.

Managing Director	:	Shri M. Amarnath
Directors	:	Shri M. Veluswamy
		Shri A. Padma
		Mr V. Vivek

The Company has working capital limits with M/s. The Lakshmi Vilas Bank Ltd., Udumalpet with a fund based limit of 6 Crores and non-fund limit of 2.5 Crores. The company's cash credit limit is Rs.250 lakhs, bill discounting limit is Rs.700 lakhs cheque discounting limit is Rs.50 lakhs and Letter of credit limit is Rs. 350 lakhs.

The company has a workforce of 250 direct workers and nearly 500 indirect workers in the factory. The monthly wage bill workers out to Rs.15 lakhs per month.

The company pays an amount of Rs.3.5 Crores per annum by way of Excise duty, Rs.3 Crores by way of sales tax and Rs.75 lakhs by way of Income tax every year and have paid an advance Tax of Rs.1 crore this year. The Company's last year turnover is Rs.95 Crores. The company's turn over will be touching Rs.100 Crores by the end of march 2008.

Registers maintained by the company

1. Registers of charges under section 143/Copies of instruments creating Charge under Section 136.
2. Register of Members and Returns under section 150 and section 163.
3. Minutes of Board of Directors Meetings and of Proceedings of General Meetings under section 193(1).

4. Register of Particulars of Contracts in which Directors are interested under section 301.
5. Register of Directors, Managing Director under section 303.
6. Register of Directors' Shareholdings under section 307.
7. Register of Application and Allotment.
8. Register of Transfers.
9. Register of Investment or Loans made under section 372 A.
10. Books of Accounts and Cost Records under section 209(1&2).

The Factory Address : GVG Paper Mills P Ltd
Nallur, Pushpathur Village
Palani Tk
Dindigul Dist
Tamil Nadu
India

Admin. Office : GVG Paper Mills P Ltd
168/2 Sikkandar Batcha Street
Gandhi Nagar, Udumalpet 642 154
Phone : 04252-224113, 224513, 224943
E-mail: gvgpmudt@dataone.in , gvgpaper@sancharnet.in

2.3 GENERAL DATA

Name	: GVG Paper Mills Private Limited
Managing Director	: Shri M. Amarnath
Directors	: Shri M. Veluswamy
	Shri A. Padma
	Mr V. Vivek
Factory Location	: Nallur
	Pushpathur Village
	Palani Taluk
	Dindigul 624 618
Phone Numbers	: 04252- 252535, 252536, 252327
Fax	: 04252- 252245
Regd & admin Office	: 168/2 Sikkandar Batcha Street
	Gandhi Nagar, Udumalpet 642 154
Phone Numbers	: 04252- 224113, 224513, 224943
Fax	: +91 4252 225425
E-mail	: gvgpmudt@dataone.in , gvgpaper@sancharnet.in
Branch Office	: 140, Mannarsamy Koil Street,
	Royapuram, Chennai 600 013
Phone Number	: 044- 25950906
Fax	: 044- 25961211
Auditor	: CA H Natarajan B.Sc., F.C.A
	Chartered Accountant
	Coimbatore
Internal Auditor	: CA V Chandrasekaran B.Com., F.C.A
	Chartered Accountant
	Tanjore
Bankers	: The Lakshmi Vilas Bank Ltd
	Udumalpet

Year of Commencement	: 1985
Installed Capacity	: 10 MT per day
Current Capacity	: 3800 Tones per month
Nearest Railway Station	: Pushpathur
Nearest Fire Station	: Madathukulam
Wind Mills	: Athukinathuppatti Village
	Bogampatti Village
	Metrathi Village
	Pottaiyampalayam Village

2.4 FUNCTIONAL AREAS

2.4a ADMINISTRATIVE DEPARTMENT

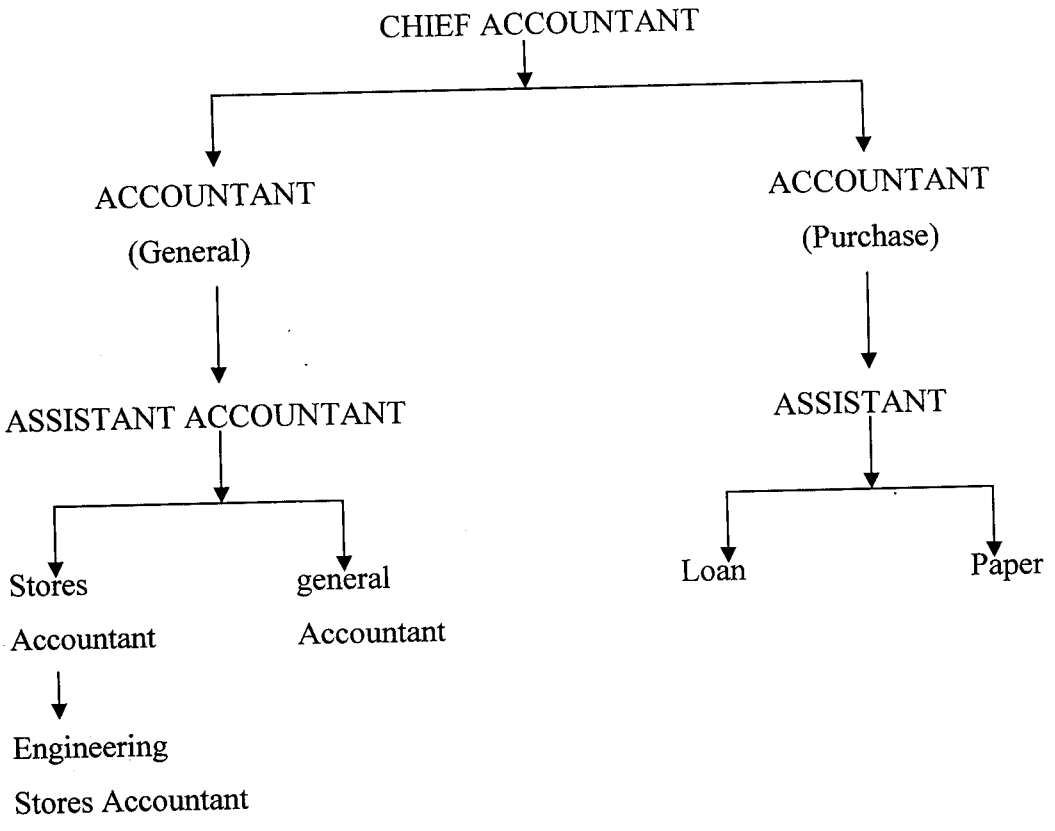
Office manager is in-charge for administration of the entire establishment including factory. He follows the instruction and guidelines issued by the special officer then and there.

2.4b PERSONNEL DEPARTMENT

Labour welfare officer is looking after the welfare of the employees such as sanitation, drinking water and canteen. He is responsible to maintain a good relationship with the workers and management.

2.4c ACCOUNTS DEPARTMENT:

Chief accountant is head of accounts department. He is dealing with all financial matter and Verifications of accounts.



SIGNIFICANT ACCOUNTING POLICIES:

1. Basis of preparation of Financial Statements:

The Financial statements of the company are prepared under the historical convention on accrual basis of accounting with the standards issued by the Institute of Chartered Accounts of India and referred to in section 211 (3C) of the Companies Act, 1956.

2. Fixed Assets:

Fixed Assets are stated at Historical Cost which include all expenditure of capital nature less CENVAT where availed.

Assets acquired under hire purchase agreements are capitalized to the extent of principal value while interests on hire charges are expensed.

3. Depreciation:

Depreciation has been calculated on straight line method for all assets put into use on or after 01 04 1991 & written down value method for assets put into use before 01 04 1991 at the rates specified in schedule XIV of the companies Act. Depreciation on addition to assets during the year is provided on pro rata time basis.

4. Inventories:

In line with the mandatory application of Accounting Standards 2 on valuations of inventories issued by the Institute of Chartered Accounts of India, the inventories except the waste valued at lower of cost or net realizable value. Waste are valued at net realizable value.

5. Foreign Currency Transactions:

Transactions in foreign currencies are recorded at exchange rates prevailing on the respective dates of relevant transactions. The exchange differences, except those relating to acquisition of fixed assets, are recognized as Income/Expenses in the Profit & Loss Account.

6. Employee Retirement Benefits:

Retirement Benefits are provided by charge to revenue including provision for gratuity determined on an actuarial basis under group gratuity scheme with life Insurance Corporation of India.

7. Investments:

Investments are stated at cost. All investments are treated as long term investments and provision will be made to recognize decline, other than temporary, if any, in the value of such investments.

8. Government Grant:

Government Grant relating to wind mill project is treated as deferred income and allocated to income over the period and in the proportion in which depreciation (5.28%) on the Wind Mill is charged.

9. Dividend Income:

Dividend Income is accounted for when the same is declared in the share holders meeting.

10. Finance Charges:

Finance Charges in respect of all hire purchase transactions are apportioned over the period of contract on even spread method.

11. Consignment sales:

Consignment sales and expenses are incorporated on the basis of sales note received from the consignees.

12. Accounting for Taxes on Income:

Income-tax expenses are accounted in accordance with Accounting Standard 22- "Accounting for Taxes on Income" which includes current taxes and deferred taxes. Deferred taxes reflect the impact of current year timing differences between

taxable income and accounting income for the year and reversal of timing differences of earlier years.

13. Borrowing Costs:

Borrowing Costs that are attributable to the acquisition or construction of qualifying assets are capitalized as part of the cost of such assets. A qualifying asset is one that necessarily takes substantial period of time to get ready for intended use. All other borrowing costs are charged to revenue.

14. Contingent Liabilities:

Contingent Liabilities are considered only when they are converted into demands.

15. Prior Period Items:

All items of Incomes and Expenses pertaining to the year are included in arriving at the Net Profit for the year unless specifically mentioned elsewhere in the financial statements or as required by the Accounts Standard.

16. Impairment of Assets:

Consideration is given at each Balance Sheet date to determine whether there is any modification or impairment of the carrying amount of any asset exceeds recoverable amount.

17. Revenue Recognition:

Revenue from Sales transaction is recognized as and when the property in the goods sold is transferred to the buyer for a definite consideration. Revenue from other sources is recognized on the completion of the contract and there is no uncertainty regarding the amount of consideration or collectability.

Sales reported are inclusive of Excise Duty.

Proceeds of Export Sales of Paper are accounted in equivalent rupee value at the time of transaction. Gains or Losses on the basis of credit given by the banker within the same year are recognized in the Profit & Loss Account prepared for the said year.

Dividend Income from investments and statutory receipts like Subsidy etc., are accounted in the year in which they are actually received.

Other incomes are accounted on accrual basis.

2.4d PRODUCTION DEPARTMENT:

Production process

In a paper machine, interrelated mechanisms operating in unison receive paper stock from the beater, form it into a sheet of the desired weight by filtration, press and consolidate the sheet with removal of excess water, dry the remaining water by evaporation, and wind the traveling sheet into reels of paper. Paper machines may vary in width from about 1.5 to 8 metres (5 to 26 feet), in operating speed from a few hundred metres to 900 metres (about 3,000 feet) per minute, and in production of paper from a few tons per day to more than 300 tons per day. The paper weight (basis weight) may vary from light tissue, about 10 grams per square metre (0.03 ounce per square foot), to boards of more than 500 grams per square metre (1.6 ounces per square foot).

2.4e ENGINEERING DEPARTMENT

Chief engineer is overall in-charge of engineering department. He should guide all the assistant engineers and mechanical engineers and the supervisory staffs and workers of Engineering department. He should examine the technical results of the mills as per norms and improving the working conditions and bring the profit to the maximum.

Each department is headed by the respective officer concern and sub staffs and skilled workers were provided where ever necessary, according to the climatic condition of the administration.

2.5 LABOUR WELFARE FACILITIES AND FRINGE BENEFITS

2.5a REST ROOMS

They are two rooms for staffs and workers for taking rest in their leisure time.

2.5b FIRST AID

The medical team keeps First aid medicines and dressing materials inside the factory. Once in 15 days the medicines are Verified and Registered by the in charge.

2.5c LEAVE

Every permanent employee shall be eligible to get a **casual leave** not exceeding **12 days** in a calendar year. **Seasonal workers** shall eligible for casual leave **not exceeding 6 days** in a calendar year.

2.5d UNIFORM:

Uniform are supplied to all the employees, including supervisory 3 sets was issued once in 2 years.

2.5e INSURANCE:

A group insurance is in operation under which the heirs/ nominees of the deceased will get a lump sum payment amounting to ten month salary with a maximum Rs.60,000/-

2.5f PURCHASE OF STORES ITEM:

Stores item like tools and spares, chemicals, electrical etc., required by the department. They can prepare the store intent and properly signed by the head of the department and send to the stores. In stores they verified the required item, if not available, with the approval of special officer the committee was formed and make decision about the purchase of to the product.

The items which are received by the stores that are properly entered in the kardex which was maintained by the stores accountant. In the kardex the opening balance are properly recorded for the all issue and receipts.

If the item received by the firm was recorded in the stores request record entry which is properly programmed in computer. If any item issued, the department which was received should be debited. Then monthly store statement was prepared by the store accountant.

2.6 ACCOUNTING METHODS

2.6a CASH RECEIPTS BANK VOUCHER

It is manually prepared by the accountant. The amount received in the form of cash like amount received by sale of paper are entered and properly signed by the remitter and authorities.

Separate voucher was created for the amount received in the form of cheque. If cheque is received by the mill, it'l sends to clearing to bank and properly recorded.

2.6b DAY BOOK

It contains only the receipts and payments of the mill in cash and bank. It is divided into two types as Receipts day book and payment day book. Payment, receipts day book includes the cash and bank, receipts and payments from the cash receipts and bank voucher the transaction was entered in the computer which was programmed procedure. Daily the day book balanced and balance automatically carryover to the next day.

2.6c JOURNAL DAY BOOK

It contains non cash & non bank transaction. The journal entries are properly recorded in the computer it includes journal voucher number, narrations and account code number.

2.6d GENERAL LEDGER BOOK

After entered the journal entries the computer, automatically transfer the transaction to general ledger book. It contains the voucher number and various particulars about the transactions. Ledger account was properly balanced for a period of one month and it was properly checked & signed by the accountant and assistant accountant.

2.6e RECEIPTS AND CHARGES STATEMANT AND TRIAL BALANCE

Ledger closing balances are properly recorded by the accountant in the receipts and charges notebook. At the end of the year the amounts properly transfer to the preparation of trial balance. The trial balance was manually prepared by the accountant with the help of receipt and charges statement.

2.6f TRADING, PROFIT&LOSS ACCOUNT

Separate trading accounts are prepared for manufacturing & paper trading and balance carry over to profit & loss account. It is also manually prepared by the accountant.

2.6g BALANCE SHEET

Mills balance sheet is properly audited by the auditor. For fixed assets depreciation was calculated on written down value method. For other assets straight line method was followed by the concern.

2.6h PAY BILL

The pay scales to the employee of the paper mill are based on the recommendation of payment of wages act amended by the Government of India. Pay amount is prepared department wise. And various recoveries are prepared separately as a whole to the mill.

Provident fund contribution and group insurance are compulsory deduction. After adjusting all deductions and additions the remaining amount is a net pay was rounded off to nearest one rupee, the excess amount carry over to the next month.

Salary is given to the employee in two ways. It is directly paid to the employee or it is send to the bank account according to the instruction given by the employee. And the employee properly binged in the dually stamped paper for the salary amount received by him.

CHAPTER III

MACRO-MICRO ANALYSIS

CHAPTER III

MACRO- MICRO ANALYSIS

3.1 PAPERMAKING

Formation of a matted or felted sheet, usually of cellulose fibres, from water suspension on a wire screen. Paper is the basic material used for written communication and the dissemination of information. In addition, paper and paperboard provide materials for hundreds of other uses, such as wrapping, packaging, toweling, insulating, and photography.

The word paper is derived from the name of the reedy plant papyrus, which grows abundantly along the Nile River in Egypt. In ancient times, the fibrous layers within the stem of this plant were removed, placed side by side, and crossed at right angles with another set of layers similarly arranged. The sheet so formed was dampened and pressed. Upon drying, the gluelike sap of the plant, acting as an adhesive, cemented the layers together. Complete defibring, an indispensable element in modern papermaking, did not occur in the preparation of papyrus sheets. Papyrus was the most widely used writing material in ancient times, and many papyrus records still survive.

3.2 HISTORICAL DEVELOPMENT

Papermaking can be traced to about AD 105, when Ts'ai Lun, an official attached to the Imperial court of China, created a sheet of paper using mulberry and other bast fibres along with fishnets, old rags, and hemp waste. In its slow travel westward, the art of papermaking reached Samarkand, in Central Asia, in 751; and in 793 the first paper was made in Baghdad during the time of Harun ar-Rashid, with the golden age of Islamic culture that brought papermaking to the frontiers of Europe.

By the 14th century a number of paper mills existed in Europe, particularly in Spain, Italy, France, and Germany. The invention of printing in the 1450s brought a vastly increased demand for paper. Through the 18th century the papermaking process

remained essentially unchanged, with linen and cotton rags furnishing the basic raw materials. Paper mills were increasingly plagued by shortages; in the 18th century they even advertised and solicited publicly for rags. It was evident that a process for utilizing a more abundant material was needed.

Improvements in materials and processes

In 1800 a book was published that launched development of practical methods for manufacturing paper from wood pulp and other vegetable pulps. Several major pulping processes were gradually developed that relieved the paper industry of dependency upon cotton and linen rags and made modern large-scale production possible. These developments followed two distinct pathways. In one, fibres and fibre fragments were separated from the wood structure by mechanical means; and in the other, the wood was exposed to chemical solutions that dissolved and removed lignin and other wood components, leaving cellulose fibre behind. Made by mechanical methods, groundwood pulp contains all the components of wood and thus is not suitable for papers in which high whiteness and permanence are required. Chemical wood pulps such as soda and sulfite pulp (described below) are used when high brightness, strength, and permanence are required. Groundwood pulp was first made in Germany in 1840, but the process did not come into extensive use until about 1870. Soda pulp was first manufactured from wood in 1852 in England, and in 1867 a patent was issued in the United States for the sulfite pulping process.

Before 1800, paper sheets were sized by impregnation with animal glue or vegetable gums, an expensive and tedious process. In 1800 Moritz Friedrich Illig in Germany discovered that paper could be sized in vats with rosin and alum. Although Illig published his discovery in 1807, the method did not come into wide use for about 25 years.

Discovery of the element chlorine in 1774 led to its use for bleaching paper stock. Lack of chemical knowledge at the time, however, resulted in production of inferior paper by the method, discrediting it for some years. Chlorine bleaching is a common papermaking technique today.

Introduction of machinery

Prior to the invention of the paper machine, paper was made one sheet at a time by dipping a frame or mold with a screened bottom into a vat of stock. Lifting the mold allowed the water to drain, leaving the sheet on the screen. The sheet was then pressed and dried. The size of a single sheet was limited to the size of frame and mold that a man could lift from a vat of stock.

In 1798 Nicolas-Louis Robert constructed a moving screen belt that would receive a continuous flow of stock and deliver an unbroken sheet of wet paper to a pair of squeeze rolls. The French government recognized Robert's work by the granting of a patent.

The paper machine did not become a practical reality, however, until two engineers in England, both familiar with Robert's ideas, built an improved version for their employers, Henry and Sealy Fourdrinier , in 1807. The Fourdrinier brothers obtained a patent also. Two years later a cylinder paper machine (described below) was devised by John Dickinson, an English papermaker. From these crude beginnings, modern papermaking machines evolved. By 1875 paper coated by machinery was being made for use in the printing of halftones by the new photoengraving process, and in 1884 Carl F. Dahl invented sulfate (Kraft) pulp in Danzig, Germany.

Although the paper machine symbolizes the mechanization of the paper industry, every step of production, from the felling of trees to the shipment of the finished product, has also seen a dramatic increase in mechanization, thus reducing hand labour. As papermaking operations require the repeated movement of large amounts of material, the design and mechanization of materials-handling equipment has been and continues to be an important aspect of industry development.

Although modern inventions and engineering have transformed an ancient craft into a highly technical industry, the basic operations in papermaking remain the same to this day. The steps in the process are as follows: (1) a suspension of cellulosic fibre is prepared by beating it in water so that the fibres are thoroughly separated and saturated with water; (2) the paper stock is filtered on a woven screen to form a matted sheet of

fibre; (3) the wet sheet is pressed and compacted to squeeze out a large proportion of water; (4) the remaining water is removed by evaporation; and (5) depending upon use requirements, the dry paper sheet is further compressed, coated, or impregnated.

The differences among various grades and types of paper are determined by: (1) the type of fibre or pulp, (2) the degree of beating or refining of the stock, (3) the addition of various materials to the stock, (4) formation conditions of the sheet, including basis weight, or substance per unit area, and (5) the physical or chemical treatment applied to the paper after its formation.

Wastepaper and paperboard

By using greater quantities of wastepaper stock, the need for virgin fibre is reduced, and the problem of solid waste disposal is minimized. The expansion of this source is a highly complex problem, however, because of the difficulties in gathering wastepaper from scattered sources, sorting mixed papers, and recovering the fibre from many types of coated and treated papers.

Wastepaper may be classified into four main categories: high-grades, old corrugated boxes, printed news, and mixed paper. High-grade and corrugated stocks originate mainly in mercantile and industrial establishments. White paper wastes accumulate in envelope and printing plants, while tabulating cards are supplied by large offices. Much magazine stock comes from newsstand returns, but some comes from homes. Corrugated waste is supplied by manufacturing plants and retail stores. Printed news is derived from newsstand returns and home collections. Mixed paper comes from wastebaskets of office buildings and similar sources. In recent years there has been considerable interest in wastepaper recycling in the interest of ecology.

3.3 MANUFACTURE OF PAPER AND PAPERBOARD

Preparation of stock

Mechanical squeezing and pounding of cellulose fibre permits water to penetrate its structure, causing swelling of the fibre and making it flexible. Mechanical action, furthermore, separates and frays the fibrils, submicroscopic units in the fibre structure.

Beating reduces the rate of drainage from and through a mat of fibres, producing dense paper of high tensile strength, low porosity, stiffness, and rattle.

An important milestone in papermaking development, the Hollander beater consists of an oval tank containing a heavy roll that revolves against a bedplate. The roll is capable of being set very accurately with respect to the bedplate, for the progressive adjustment of the roll position is the key to good beating. A beater may hold from 135 to 1,350 kilograms (300 to 3,000 pounds) of stock, a common size being about 7 metres (24 feet) long, 4 metres (12 feet) wide, and about 1 metre (3.3 feet) deep. A centre partition provides a continuous channel.

Pulp is put into the beater, and water is added to facilitate circulation of the mass between the roll and the bedplate. As the beating proceeds, the revolving roll is gradually lowered until it is riding full weight on the fibres between it and the bedplate. This action splits and mashes the fibres, creating hairlike fibrils and causing them to absorb water and become slimy. The beaten fibres will then drain more slowly on the paper machine wire and bond together more readily as more water is removed and the wet web pressed. Much of the beating action results from the rubbing of fibre on fibre. Long fibres will be cut to some extent.

The beater is also well-adapted for the addition and mixing of other materials, such as sizing, fillers, and dyes. By mounting a perforated cylinder that can rotate partially immersed in the beater stock, water can be continuously removed from the beater, and the stock therefore can be washed.

Although many design modifications have been made in the Hollander beater over the years, the machine is still widely used in smaller mills making specialty paper products. For large production modern mills have replaced the beater by various types of continuous refiners.

In mills that receive baled pulp and use refiners, the pulp is defibred in pulpers. While there are a number of variations in basic design, a pulper consists essentially of a large, open vessel, with one or more bladed, rotating elements that circulate a pulp-water mixture and defibre or separate fibres. The blades transform the pulp or wastepaper into a

smooth mixture. Unlike beaters and refiners, pulpers do not reduce freeness and cause fibrillation in the fibres. A typical pulper has a capacity of 900 kilograms (2,000 pounds) of fibre in 6 percent solution and requires 150 horsepower to drive it.

The original continuous refiner is the Jordan, named after its 19th-century inventor. Like the beater, the Jordan has blades or bars, mounted on a rotating element, that work in conjunction with stationary blades to treat the fibres. The axially oriented blades are mounted on a conically shaped rotor that is surrounded by a stationary bladed element (stator).

Like other refiners, the disk refiner consists of a rotating bladed element that moves in conjunction with a stationary bladed element. The disk refiner's plane of action, however, is perpendicular to the axis of rotation, simplifying manufacture of the treating elements and replacement. Since the disk refiner provides a large number of working edges to act upon the fibre, the load per fibre is reduced and fibre brushing, rather than fibre cutting, may be emphasized.

Sizing has been described above as the treatment given paper to prevent aqueous solutions, such as ink, from soaking into it. A typical sizing solution consists of a rosin soap dispersion mixed with the stock in an amount of 1 to 5 percent of fibre. Since there is no affinity between rosin soap and fibre, it is necessary to use a coupling agent, normally alum (aluminum sulfate). The acidity of alum precipitates the rosin dispersion, and the positively charged aluminum ions and aluminum hydroxide flocs (masses of finely suspended particles) attach the size firmly to the negatively charged fibre surface.

Paper intended for writing or printing usually contains white pigments or fillers to increase brightness, opacity, and surface smoothness, and to improve ink receptivity. Clay (aluminum silicate), often referred to as kaolin or china clay, is commonly used, but only in a few places in the world (Cornwall, in England, and Georgia, in the United States) are the deposits readily accessible and sufficiently pure to be used for pigment. Another pigment is titanium dioxide (TiO2), prepared from the minerals rutile and anatase. Titanium dioxide is the most expensive of the common pigments and is often used in admixture with others.

Calcium carbonate (CaCO3), also used as a filler, is prepared by precipitation by the reaction of milk of lime with either carbon dioxide (CO2) or soda ash (sodium carbonate, Na2CO3). Calcium carbonate as a paper filler is used mainly to impart improved brightness, opacity, and ink receptivity to printing and magazine stocks. Specialty uses include the filling of cigarette paper, to which it contributes good burning properties. Because of its reactivity with acid, calcium carbonate cannot be used in systems containing alum.

Other fillers are zinc oxide, zinc sulfide, hydrated silica, calcium sulfate, hydrated alumina, talc, barium sulfate, and asbestos. Much of the filler consumed is used in paper coatings (see below).

Since most fillers have no affinity for fibres, it is necessary to add an agent such as alum to help hold the filler in the formed sheet. The amount of filler used may vary from 1 to 10 percent of the fibre.

The most common way to impart colour to paper is to add soluble dyes or coloured pigment to the paper stock. Many so-called direct dyes with a natural affinity for cellulose fibre are highly absorbed, even from dilute water solution. The so-called basic dyes have a high affinity for groundwood and unbleached pulps.

Various agents are added to paper stock to enhance or to modify the bonding and coherence between fibres. To increase the dry strength of paper, the materials most commonly used are starch, polyacrylamide resins, and natural gums such as locust bean gum and guar gum. The most common type of starch currently used is the modified type known as cationic starch. When dispersed in water, this starch assumes a positive surface charge. Because fibre normally assumes a negative surface charge, there is an affinity between the cationic starch and the fibre.

The natural cellulose interfibre bonding that develops as a sheet of paper dries is considered to be due to interatomic forces of attraction known to physical chemists as hydrogen bonding or vander Waals forces. Because these attractive forces are neutralized or dissolved in water, wet paper has practically no strength. Although this property is convenient for the recovery of wastepaper, some papers require wet strength for their

intended use. Wet strength is gained by adding certain organic resins to the paper stock that, because of their chemical nature, are absorbed by the fibre. After formation and drying of the sheet, the resins change to an insoluble form, creating water-resistant bonds between fibres.

Formation of paper sheet by machines

In a paper machine, interrelated mechanisms operating in unison receive paper stock from the beater, form it into a sheet of the desired weight by filtration, press and consolidate the sheet with removal of excess water, dry the remaining water by evaporation, and wind the traveling sheet into reels of paper. Paper machines may vary in width from about 1.5 to 8 metres (5 to 26 feet), in operating speed from a few hundred metres to 900 metres (about 3,000 feet) per minute, and in production of paper from a few tons per day to more than 300 tons per day. The paper weight (basis weight) may vary from light tissue, about 10 grams per square metre (0.03 ounce per square foot), to boards of more than 500 grams per square metre (1.6 ounces per square foot).

Traditionally, paper machines have been divided into two main types: cylinder machines and Fourdrinier machines. The former consists of one or more screen-covered cylinders, each rotating in a vat of dilute paper stock. Filtration occurs by flow action from the vat into the cylinder, with the filtrate being continuously removed. In the Fourdrinier machine a horizontal wire-screen belt filters the stock. In recent years a number of paper machines have been designed that depart greatly from traditional design. These machines are collectively referred to as "formers." Some of these formers retain the traveling screen belt but form the sheet largely on a suction roll. Others eliminate the screen belt and use a suction cylinder roll only. Still others use two screen belts with the stock sandwiched between, with drainage on both sides.

Various agents are added to paper stock to enhance or to modify the bonding and coherence between fibres. To increase the dry strength of paper, the materials most commonly used are starch, polyacrylamide resins, and natural gums such as locust bean gum and guar gum. The most common type of starch currently used is the modified type known as cationic starch. When dispersed in water, this starch assumes a positive surface

charge. Because fibre normally assumes a negative surface charge, there is an affinity between the cationic starch and the fibre.

In a typical modern Fourdrinier machine the various functional parts are the headbox; stock distribution system; Fourdrinier table, where sheet formation and drainage of water occur; press section, which receives the wet sheet from the wire, presses it between woolen felts, and delivers the partially dried sheet to the dryer section; dryer section, which receives the sheet from the presses and carries it through a series of rotating, steam-heated cylinders to remove the remaining moisture; size press, which permits dampening the sheet surface with a solution of starch, glue, or other material to improve the paper surface; calendar stack, for compressing and smoothing the sheet; and the reel.

The function of the headbox is to distribute a continuous flow of wet stock at constant velocities, both across the width of the machine and lengthwise of the sheet, as stock is deposited on the screen. Equal quantities of properly dispersed stock should be supplied to all areas of the sheet-forming surface. The early headbox, more commonly called a flowbox or breastbox, consisted of a rectangular wooden vat that extended across the full width of the machine behind the Fourdrinier breast roll. The box was provided with baffles to mix and distribute the stock. A flat metal plate extending across the machine (knife slice) improved dispersion of the fibre suspension, providing distribution of flow across the machine, and also metered the flow to produce a sheet of uniform weight. To accommodate increased speed in modern headboxes, the knife slice is designed to develop a jet of liquid stock on the moving wire. Modern headboxes are enclosed, with pressure maintained by pumping.

The Fourdrinier table section of a paper machine is a large framework that supports the table rolls, breast roll, couch roll, suction boxes, wire rolls, and other Fourdrinier parts. The wire mesh upon which the sheet of fibre is formed is a continuous rotating belt that forms a loop around the Fourdrinier frame. The wire, not a permanent part of the machine, is delicate and requires periodic replacement. It is a finely woven metal or synthetic fibre cloth that allows drainage of the water but retains most of the fibres. The strands of the Fourdrinier wire are usually made of specially annealed bronze

or brass, finely drawn and woven into a web commonly in the range of 55 to 85 mesh (strands per inch). Even finer wires are used for such grades as cigarette paper, coarser wires for heavy paperboard and pulp sheets. Various types of weave are used to obtain maximum wire life.

The table rolls, in addition to supporting the wire, function as water-removal devices. The rapidly rotating roll in contact with the underside of the wire produces a suction or pumping action that increases the drainage of water through the wire.

The dandy roll is a light, open-structured unit covered with wire cloth and placed on the wire between suction boxes, resting lightly upon the wire and the surface of the sheet. Its function is to flatten the top surface of the sheet and improve the finish. When the dandy roll leaves a mesh or crosshatch pattern, the paper is said to be "woven." When parallel, translucent lines are produced, it is said to be "laid." When names, insignia, or designs are formed, the paper is said to be "watermarked." Paper watermarks have served to identify the makers of fine papers since the early days of the art. A watermark is actually a thin part of the sheet and is visible because of greater transmission of light in its area compared with other areas of the sheet. Because light transmission can be varied by degrees, it is possible to produce watermarks in the form of portraits or pictures.

The final roll over which the formed sheet passes, before removal from the Fourdrinier wire, is the couch roll. Prior to the transferring operation, the couch roll must remove water from and consolidate the sheet to strengthen it. In modern machines the couch roll is almost always a suction roll.

The press section increases the solids content of the sheet of paper by removing some of the free water contained in the sheet after it is formed. It then carries the paper from the forming unit to the dryer section without disrupting or disturbing sheet structure and reduces the bulk or thickness of the paper.

Felts for the press section act as conveyor belts to assist the sheet through the presses, as porous media to provide space and channels for water removal, as textured cushions or shock absorbers for pressing the moist sheet without crushing or significant marking, and as power transfer belts to drive nondriven rolls or parts.

Woven felts of wool, often with up to 50 percent synthetic fibres, are made by a modified woolen textile system. Selected grades of wool are scoured, blended, carded, and spun into yarn. The yarn is woven into flat goods, leaving a fringe at each end. The ends are brought together and joined to produce an endless, substantially seamless belt.

Paper machine felts have a limited life ranging from about a week to several months. Their strength and water-removal ability is gradually lost through wear and chemical and bacterial degradation and by becoming clogged with foreign material.

Press rolls must be strong, rigid, and well-balanced to span the wide, modern machines and run at high speed without distortion and vibration. Solid press rolls consist of a steel or cast iron core, covered with rubber of various hardnesses depending upon the particular service required. Suction press rolls consist of a bronze or stainless steel shell two inches (five centimetres) or more in thickness and usually covered with one inch of rubber.

Paper leaving the press section of the machine has a solids content or dryness of 32 to 40 percent. Because of the relatively high cost of removing water by evaporation, compared with removing it by mechanical means, the sheet must be as dry as possible when it enters the dryers. The dryer section of a conventional paper machine consists of from 40 to 70 steam-heated drying cylinders. After passing around the cylinders, the sheet is held in intimate contact with the heated surfaces by means of dryer felts.

For conventional dryer felts, cotton is still the most commonly used fibre, although it is seldom used alone. The main difference between the conventional dryer felt and the open-mesh dryer fabric is air or vapour permeability. High permeability is desirable because it allows the escape of the water vapour from the sheet.

For every ton of paper dried on the paper machine, approximately two tons of water are evaporated into the atmosphere. About 50 to 60 tons of air are required to remove the water vapour, with about 2,700 kilograms (6,000 pounds) of steam required by the dryers.

Finishing and converting

The rolls of paper produced by the paper machine must still undergo a number of operations before the paper becomes useful to the consumer. These various operations are referred to as converting or finishing and often make use of intricate and fast-moving machinery.

There are two distinct types of paper conversion. One is referred to as wet converting, in which paper in roll form is coated, impregnated, and laminated with various applied materials to improve properties for special purposes. The second is referred to as dry converting, in which paper in roll form is converted into such items as bags, envelopes, boxes, small rolls, and packs of sheets. A few of the more important converting operations are described here.

Paper has been coated to improve its surface for better reproduction of printed images for over 100 years. The introduction of half-tone and colour printing has created a strong demand for coated paper. Coatings are applied to paper to achieve uniformity of surface for printing inks, lacquers, and the like; to obtain printed images without blemishes visible to the eye; to enhance opacity, smoothness, and gloss of paper or paperboard; and to achieve economy in the weight and composition of base paper stock by the upgrading effect of coating.

The chief components of the water dispersion used for coating paper are pigment, which may be clay, titanium dioxide, calcium carbonate, satin white, or combinations of these; dispersants to give uniformity to the mixture or the "slip"; and an adhesive binder to give coherence to the finished coating. The latter may be a natural material such as starch or a synthetic material such as latex.

The extrusion-coating process, a relatively new development in the application of functional coating, has gained major importance in the past 20 years. The process is used to apply polyethylene plastic coatings to all grades of paper and paperboard. Polyethylene resin has ideal properties for use with packaging paper, being waterproof; resistant to

grease, water vapour, and gases; highly stable; flexible in heat sealing; and free from odour and toxicity.

In the extrusion-coating machine, the polyethylene resin is melted in a thermoplastic extruder that consists of a drive screw within an electrically heated cylinder. The cylinder melts and compacts the resin granules and extrudes the melt in a continuous flow under high pressure. The resin is discharged through a film-forming slot die. The die has electric heaters with precision temperature controls to give uniform temperature and viscosity to the plastic melt. The slot opening can be precisely adjusted to control film uniformity and thickness.

The most widely used package for commodities and manufactured products is the corrugated shipping container. A corrugated box consists of two structural elements: the facings (linerboard) and the fluting structure (corrugating medium).

3.4 THE WORLD PAPER INDUSTRY

The paper industry tends to be concentrated in those countries that are industrially advanced and have abundant supplies of fibrous raw material, especially wood. There is a large-scale international trade in wood pulp, pulpwood, and paper flowing from those countries with large forest resources to those countries with less or that are as yet undeveloped.

3.5 PAPER- GENERAL PROPERTIES

Thickness (Caliper)

Since thickness of paper is affected by its moisture content, due care is to be taken regard to conditioning of paper.

Apparent density / bulk

Typical values of apparent density range from 0.75(in loosely formed or less dense papers) to 1.20 for highly bonded sheets. Since density of cellulose (major paper making ingredient) is 1.5,lower value of apparent density means larger fraction of paper volume having air and vice-versa .In most papers,roughly 50% of volume is air. Apparent density affects nearly all properties of paper. The inverse of apparent densityis called as 'Bulk'. A bulky paper will be more opaque and soft. Bulky paper may cause more ink absorption during printing.

Smoothness

In comparison to a perfectly flat surface, paper surface may have hills and valleys .Presence of hills and valleys to lesser extent will characterise a smoother surface. Thus we have papers of varying degree of smoothness being referred as having either 'smooth' or 'rough' texture. Smoother paper will give better print reproduction but will be stiffer .Generally smoothness is achieved by calendering / supercalendering .Higher calendering might give reduced brightness and poor opacity.

Porosity

Paper is porous i.e. paper has air-space in between its constituents namely fibres and fines. Consequently, density of paper is less and these spaces give way for permeability of air and liquid.

Strength Properties

Strength of a material refers to the ability of material to withstand applied load. Printing / writing paper or base paper for coating experience different types and magnitude of load during converting operations and their use. It is useful to know the extent of load that these papers will be able to sustain to avoid breaks during printing or coating operations.

Tensile Strength

Tensile strength is dependent upon gammage (hence thickness) of specimen. In order that tensile strength of specimens with varying grammage may be compared, the term breaking length is used. This is defined as the length of specimen which breaks under its own weight.

Tear Strength

This parameter indicates the resistance of paper to tearing action. Tear strength is defined as amount of energy consumed in continuing the tearing of a given paper. Tear factor is tear strength (gmf) per unit grammage (g/m^2).

Double fold

This parameter represents the resistance of paper to repeated folding / unfolding as is experienced in case of ledger bank notes etc.It also Indicates deterioration of paper with time. Consequently , folding endurance is of importance for currency, ledger , map, blue print, record papers where resistance against repeated folding / unfolding is required alongwit longevity. When paper undergoes repeated folding, the fibres strain initially. Gradually fiber-fiber bonding starts loosening resulting into decrease of tensile strength. Consequently, folding endurance is determination of modified tensile strength. For example the paper failing after experiencing 1000 double folds , in comparision to the other failing after 100 double folds, will not have 10 times more life than weaker paper against folding / unfolding stress while in use but roughly only 1.5 times life. Thus number of folds represented log to the base 10(Log_{10}) gives better comparision of folding strength.

Bending Stiffness

Paper reqiure certain stiffness no matter what is its use .Copying machines could not function properly without proper bending stiffness. Even when we read our daily news paper we hold the paper for which some bending stiffness is required. Bending stiffness represents the capability of paper / board to resist the forces responsible for bending action. It also indicates the capability of paper to support its own weight while clamped in cantilever form.

Optical Properties

Appearance of paper and ease in reading a paper printed / written on both sides is defined by optical properties namely brightness, opacity and gloss. Interaction of light with paper is basic for understanding as to how these properties are defined and measured in case of paper. First let us discuss paper light interaction.

Light-Sheet Interaction

When light falls on any material, a part of it is reflected, another part is absorbed and the rest is transmitted through the body. In case of paper, for most of the applications, only the reflected and transmitted fractions are of greater importance.

Appearance of paper depends on nature and amount of reflectance/transmittance, in following manner-

Paper	**Diffused reflectance**	**Diffused transmittance**	**Specular reflectance**
Black Glazed	Very low	Very low	High(w.r.to diffused)
White, translucent(tracing paper)	Medium	Medium	Very low
White , opaque	High	Very low	Very low

Brightness

A paper sheet appears brighter if it reflects (diffused) preferentially blue colour (wave length=457nm).Pulp is bleached before making cultural paper, so that the resulting sheet formed is bright. This is because a sheet formed of unbleached pulp looks pale and

hence is not pleasing in appearance. The degree of bleaching is measured by the extent of blue colour reflectance. Due to these reasons, brightness of a sheet is measured as the diffused reflectance of blue colour from an opaque pad of such sheets.

Opacity

This property refers to see through characteristic of a paper sheet. Consider a paper printed on both the sides, when you read one side of this paper, you dread the impression of the text printed on the other side. The quality of printing might be good but look through characteristic makes overall bad printing. This is due to less opacity of paper and is attributed to larger degree of diffused transmission. Thus a perfectly opaque paper is one which is absolutely impervious to all visible light (zero diffused transmission). Black paper used to wrap photographic films is nearest to perfect opaque paper. However, normal book papers have opacity of approximately 90%.

Gloss

Gloss is the attribute of surfaces which is responsible for their shiny appearance. Thus a glossy surface will be shiny. It is associated with specular reflection from the given surface. Thus in some surfaces, the amount of light reflected in different directions will be same but in some, the reflection along 90^{o} ($i = 0^{o}$) will be more than those along other directions. The latter surfaces are termed as 'Glossy' and the former, at the other extreme, are termed 'matt'. So in glossy surface, there is selective reflection along a particular direction (angle0^{o}) over others.

Sheen

For surfaces with low gloss e.g. low finished, uncoated paper 'matt', gloss measurement is done at 85^{o} angle and field angles. The result is usually reported as 'Sheen'.

3.6 PAPER INDUSTRY- INDIAN SCENARIO

Introduction On Paper Industry

The new millennium is going to be the millennium of the knowledge. So demand for paper would go on increasing in times to come. In view of paper industry's strategic role for the society and also for the overall industrial growth it is necessary that the paper industry performs well.

Government has completely delicensed the paper industry with effect from17th July, 1997. The entrepreneurs are now required to file an Industrial Entrepreneur Memorandum with the Secretariat for Industrial Assistance for setting up a new paper mill or substantial expansion of the existing mill in permissible locations.

The Paper industry is a priority sector for foreign collaboration and foreign equity participation upto 100% receives automatic approval by Reserve Bank of India. Several fiscal incentives have also been provided to the paper industry, particularly to those mills which are based on non-conventional rawmaterial.

Capacity, Production, Rawmaterial and Import

There are, at present, about 515 units engaged in the manufacture of paper and paperboards and newsprint in India. The country is almost self-sufficient in manufacture of most varieties of paper and paperboards. Import, however, is confined only to certain specialty papers. To meet part of its raw material needs the industry has to rely on imported wood pulp and waste paper. Production of paper & paperboard during the year 2002-03(upto December, 2002) is 24.52 lakhs tonnes. At present about 60.8 per cent of the total production is based on non-wood raw material and 39.2 per cent based on wood.

Performance of the industry has been constrained due to high cost of production caused by inadequate availability and high cost of raw materials, power cost and concentration of mills in one particular area.

Several policy measures have been initiated in recent years to remove the bottlenecks of availability of raw materials and infrastructure development. To bridge the gap of short supply of raw materials, duty on pulp and waste paper and wood logs/chips have been reduced. The capacity utilization of the industry is low at 60%. About 194 paper mills, particularly small mills, are sick and /or lying closed. Several policy measures have been initiated in recent years.

Imports of paper and paper products were growing over the years. However, it has increased during 2001-02 after a fall in 2000-01. About 1,40,000 tonnes of paper was exported in 2000-01 mainly to the neighboring countries.

India's per capita consumption of paper is around 4.00 kg, which is one of the lowest in the world. With the expected increase in literacy rate and growth of the economy, an increase in the per capita consumption of paper is expected.

Outlook

The demand for upstream market of paper products, like, tissue paper, tea bags, filter paper, light weight online coated paper, medical grade coated paper, etc., is growing up. These developments are expected to give fillip to the industry.

Indian paper industry needs the following for being globally more competitive.

i. Sustained availability of good quality of raw materials (forest based) and bulk import of waste paper to supplement the availability of raw materials.
ii. Adequate modernization of the manufacturing assests.
iii. Improvement of the infrastructure.
iv. Quality improvements and reduction in cost of production
v. Import policy conducive for import of material, equipment, instruments, raw materials & technologies which are bearing of the quality and environment.

Based on the recommendations made in the Report and in consultant with the industry Associations, action plans are being finalized in consultation with other Ministries/Departments concerned. The Main Action Points proposed are as under:

RawMaterial

(i) For Wood Based industry

Revision of forest policy so that plantation can be raised by industry/Cooperatives of farmers/State Government. Degraded forest land to be made available to the industry for raising plantations.

(ii)For Waste Paper based Industry

Import of waste paper at minimum import duty. Introduction of ecolabeling system where in products made from recycled fibres are rated higher than the products made form virgin fibre. Introduction of modern and effective collection and grading system.

(iii) For Agro Based Industry

Funds to be made available for technology up gradation for handling & processing of agro residue fibre, in small & medium scale industries.

GovernmentPolicies

Accelerated depreciation to partially mitigate high capital intensity. Allow duty free imports of new & second hand machinery/equipment for Technology Up gradation.

Energy Policy

Better availability & quality of coal. More uniform Energy Policy by States.

Dovetailing with the Union government's proposal on education for all - Sarva Shiksha Abhyan - the Indian Paper Manufacturers Association (IPMA), the apex body of

large integrated paper manufacturers, has requested for a Rs 2,000 crore 'paper fund'. To be set up on the lines of the existing technology upgradation fund (TUF), the proposed fund is expected to help smaller and medium-sized paper mills to work on energy conservation, quality upgradation, and production improvement.

Paper industry tends to be concentrated in those countries that are industrially advanced and have abundant supplies of fibrous raw material, especially wood. There is a large-scale international trade in wood pulp, pulpwood, and paper flowing from those countries with large forest resources to those countries with less or that are as yet undeveloped.

The Rs 22,0000-crore industry, which is expected to see an 8% growth this year, has urged the Union government to rationalise excise duty from 12% to 8% on all varieties of paper and paperboard, as mills are looking at upgrading 25% of their existing capacities.

"Despite the paper industry's critical importance for the educational sector and significant forward linkages to other manufacturing industries, paper and paper products face direct and indirect taxation of about 20%. This includes the current excise of 12%, VAT, octroi, etc," IPMA officials pointed out.

There are also different rates of 8% and 16% prevailing for some categories. The rationalisation to a uniform rate of 8% in excise duty is imminent.

IPMA has sought retention of customs duty at 10%, along with the re-introduction of SAD to maintain parity in global production costs. The paper industry is operating with farm forestry and agri-residues creating jobs in the farm sector.

A serious issues faced by the industry is unavailability of quality raw material at a competitive cost. The association has requested the government to consider the adoption of the multi-stakeholder partnership model, as proposed by the ministry of environment and forests (MoEF) for forestation of degraded land. "At least 2% degraded forestland must be accessible to the paper mills to produce pulpable wood to achieve cost competitiveness in terms of wood and freight.

Paper companies in India

Paper and Paper Products	Companies
Barcodes, Stickers & Labels	1068
Greeting, Visiting, Wedding & Invitation Cards	471
Handmade Paper & Handmade Paper Products	329
Merchant Traders	300
Miscellaneous Office & School Stationery Items	2062
Paper & Paper Products	2574
Paper Cone Making, Folding, Coating and Paper Making Machines	180
Rust Prevention and Corrosion Protection Products	84

CHAPTER IV

DATA ANALYSIS AND INTERPRETATION

CHAPTER IV
DATA ANALYSIS & INTERPRETATION

RATIO ANALYSIS

INTRODUCTION

Ratio analysis is an important and age old technique of financial analysis. The data given in financial statements are dump and are unable to communicate anything. Ratios are relative form of financial data and very useful technique to check upon the efficiency of a firm. Some ratios indicate the trend or progress or downfall of the firm.

MODE OF EXPRESSION

(i) RATE, which is the ratio between the two numerical facts over a period of time.

(ii) PURE RATIO OR PROPORTION which is arrived at by the simple division of one number by another.

(iii) PERCENTAGE which is a special type of rate expressing the relationship in hundred.

These alternative methods of expressing items which are related to each other are, for purpose of financial analysis, referred to as ratio analysis. In other words, ratios as a tool of financial management, can be expressed as

(i) Pure Ratio

(ii) Percentage and

(iii) A stated comparison between numbers.

STEPS IN RATIO ANALYSIS

The first task of the financial analyst is to select the information relevant to the decision under consideration from the statements and calculates appropriate ratios.

The second step is to compare the calculated ratios with the ratios of the same firm relating to past or with the industry ratios. This step facilitates in assessing success or failure of the firm.

The third step involves interpretation drawing of inferences and report-writing. Conclusions are drawn after comparison in the shape of report or recommended course of action.

NATURE OF RATIO ANALYSIS

Ratio analysis is a powerful tool of financial analysis. A ratio is defined as "the indicated quotient of two mathematical expressions" and as "the relationship between two or more things". In financial analysis, a ratio is used as an index or yardstick for evaluating the financial position and performance of a firm. The absolute accounting figures provided a meaningful understanding of performance and financial performance of a firm. An accounting figure conveys meaning when it is related to some other relevant information.

CLASSIFICATION OF RATIOS

Ratios can be classified for the purpose of exposition into four broad groups:

1. Liquidity Ratios
2. Long term solvency and Leverage ratios
3. Activity Ratios
4. Profitability Ratios

I. LIQUIDITY RATIOS

1. CURRENT RATIO

Current Ratio is the most common ratio measuring liquidity. Being related to working capital analysis, it is also called the working capital ratio. Current ratio expresses relationship between current assets and current liabilities. The current ratio is the ratio of total current assets to total current liabilities. In a sound business, a current ratio of 2:1 is considered as ideal one.

FORMULA

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

TABLE 4.1

CURRENT RATIO

YEAR	CURRENT ASSETS (in Rs)	CURRENT LIABILITIES (in Rs)	RATIO (in times)
2002-2003	11,80,00,390	4,10,31,511	2.876
2003-2004	14,95,54,297	5,80,70,808	2.575
2004-2005	15,13,87,180	5,13,28,221	2.949
2005-2006	18,44,24,234	6,69,99,503	2.753
2006-2007	23,85,02,522	7,57,37,779	3.149
		AVERAGE RATIO	**2.86**

Source: Mill's Financial Report

INTERPRETATION

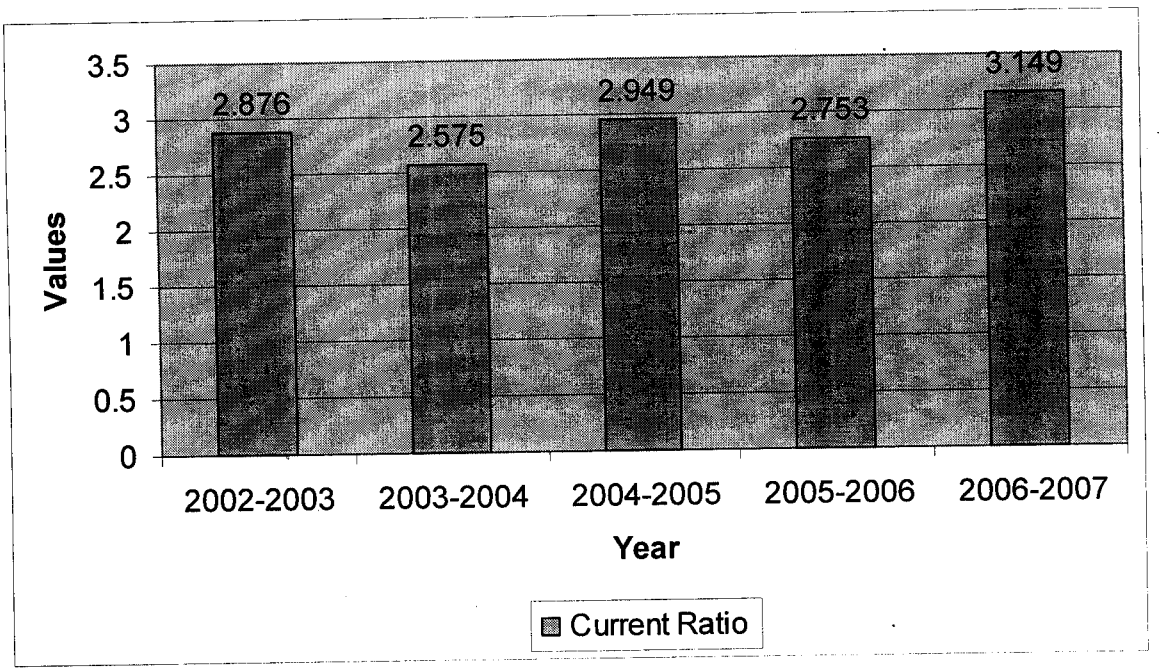
The current ratio was 2.876 in 2002-03, then it decreased to 2.575 in 2003-04, and increased to 2.949 in 2004-05, again it decreased to 2.753 in 2005-06 and it increased to 3.149 in 2006-07.

INFERENCE

The maximum of current ratio stood at 3.149 in the year 2006-07. When Compare to the fixed norms the average current ratio of the concern is 2.86which is above the norms of 2.0. The current ratio indicates that the company has better liquidity position.

CHART NO 4.1

CURRENT RATIO



2. QUICK RATIO

Quick ratio is also known as liquid ratio or acid test ratio or near money ratio. It is the ratio between quick or liquid assets and quick liabilities. An acid test ratio of 1:1 is considered satisfactory as a firm can easily meet all current claims.

FORMULA

$$\text{Quick Ratio} = \frac{\text{Current Assets-(Stock \& Prepaid expenses)}}{\text{Current Liabilities-(Bank Overdraft)}}$$

TABLE 4.2

QUICK RATIO

YEAR	LIQUID ASSETS (in Rs)	LIQUID LIABILITIES (in Rs)	RATIO (in times)
2002-2003	6,84,80,281	4,10,31,511	1.669
2003-2004	8,68,49,991	5,80,70,808	1.496
2004-2005	9,40,18,163	5,13,28,221	1.832
2005-2006	9,52,11,832	6,69,99,503	1.421
2006-2007	15,93,45,049	7,57,37,779	2.104
		AVERAGE RATIO	**1.70**

Source: Mill's Financial Report

INTERPRETATION

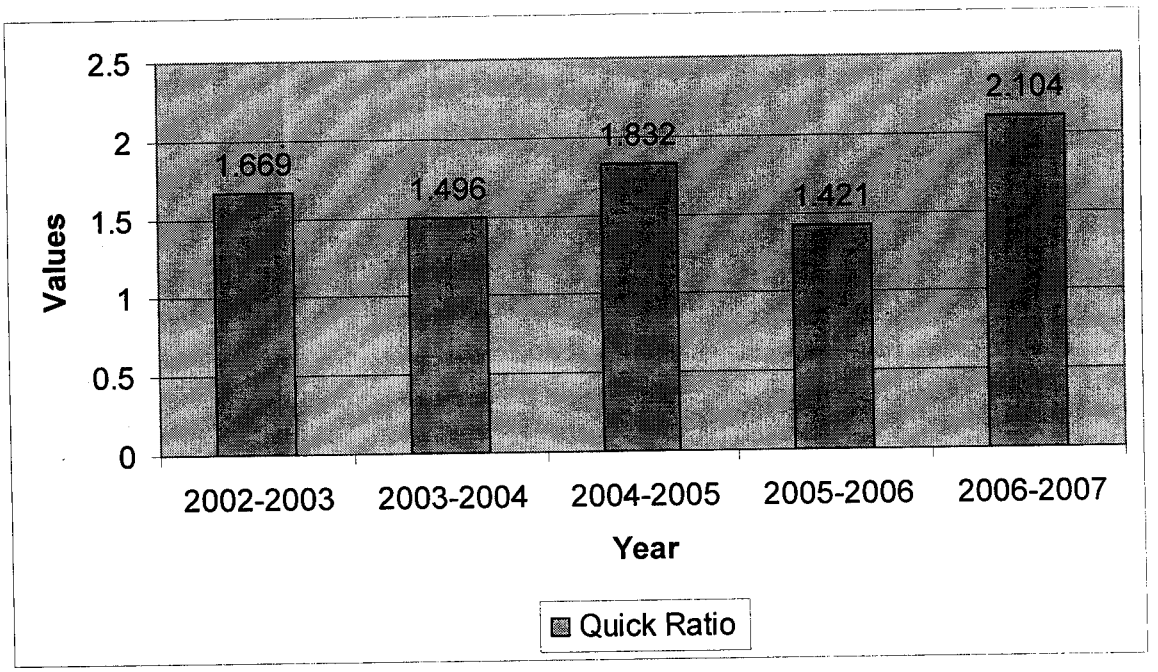
The quick ratio was 1.669 in 2002-03, then it decreased to 1.496 in 2003-04, and increased to 1.832 in 2004-05, again it decreased to 1.421 in 2005-06 and it increased to 2.104 in 2006-07.

INFERENCE

The maximum of quick ratio stood at 2.104 in the year 2006-07. When compare to the fixed norms the average quick ratio of the concern is 1.70 which is above the norms of 1. The quick ratio indicates that the company has better liquidity position.

CHART 4.2

QUICK RATIO



3. ABSOLUTE LIQUID RATIO

Absolute liquid ratio is also called as liquidity ratio. It includes cash-in-hand and at bank and marketable securities or temporary investments

FORMULA

$$\text{Absolute Liquid Ratio} = \frac{\text{Absolute Liquid Assets}}{\text{Current Liabilities}}$$

TABLE 4.3

ABSOLUTE LIQUID RATIO

YEAR	ABSOLUTE LIQUID ASSETS (in Rs)	CUR. LIABILITIES (in Rs)	RATIO (in times)
2002-2003	2,11,56,639	4,10,31,511	0.516
2003-2004	2,94,58,431	5,80,70,808	0.508
2004-2005	3,91,66,993	5,13,28,221	0.763
2005-2006	2,45,13,249	6,69,99,503	0.366
2006-2007	4,75,17,160	7,57,37,779	0.628
		AVERAGE RATIO	**0.55**

Source: Mill's Financial Report

INTERPRETATION

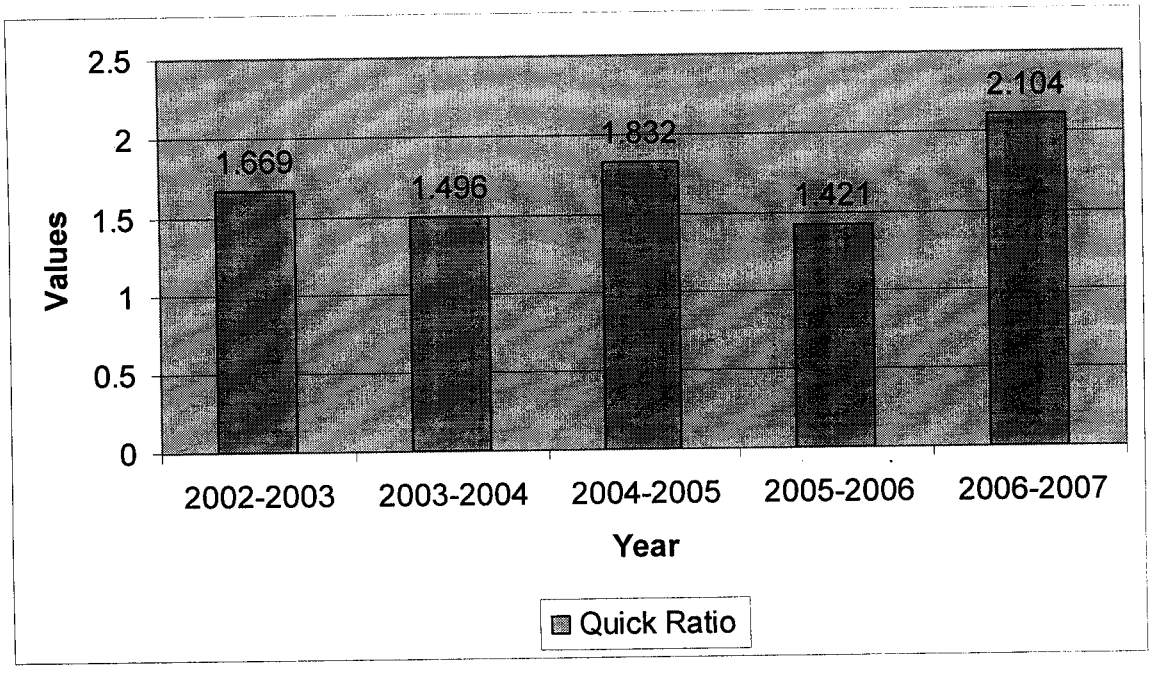
The absolute liquid ratio was 0.516 in 2002-03, then it decreased to 0.508 in 2003-04, and increased to 0.763 in 2004-05, again it decreased to 0.366 in 2005-06 and it increased to 0.628 in 2006-07.

INFERENCE

The maximum of absolute liquid ratio stood at 0.763 in the year 2004-05. The average absolute liquid ratio of the concern is 0.55whereas the norms is only0.5.The short term liquidity position of the organization is satisfactory.

CHART 4.3

ABSOLUTE LIQUID RATIO



II. LONG TERM SOLVENCY OR LEVERAGE RATIOS

1. DEBT-EQUITY RATIO

Debt-equity Ratio, also known as External-Internal Ratio is calculated to measure the relative claims of outsiders and the owners (share holders) against the firm's assets. This ratio indicates relationship between the external equities or the outsiders funds and the internal equities or the share holders' funds.

FORMULA

$$\text{Debt-Equity Ratio} = \frac{\text{Outsiders' funds}}{\text{Share holders funds}}$$

TABLE 4.4

DEBT-EQUITY RATIO

YEAR	OUTSIDERS FUND (in Rs)	SHARE HOLDERS FUND (in Rs)	RATIO (in times)
2002-2003	14,49,06,707	15,02,50,269	0.96
2003-2004	15,41,61,277	17,51,87,505	0.88
2004-2005	12,52,16,436	21,07,00,348	0.594
2005-2006	11,48,12,186	26,49,19,224	0.433
2006-2007	10,43,96,591	32,67,25,733	0.32
		AVERAGE RATIO	**0.63**

Source: Mill's Financial Report

INTERPRETATION

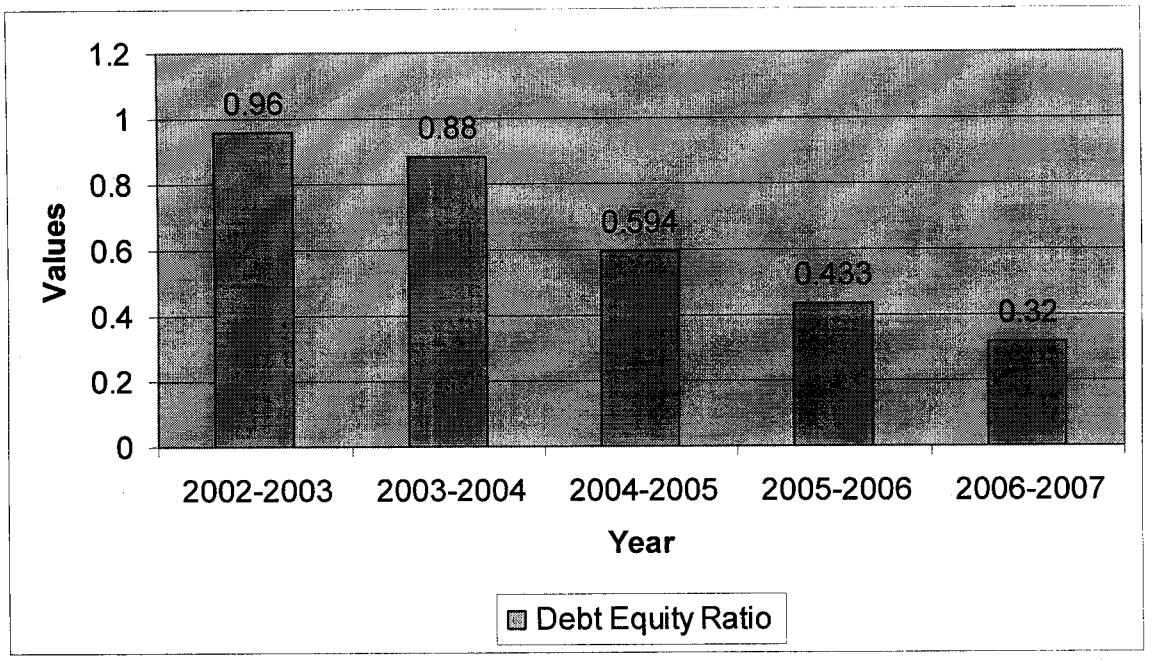
The debt equity ratio was 0.96 in 2002-03. It decreased to 0.88 in 2003-04, and to 0.594 in 2004-05, again decreased to 0.433 in 2005-06 and to 0.32 in 2006-07.

INFERENCE

The average of debt equity ratio is 0.63. The study shows a declining debt equity ratio. It reveals that the outsiders fund was more or less equal to the shareholders fund in the beginning of the study period. The shareholders fund increases and the outsiders fund decreases gradually throughout the study period. The declining debt equity ratio will results in less payment of interest which will lead to increase in profit to the mills.

CHART 4.4

DEBT-EQUITY RATIO



2. PROPRIETORY RATIO

Proprietary ratio relates the shareholders funds to total assets. It is a variant of the debt equity ratio. This ratio shows the long term or future solvency of the business.

Preference share capital and equity share capital plus all reserves and surplus items are called shareholders fund. Total assets include all assets including goodwill. The acceptable norms of the ratio are 1:3.

FORMULA

$$\text{Proprietary Ratio} = \frac{\text{Share holders' funds}}{\text{Total assets}}$$

TABLE 4.5

PROPRIETORY RATIO

YEAR	SHARE HOLDERS FUND (in Rs)	TOTAL ASSETS (in Rs)	RATIO (in times)
2002-2003	15,02,50,269	33,28,36,487	0.451
2003-2004	17,51,87,505	38,40,67,590	0.456
2004-2005	21,07,00,348	38,38,93,005	0.55
2005-2006	26,49,19,224	44,28,70,703	0.598
2006-2007	32,67,25,733	50,29,99,893	0.65
		AVERAGE RATIO	**0.54**

Source: Mill's Financial Report

INTERPRETATION

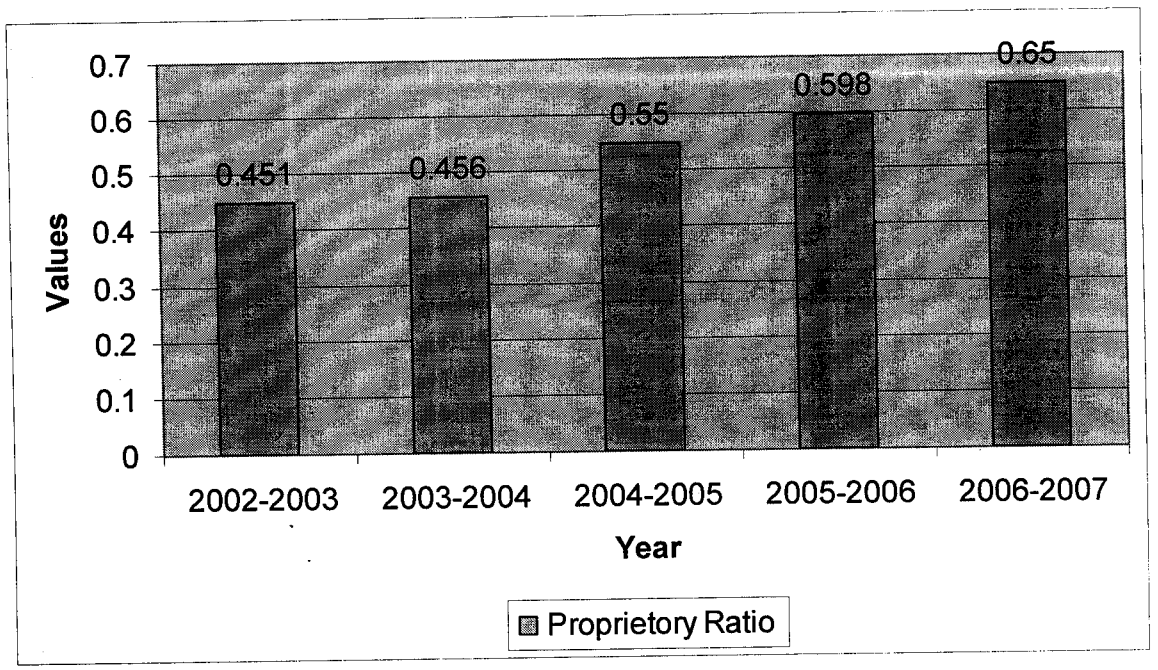
The proprietary ratio was 0.451 in 2002-03. It increased to 0.456 in 2003-04, and to 0.55 in 2004-05, again increased to 0.598 in 2005-06 and to 0.65 in 2006-07.

INFERENCE

The proprietary ratio indicates a continuous increasing trend during the study period from the year 2002-03 to 2006-07. The average of proprietary ratio is found to be 0.54. Increasing proprietary ratio implies that the firm has acquired larger amount of funds from various financial institution & invested in acquisition of both fixed assets and current assets.

CHART 4.5

PROPRIETORY RATIO



3. SOLVENCY RATIO

It is also known as Debt Ratio. It is a difference of 100 and propreitory ratio. This ratio is found out between total assets and external liabilities of the company, external liabilities means all long period and short period liabilities.

FORMULA

$$\text{Solvency Ratio} = \frac{\text{Total liabilities (external)}}{\text{Total assets}}$$

TABLE 4.6

SOLVENCY RATIO

YEAR	TOTAL LIABILTIES (External) (in Rs)	TOTAL ASSETS (in Rs)	RATIO (in times)
2002-2003	4,10,31,511	33,28,36,487	0.123
2003-2004	5,80,70,808	38,40,67,590	0.151
2004-2005	5,13,28,221	38,38,93,005	0.134
2005-2006	6,69,99,503	44,28,70,703	0.151
2006-2007	7,57,37,779	50,29,99,893	0.151
		AVERAGE RATIO	**0.14**

Source: Mill's Financial Report

INTERPRETATION

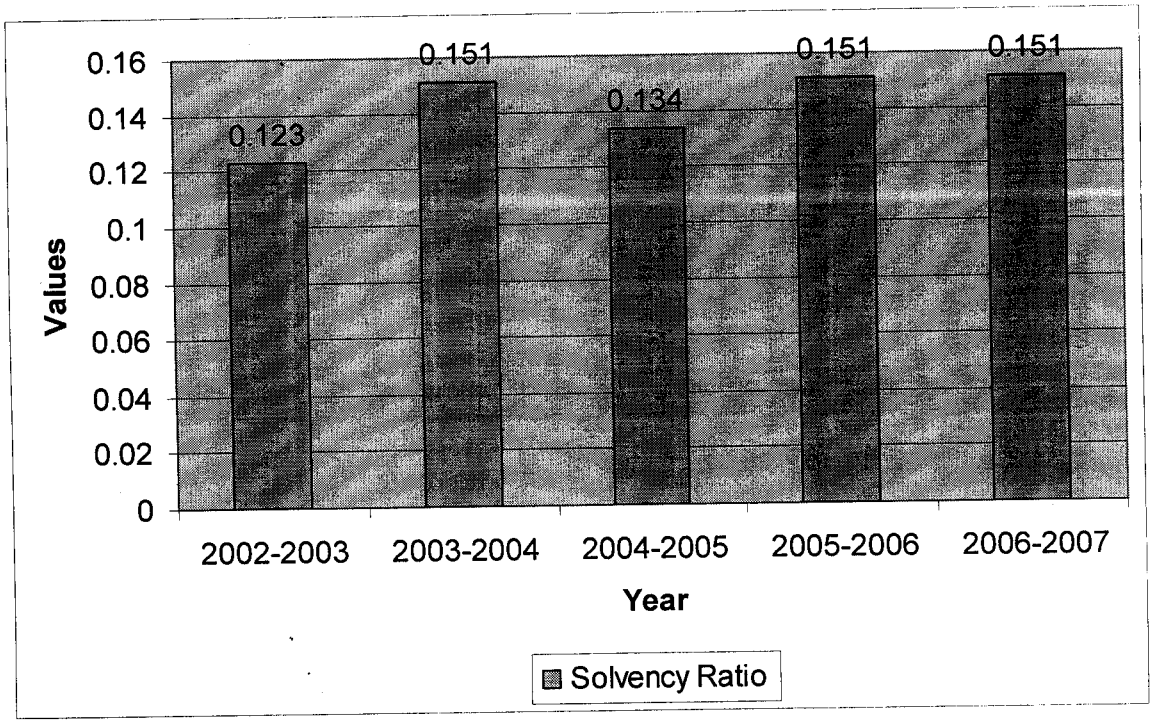
The solvency ratio was 0.123 in 2002-03, then it increased to 0.151 in 2003-04, and decreased to 0.134 in 2004-05, again it increased to 0.151 in 2005-06 and remains as 0.151 in 2006-07.

INFERENCE

The maximum of solvency ratio stood at 0.151 in the years 2003-04, 2005-06 & 2006-07. The average solvency ratio of the concern is 0.14.The table shows that the solvency ratio of the concern remains in stable position. The solvency ratio of the mill is less than one through out the study period.

CHART 4.6

SOLVENCY RATIO



4. FIXED ASSETS TO NET WORTH

This ratio establishes the relationship between fixed assets and shareholders funds. This ratio indicates the extent to which shareholders funds are sunk into the fixed assets. Generally the purchases of fixed assets are financed by shareholders equity including reserves & surplus and retained earnings. If the ratio is less than one, this indicates that the owners' funds are more than total fixed assets and a part of the working capital is provided by the share holders. The ratio of 60 to 65 percent is considered to be satisfactory.

FORMULA

$$\text{Fixed assets to net worth Ratio} = \frac{\text{Fixed assets}}{\text{Shareholders' fund}} \times 100$$

TABLE 4.7

FIXED ASSETS TO NETWORTH RATIO

YEAR	FIXED ASSETS (in Rs)	SHARE HOLDERS FUND (in Rs)	RATIO (in %)
2002-2003	21,48,36,097	15,02,50,269	1.421
2003-2004	23,45,13,293	17,51,87,505	1.339
2004-2005	23,25,05,825	21,07,00,348	1.103
2005-2006	25,84,46,469	26,49,19,224	0.976
2006-2007	26,44,97,371	32,67,25,733	0.81
		AVERAGE RATIO	**1.12**

Source: Mill's Financial Report

INTERPRETATION

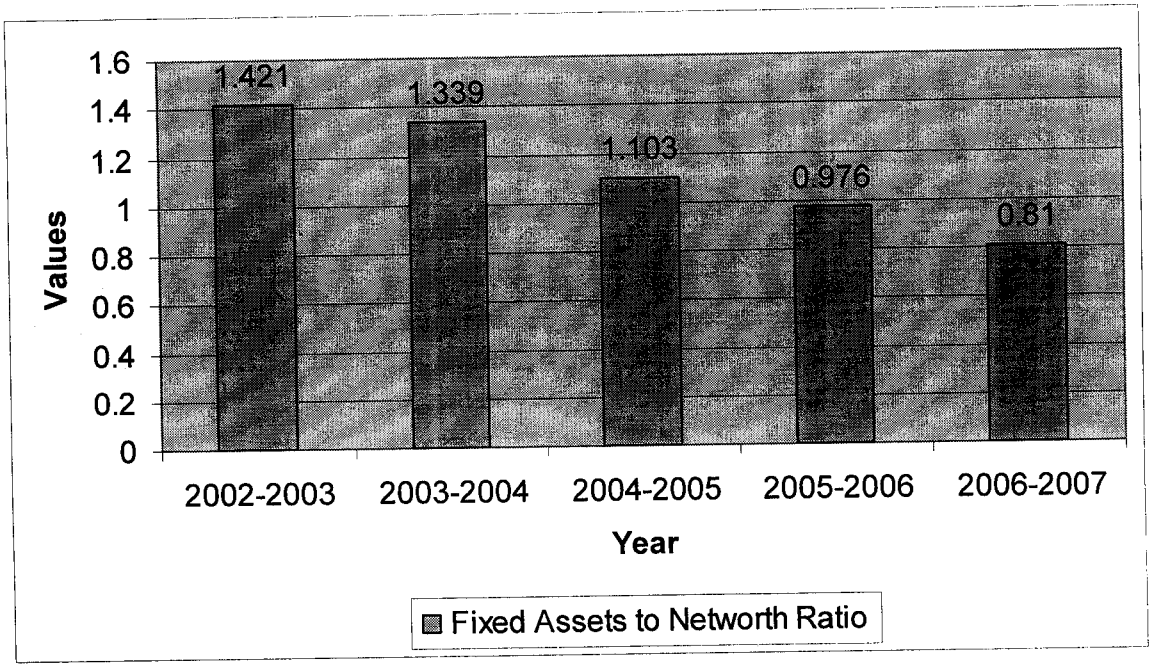
The fixed assets to net worth ratio was 1.421 in 2002-03. It decreased to 1.339 in 2003-04, and to 1.103 in 2004-05, again decreased to 0.976 in 2005-06 and to 0.81 in 2006-07.

INFERENCE

The ratio shows a decreasing trend throughout the study period. The ratio shows an average of 1.12. The maximum of fixed assets to net worth ratio is found to be1.421 in the year 2002-03.From the table it can be known that the shareholders fund is not sufficient to finance the fixed assets of the company for the first three years of the study period. For the last two year the shareholders fund is sufficient to finance the fixed assets of the company.

CHART 4.7

FIXED ASSETS TO NETWORTH RATIO



5. CURRENT ASSETS TO PROPRIETOR'S FUND RATIO

This ratio shows the relationship between current assets and shareholders' fun. The purpose of this ratio is to calculate the percentage of share holders' funds invested in current assets. According to the nature of the business, there may be different ratios for different firms. There is no rule of thumb for this ratio.

FORMULA

$$\text{Ratio of current assets to shareholders' funds} = \frac{\text{Current assets}}{\text{Proprietors' funds}} \times 100$$

TABLE 4.8

CURRENT ASSETS TO PROPRIETOR'S FUND RATIO

YEAR	CURRENT ASSETS (in Rs)	PROPRIETORS FUND (in Rs)	RATIO (in %)
2002-2003	11,80,00,390	15,02,50,269	0.785
2003-2004	14,95,54,297	17,51,87,505	0.854
2004-2005	15,13,87,180	21,07,00,348	0.718
2005-2006	18,44,24,234	26,49,19,224	0.696
2006-2007	23,85,02,522	32,67,25,733	0.73
		AVERAGE RATIO	**0.75**

Source: Mill's Financial Report

INTERPRETATION

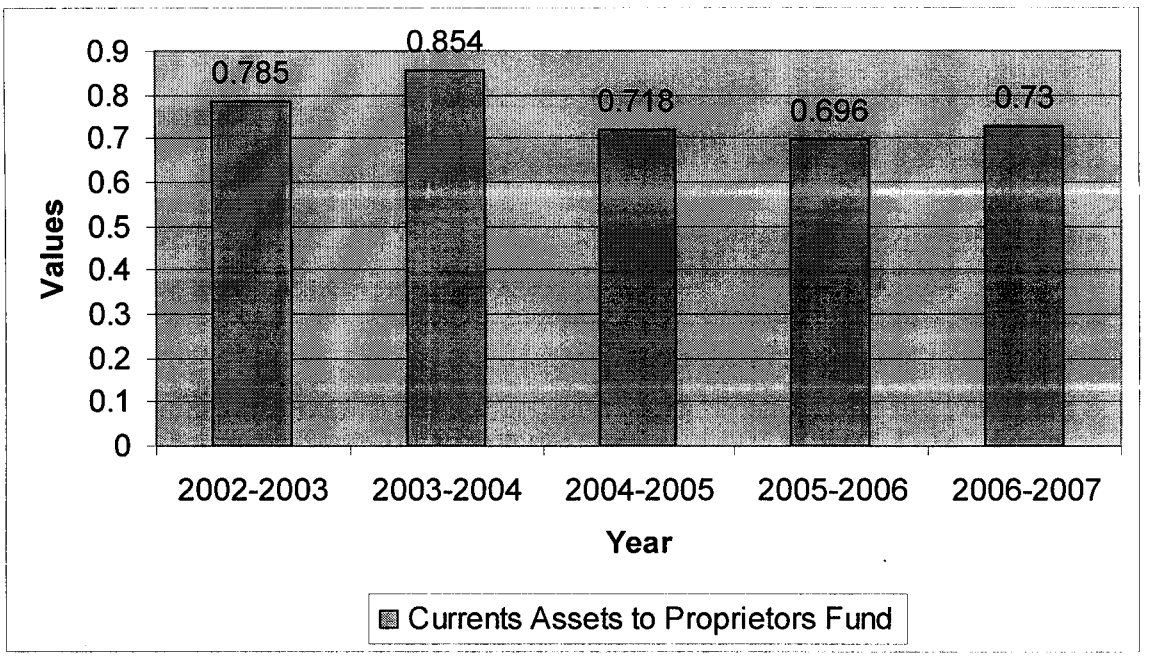
The current assets to proprietor's fund ratio was 0.785 in 2002-03, then it increased to 0.854 in 2003-04, and decreased to 0.718 in 2004-05, again it decreased to 0.696 in 2005-06 and it increased to 0.73 in 2006-07.

INFERENCE

The current asset to proprietor fund ratio shows a fluctuating trend throughout the study period. The average of current assets to proprietary fund ratio is found to be 0.75. The above table reveals that the share holders fund was sufficient to finance current assets of the company in the study.

CHART 4.8

CURRENT ASSETS TO PROPRIETOR'S FUND RATIO



6. FIXED ASSET TURNOVER RATIO

The fixed asset turnover ratio indicates the extent of the utilization of fixed assets to total sales of the company. An increasing ratio indicates the increasing utilization of the fixed factors.

FORMULA

$$\text{Fixed asset turnover ratio} = \frac{\text{Net sales}}{\text{Fixed assets}}$$

TABLE 4.9

FIXED ASSET TURNOVER RATIO

YEAR	NET SALES (in Rs)	FIXED ASETS (in Rs)	RATIO (in times)
2002-2003	57,43,57,970	21,48,36,097	2.673
2003-2004	65,10,58,342	23,45,13,293	2.776
2004-2005	72,20,16,839	23,25,05,825	3.105
2005-2006	78,83,26,415	25,84,46,469	3.05
2006-2007	96,66,94,501	26,44,97,371	3.655
		AVERAGE RATIO	**3.05**

Source: Mill's Financial Report

INTERPRETATION

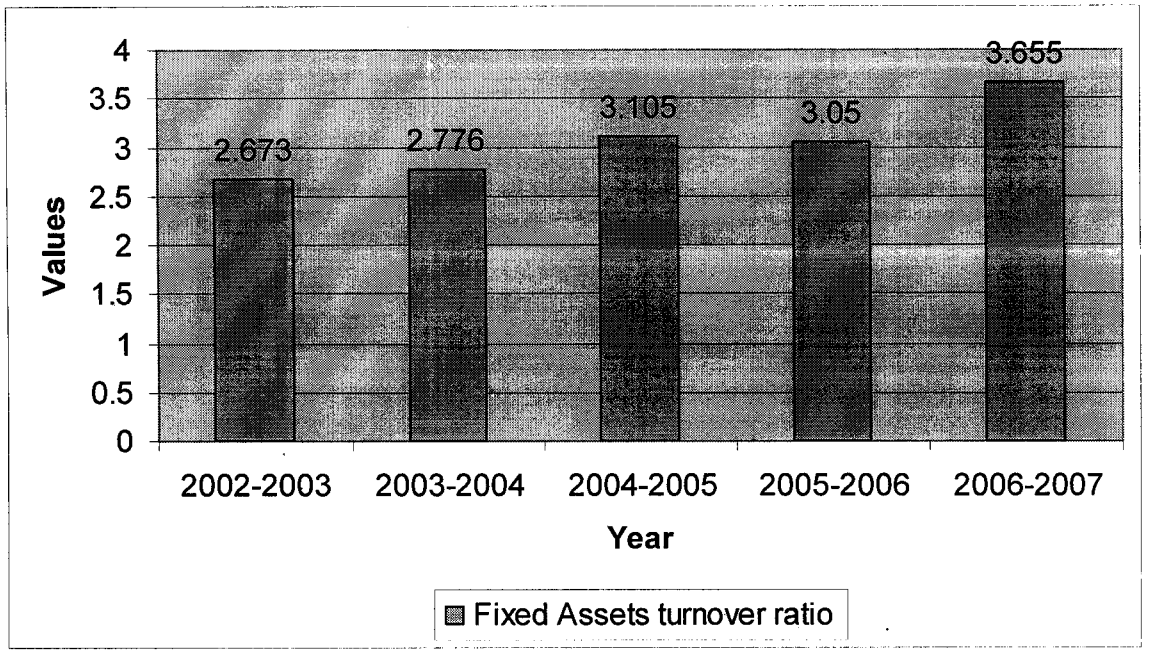
The fixed assets turnover ratio was 2.673 in 2002-03. It increased to 2.776 in 2003-04, and to 3.105 in 2004-05, and then decreased to 3.05 in 2005-06 and increased to 3.655 in 2006-07.

INFERENCE

The ratio shows a fluctuating trend throughout the study period. The maximum of fixed assets turnover ratio is found to be 3.655 in the year 2006-07. The ratio shows an average of 3.05. Throughout the study period, the net sales of the company increase gradually which results in the increase of the ratio. The higher average ratio shows higher utilization of fixed assets.

CHART 4.9

FIXED ASSET TURNOVER RATIO



III ACTIVITY RATIO

1. INVENTORY TURNOVER RATIO

This is also known as stock velocity. This ratio is calculated to consider the adequacy of the quantum of capital and its justification for investing in inventory. It is the ratio of cost of sales and average inventory. This ratio reveals the number of times finished stock is turned over during a given accounting period. This is used for measuring the profitability.

FORMULA

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of goods sold}}{\text{Average Inventory at cost}}$$

TABLE 4.10

INVENTORY TURNOVER RATIO

YEAR	COST OF GOODS SOLD (in Rs)	AVERAGE INVENTORY (in Rs)	RATIO (in times)
2002-2003	53,40,80,773	4,95,20,109	10.78
2003-2004	60,76,41,938	6,27,04,306	9.69
2004-2005	63,42,27,290	5,73,69,017	11.06
2005-2006	69,92,55,715	7,92,12,402	8.83
2006-2007	84,49,68,894	7,91,57,473	10.67
		AVERAGE RATIO	**10.21**

Source: Mill's Financial Report

INTERPRETATION

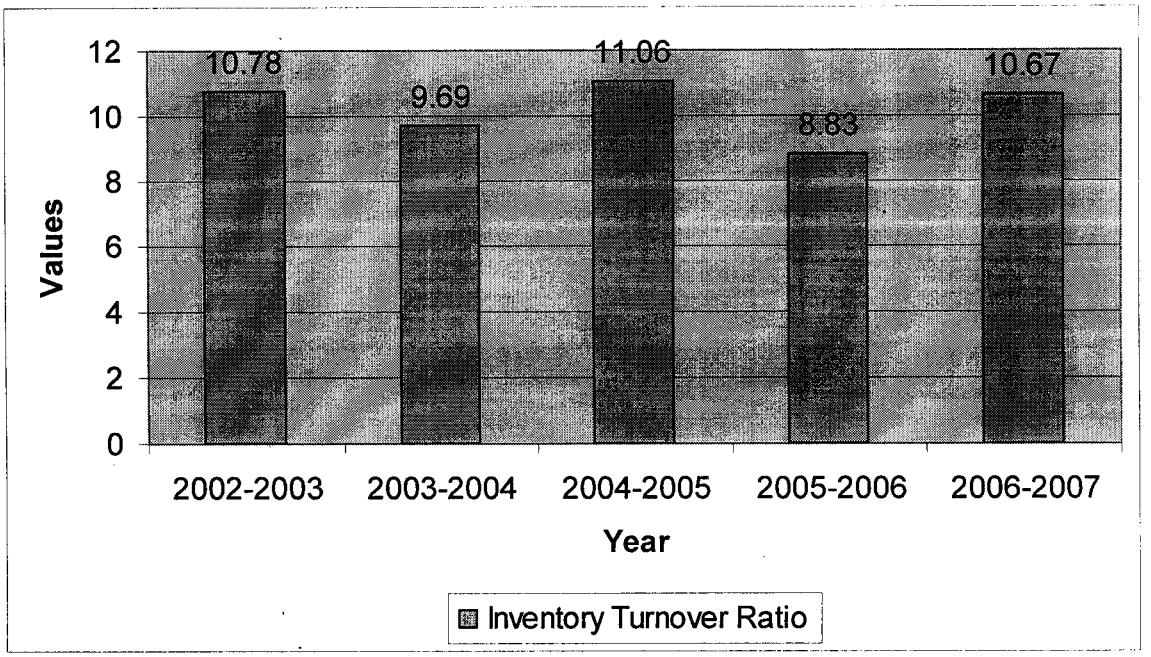
The inventory turnover ratio was 10.78 in 2002-03, then it decreased to 9.69 in 2003-04, and increased to 11.06 in 2004-05, again it decreased to 8.83 in 2005-06 and it increased to 10.67 in 2006-07.

INFERENCE

The inventory turnover ratio shows a fluctuating trend throughout the study period. The maximum of inventory turnover ratio is found to be 11.06 in the year 2004-05. The ratio shows an average of 10.21. The mills have an inventory around 10% of the cost of good sold of every year in the study period.

CHART 4.10

INVENTORY TURNOVER RATIO



2. WORKING CAPITAL TURNOVER RATIO

This ratio is to measure the efficiency of the employment of the working capital. It indicates over trading and under trading and is harmful for the smooth conduct of business. This ratio finds out the relation between cost of sales and working capital. It helps in determining the liquidity of a firm in as much as it gives the rate at which inventories are converted to sales and then to cash.

FORMULA

$$\text{Working Capital Turnover Ratio} = \frac{\text{Cost of sales}}{\text{Net Working Capital}}$$

TABLE 4.11

WORKING CAPITAL TURNOVER RATIO

YEAR	COST OF SALES (in Rs)	WORKING CAPITAL (in Rs)	RATIO (in times)
2002-2003	55,00,01,989	7,69,68,879	7.15
2003-2004	63,39,77,944	9,14,83,489	6.93
2004-2005	67,41,26,013	10,00,58,959	6.74
2005-2006	73,75,74,064	11,74,24,731	6.28
2006-2007	88,74,49,476	16,27,64,743	5.45
		AVERAGE RATIO	**6.51**

Source: Mill's Financial Report

INTERPRETATION

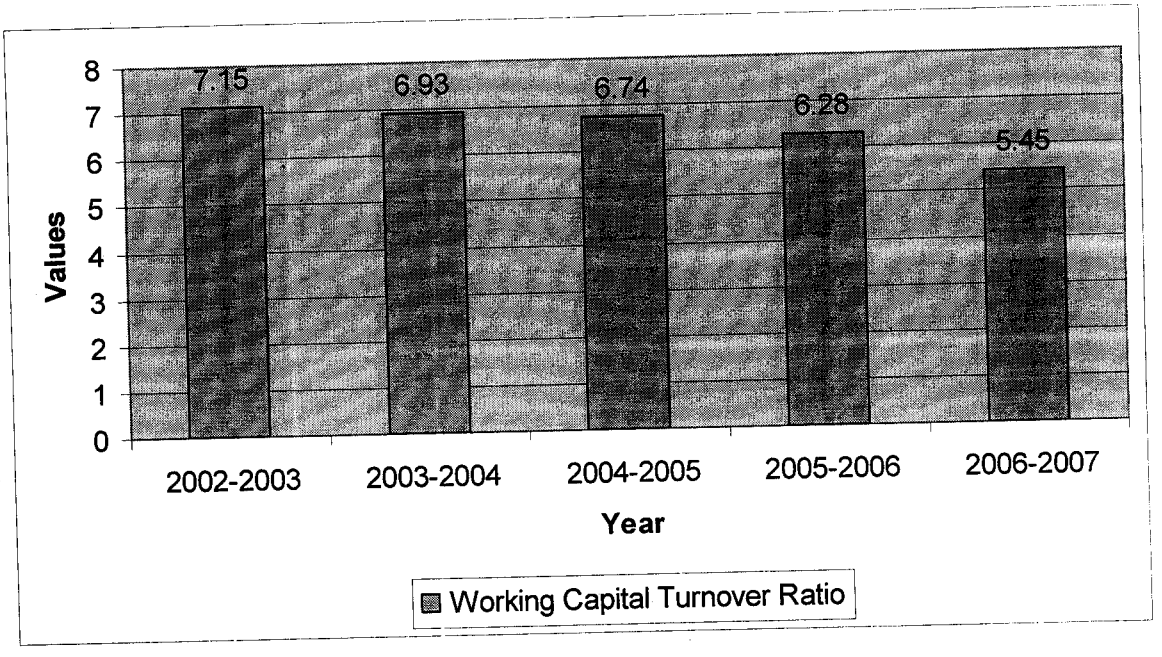
The working capital turnover ratio was 7.15 in 2002-03. It decreased to 6.93 in 2003-04, and to 6.74 in 2004-05, again decreased to 6.28 in 2005-06 and to 5.45 in 2006-07.

INFERENCE

The maximum ratio of working capital turnover is 7.15 in the beginning of the study period. The average of working capital turnover ratio is found to be 6.51. The working capital was increased continuously throughout the study period but it was not with respect to the increase in the cost of sales.

CHART 4.11

WORKING CAPITAL TURNOVER RATIO



4. PROFITABILITY RATIOS

1. NET PROFIT RATIO

This ratio establishes a relationship between net profit and sales. This ratio is the overall measure of firm's profitability. Higher the ratio of net operating profit to sales, better is the operational efficiency of thee concern.

FORMULA

$$\text{Net Profit Ratio} = \frac{\text{Net profit}}{\text{Net sales}} \times 100$$

TABLE 4.12

NET PROFIT RATIO

YEAR	NET PROFIT (in Rs)	NET SALES (in Rs)	RATIO (in %)
2002-2003	2,21,94,055	57,43,57,970	0.039
2003-2004	2,27,11,835	65,10,58,342	0.035
2004-2005	4,28,78,987	72,20,16,839	0.059
2005-2006	5,93,51,175	78,83,26,415	0.075
2006-2007	7,43,22,933	96,66,94,501	0.077
		AVERAGE RATIO	**0.05**

Source: Mill's Financial Report

INTERPRETATION

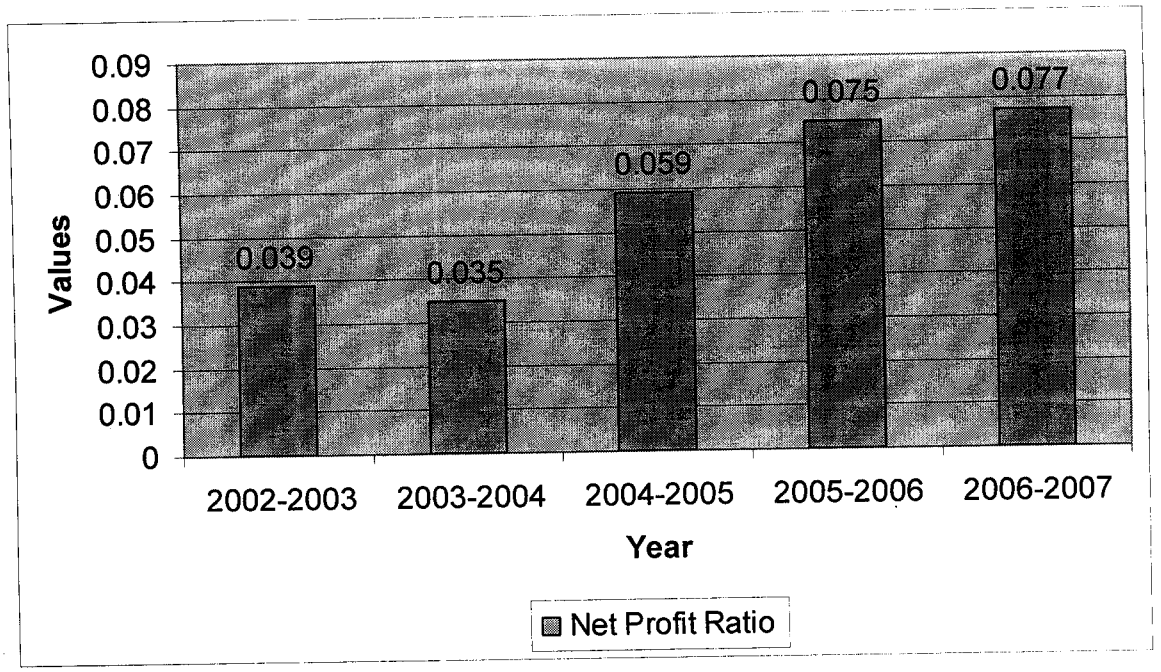
The net profit ratio was 0.039 in 2002-03, then it decreased to 0.035 in 2003-04, and increased to 0.059 in 2004-05, again increased to 0.075 in 2005-06 and it increased to 0.077 in 2006-07.

INFERENCE

The maximum net profit ratio is found to be 0.077 in the year 2006-07. The ratio shows an average of 0.05. The table shows that there was an increasing trend in net profit. There was a net profit throughout the study period.

CHART 4.12

NET PROFIT RATIO



2. RETURN ON SHAREHOLDERS INVESTMENT

Return on shareholders investment popularly known as ROI or return on shareholder/proprietors funds is the relationship between net profits (after interest & tax) and the proprietor's funds

FORMULA

$$\text{Return on Investment} = \frac{\text{Net Profit after tax}}{\text{Shareholders Fund}} \times 100$$

TABLE 4.13

RETURN ON SHAREHOLDERS INVESTMENT

YEAR	PROFIT AFTER TAX (in Rs)	SHAREHOLDERS FUND (in Rs)	RATIO (in %)
2002-2003	1,66,86,002	15,02,50,269	0.111
2003-2004	2,01,48,164	17,51,87,505	0.115
2004-2005	3,49,28,526	21,07,00,348	0.166
2005-2006	5,17,98,907	26,49,19,224	0.196
2006-2007	6,58,92,508	32,67,25,733	0.202
		AVERAGE RATIO	**0.158**

Source: Mill's Financial Report

INTERPRETATION

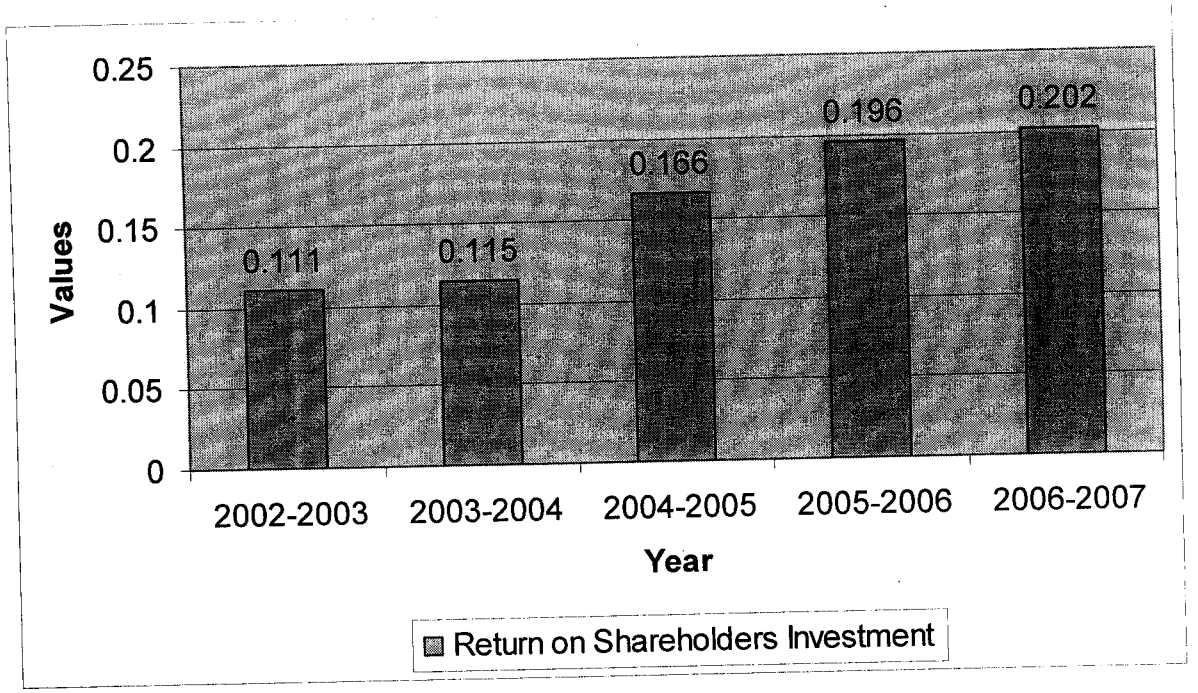
The return on shareholders investment was 0.111 in 2002-03. It increased to 0.115 in 2003-04, and to 0.166 in 2004-05, again increased to 0.196 in 2005-06 and to 0.202 in 2006-07.

INFERENCE

The return on shareholders investment ranges between 0.111 and 0.202. The average of return on shareholders fund is 0.158. The shareholders got maximum return in the year 2006-07. The return on shareholders investment shows increasing trend throughout the study period. The shareholders are getting satisfied return from the mills.

CHART 4.13

RETURN ON SHAREHOLDERS INVESTMENT



V. EXPENSES RATIO

1. MANUFACTURING EXPENSES RATIO

The manufacturing expenses ratio shows that what percentage share of sales is consumed by cost of manufacturing the goods and conversely what proportion is available for meeting some other expenses.

FORMULA

$$\text{Manufacturing expenses ratio} = \frac{\text{Manufacturing expenses}}{\text{Net sales}} \times 100$$

TABLE 4.14

MANUFACTURING EXPENSES RATIO

YEAR	MANUFACTURING EXPENSES (in Rs)	NET SALES (in Rs)	RATIO (in %)
2002-2003	45,89,92,679	57,43,57,970	0.8
2003-2004	50,99,86,658	65,10,58,342	0.78
2004-2005	53,58,53,530	72,20,16,839	0.74
2005-2006	60,06,41,380	78,83,26,415	0.76
2006-2007	73,25,34,117	96,66,94,501	0.76
		AVERAGE RATIO	**0.77**

Source: Mill's Financial Report

INTERPRETATION

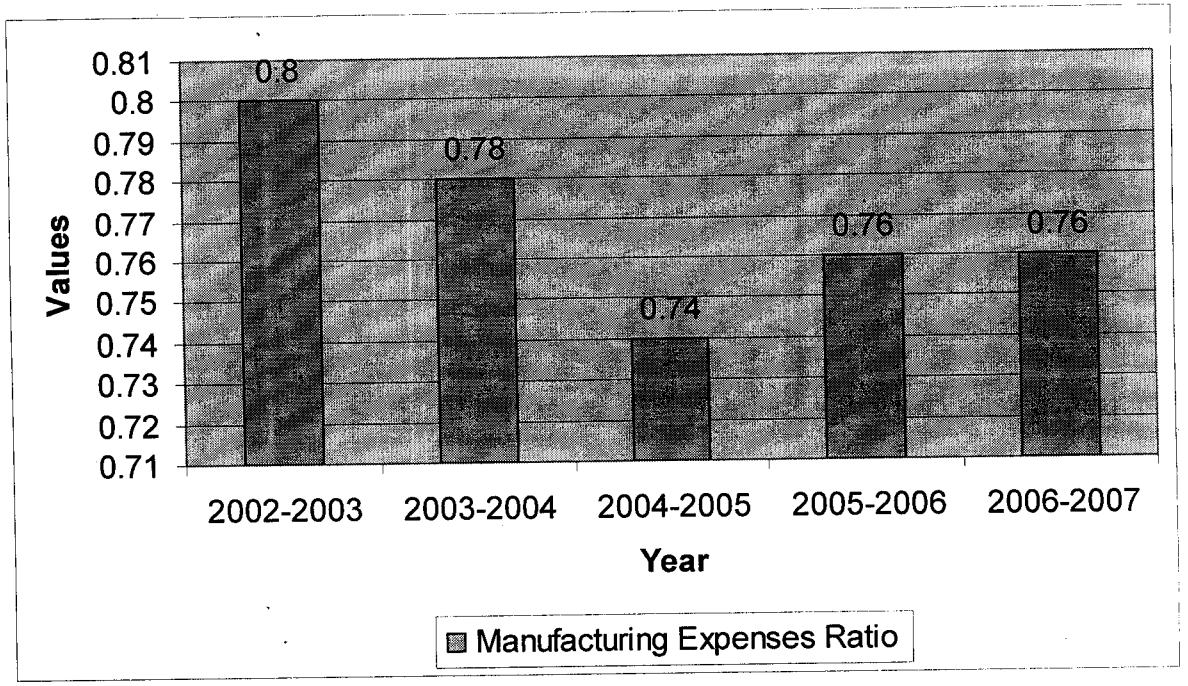
The manufacturing expenses ratio was 0.8 in 2002-03, then it decreased to 0.78 in 2003-04, and increased to 0.74 in 2004-05, again increased to 0.76 in 2005-06 and it remain as 0.76 in 2006-07.

INFERENCE

The ratio ranges between 0.74 and 0.8. The maximum ratio of manufacturing expenses is 0.8 in the beginning of the study period. The average of manufacturing expenses ratio is found to be 0.77. The table reveals that the manufacturing expenses have minor fluctuation. But the expense gradually increases through out the study period with respect to the sales.

CHART 4.14

MANUFACTURING EXPENSES RATIO



2. OFFICE AND ADMINISTRATION EXPENSES RATIO

The office and administration expenses ratio shows that what percentage share of sales is consumed by expenses incurred in administrative department and conversely what proportion is available for meeting some other expenses.

FORMULA

$$\text{Office \& administration expenses ratio} = \frac{\text{Office \& Admn expenses}}{\text{Net sales}} \times 100$$

TABLE 4.15

OFFICE AND ADMINISTRATION EXPENSES RATIO

YEAR	OFFICE & ADMN EXPENSES (in Rs)	NET SALES (in Rs)	RATIO (in %)
2002-2003	6,14,53,288	57,43,57,970	0.11
2003-2004	8,12,50,851	65,10,58,342	0.12
2004-2005	7,89,60,751	72,20,16,839	0.11
2005-2006	7,74,61,138	78,83,26,415	0.1
2006-2007	9,23,45,225	96,66,94,501	0.1
		AVERAGE RATIO	**0.11**

Source: Mill's Financial Report

INTERPRETATION

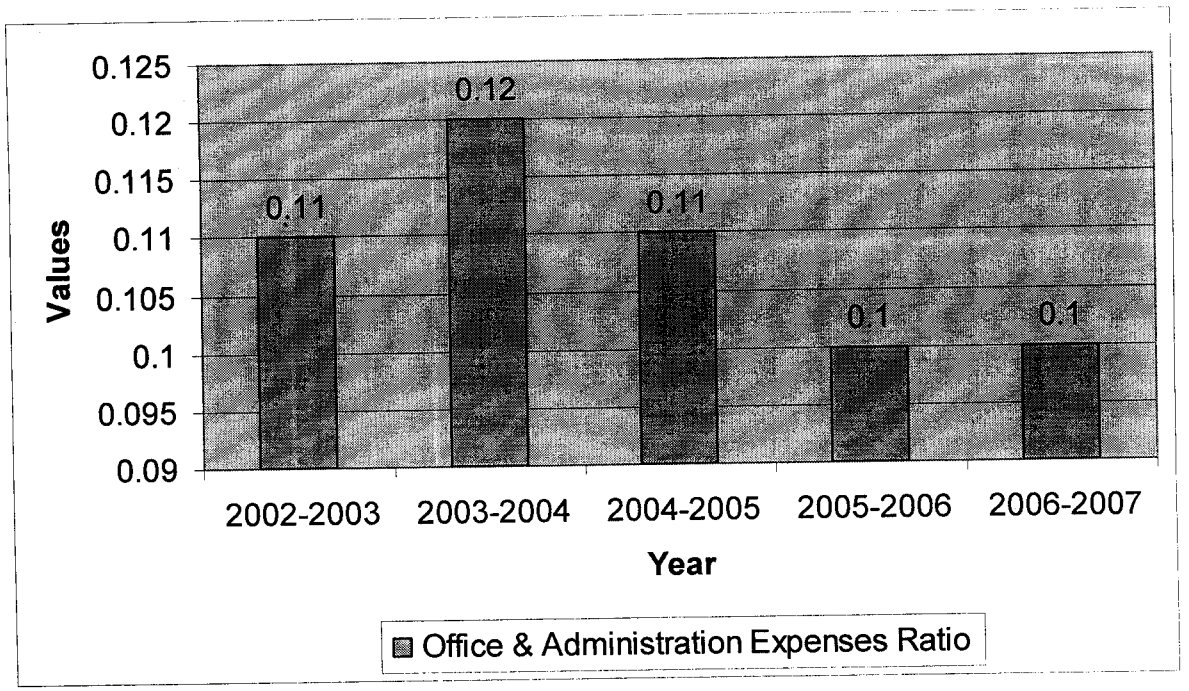
The office & administration expenses ratio was 0.11 in 2002-03, then it increased to 0.12 in 2003-04, and decreased to 0.11 in 2004-05, again decreased to 0.1 in 2005-06 and it remain as 0.1 in 2006-07.

INFERENCE

The average of office and administration expenses ratio is found to be 0.11. The maximum of office & administration expenses ratio stood as 0.12 in the years 2003-04. The office and administration expenses ratio shows a stable trend throughout the study period. The expenses comes an average of 10% of sales on the entire study period.

CHART 4.15

OFFICE AND ADMINISTRATION EXPENSES RATIO



3. SELLING AND DISTRIBUTION EXPENSES RATIO

Selling & distribution expenses ratio explains what percentage of amount incurred to meet the expenses made for the selling and distribution of sugar out of net sales of the sugar in the financial year.

FORMULA

$$\text{Selling \& distribution expenses ratio} = \frac{\text{Selling \& distribution expenses}}{\text{Net sales}} \times 100$$

TABLE 4.16

SELLING AND DISTRIBUTION EXPENSES RATIO

YEAR	SELLING & DISTRIBUTION EXPENSES (in Rs)	NET SALES (in Rs)	RATIO (in %)
2002-2003	1,59,21,216	57,43,57,970	0.028
2003-2004	2,63,36,006	65,10,58,342	0.04
2004-2005	3,98,98,723	72,20,16,839	0.055
2005-2006	3,83,18,349	78,83,26,415	0.049
2006-2007	4,24,80,582	96,66,94,501	0.044
		AVERAGE RATIO	**0.043**

Source: Mill's Financial Report

INTERPRETATION

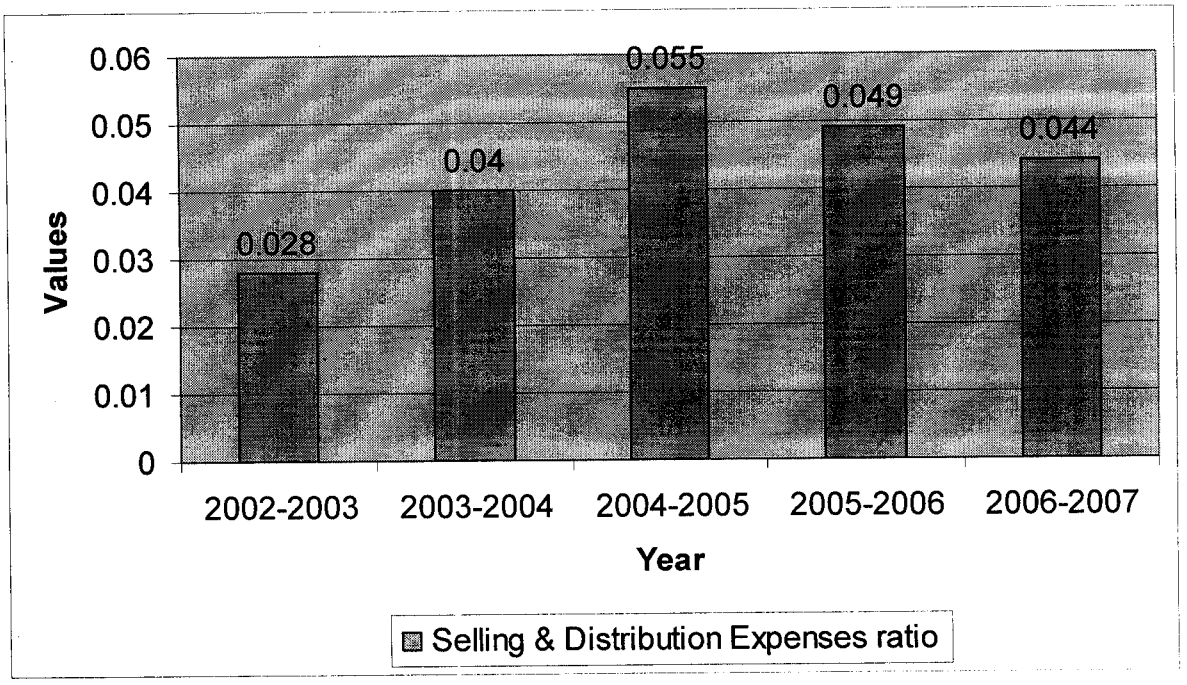
The selling and distribution expenses ratio was 0.028 in 2002-03, then it increased to 0.04 in 2003-04, and to 0.055 in 2004-05, and then it decreased to 0.049 in 2005-06 and to 0.044 in 2006-07.

INFERENCE

The selling and distribution expenses ratio ranges between 0.028 and 0.55. The average of Selling & distribution expense ratio is 0.043. The shareholders got maximum return in the year 2006-07. The Selling & distribution expense ratio is gradually increases up to the third year of the study period and declined gradually. The mills increase the selling and distribution expenses with respect to increase in sales.

CHART 4.16

SELLING AND DISTRIBUTION EXPENSES RATIO



TREND ANALYSIS

TREND FORECASTING FOR SALES

TABLE 4.17

YEAR	SALES	DEVIATION FROM 2004		X^2	TREND VALUE
		X	XY		
02-03	57,43,57,970	-2	-1,14,87,15,940	4	55,61,02,586.4
03-04	65,10,58,342	-1	-65,10,58,342	1	64,82,96,699.9
04-05	72,20,16,839	0	0	0	74,04,90,813.4
05-06	78,83,26,415	1	78,83,26,415	1	83,26,84,926.9
06-07	96,66,94,501	2	1,93,33,89,002	4	92,48,79,040.4
N=5	**$\sum Y$ = 3,70,24,54,067**	**$\sum X$=0**	**$\sum XY$= 92,19,41,135**	**$\sum X^2$ = 10**	

The equation of a straight line Trend is Yc = a + bx

a = 74, 04, 90,813.4 b = 9, 21, 94,113.5

Trend Calculation

Y = 74, 04, 90,813.4 + 9, 21, 94,113.5 (-2) = Rs 55,61,02,586.4

Y = 74, 04, 90,813.4 + 9, 21, 94,113.5 (-1) = Rs 64,82,96,699.9

Y = 74, 04, 90,813.4 + 9, 21, 94,113.5 (0) = Rs 74,04,90,813.4

Y = 74, 04, 90,813.4 + 9, 21, 94,113.5 (1) = Rs 83,26,84,926.9

Y = 74, 04, 90,813.4 + 9, 21, 94,113.5 (2) = Rs 92,48,79,040.4

Estimation of Net sales for 2007-2008

Y = 74, 04, 90,813.4 + 9, 21, 94,113.5 (3) = **Rs 1,01,70,73,153.9**

The estimated sales for the year 2007-2008 is **Rs 1,01,70,73,153.90**

TREND FORECASTING FOR PROFIT

TABLE 4.18

YEAR	PROFIT	DEVIATION FROM 2004		X^2	TREND VALUE
		X	XY		
02-03	2,21,94,055	-2	-4,43,88,110	4	1,61,12,377.8
03-04	2,27,11,835	-1	-2,27,11,835	1	3,02,02,087.4
04-05	4,28,78,987	0	0	0	4,42,91,797
05-06	5,93,51,175	1	5,93,51,175	1	5,83,81,506.6
06-07	7,43,22,933	2	14,86,45,966	4	7,24,71,216.2
N=5	**$\sum Y$ = 22,14,58,985**	**$\sum X$=0**	**$\sum XY$= 14,08,97,096**	**$\sum X^2$ = 10**	

The equation of a straight line Trend is Yc = a + bx

a = 4,42,91,797 b = 1,40,89,709.6

Trend Calculation

Y = 4,42,91,797 + 1,40,89,709.6 (-2) = Rs 1,61,12,377.8
Y = 4,42,91,797 + 1,40,89,709.6 (-1) = Rs 3,02,02,087.4
Y = 4,42,91,797 + 1,40,89,709.6 (0) = Rs 4,42,91,797
Y = 4,42,91,797 + 1,40,89,709.6 (1) = Rs 5,83,81,506.6
Y = 4,42,91,797 + 1,40,89,709.6 (2) = Rs 7,24,71,216.2

Estimation of Profit for 2007-2008

Y = 4,42,91,797 + 1,40,89,709.6 (3) = **Rs 9,65,60,925.8**

The estimated profit for the year 2007-2008 is **Rs 9,65,60,925.80**

CHAPTER V

FINDINGS, SUGGESTIONS & CONCLUSION

CHAPTER V

SUMMARY OF FINDINGS AND SUGGESTIONS

FINDINGS

- From the liquidity ratios of the company it is clear that the company is having the ability meet current obligation as and when these become due.
- The current ratio ranges from 2.575 to 3.149.When compare to the fixed norms the current ratio position of the concern is up to the level of satisfaction.
- The liquid ratio of GVG Paper Mills Private Ltd., is meeting the rule of thumb. Average of quick ratio found to be 1.70. The quick ratio position of the concern is up to the level of satisfaction.
- It reveals that the outsiders fund was more or less equal to the shareholders fund in the beginning of the study period. The shareholders fund increases and the outsiders fund decreases gradually throughout the study period. The debt-equity ratio shows an average of 0.63.
- The solvency ratio of the concern remains in stable position. The average solvency ratio of the concern is 0.14The solvency ratio of the mill is less than one through out the study period.
- The shareholders fund is not sufficient to finance the fixed assets of the company for the first three years of the study period. For the last two year the shareholders fund is sufficient to finance the fixed assets of the company. The fixed asset to net worth ratio shows an average of 1.12.
- The current asset to proprietary ratio reveals that the firm has the ability to meet the day to day financial requirements. Average of current asset to proprietary ratio is found to be 0.75.
- Throughout the study period, the net sales of the company increase gradually which results in the increase of the fixed assets turnover ratio. The higher average ratio shows higher utilization of fixed assets.

- The inventory turnover ratio shows a fluctuating trend throughout the study period. The mills have an inventory around 10% of the cost of good sold of every year in the study period.
- The ratio of working capital turnover is 7.15 in the beginning of the study period. The working capital was increased continuously throughout the study period but it was not with respect to the increase in the cost of sales.
- The profitability ratio shows that the net profit of the mills was increasing throughout the study period. The average of net profit is found to be 0.05 for the last 5 years.
- The return on shareholders investment shows increasing trend throughout the study period. The shareholders are getting satisfied return from the mills. In the beginning of the study period the shareholder get around 11% of their investment as returns. It increases to 20% in the end of the study period.
- The mills manufacturing expense ratio have minor fluctuation. But the expense gradually increases throughout the study period with respect to the sales.
- The office and administration expenses ratio shows a fluctuating trend throughout the study period. The expense shows an average of 11% of sales on the entire study period.

SUGGESTIONS

- Liquidity ratios shows increasing trend. A very high degree of liquidity is also bad; idle assets earn nothing. The firm's funds will be unnecessarily tied up in current assets. Therefore it is necessary to strike a proper balance between high liquidity and lack of liquidity.
- The mill's inventory holding is abnormally high in recent years and steps to be taken to dilute the piling up of inventory
- Maintaining high machine productivity will help the firm to earn more profits. Net profits will help in the repayment of term loans. It will bring down the interest burden and higher volume of sales also leads to achievement of reduction in interest cost.
- Due to technological advancement and changes in environment, there is stiff competition among the firms implementation of changes should be effectively done to counter competition.
- The paper realization can improve by controlling the waste generation in different departments of the mills.
- The company should reduce its current and long term liabilities to the maximum extent and can settle their dues through installment basis.
- The company shall increase their investments in future to reduce the amount of risk as a result of investing in a particular business.

CONCLUSION

The financial statements are the sources of information on the basis of which conclusions are drawn about the profitability of the financial position of a firm. They are he major means employed by the firms to present their financial situation of owners, creditors and the general public. The primary objective of financial statement is to assist in decision making.

The basic financial statements i.e. balance sheet, profit & loss account or income statement of a business reveals the net assets of the various transactions on the operational and financial position of the mill. Therefore the financial statements are prepared with a view to depict financial position of the concern. A proper analysis and interpretation of these statements enables a person to judge the profitability and financial strength of the business.

A descriptive study was conducted with the financial records of 5 years, so as to ascertain the financial position of the company. The results indicate that the mill met all the required fixed norms of liquidity ratios and hence the liquidity position of the company is found to be satisfactory.

The company has a stable solvency position. When compared to the fixed industrial norms, the mills have better solvency position.

The profitability of the company shows an increasing trend throughout the study period. The increasing trend in profit and sales are expected to continue in the year 2007-08.

To conclude, the overall financial position of GVG Paper Mills Private Ltd., is satisfactory. However, the recommendations may be implemented for further strengthening of financial position.

BIBLIOGRAPHY

BIBLIOGRAPHY

Financial management - I.M.Pandey By Vikas publications

Management accounting - S.N.Maheswari By Kalyani publishers

Management accounting - R.K.Sharma By Kalyani publishers

Management accounting - Prof.T.S.Reddy and Prof Y.Hari Prasad reddy

Management accounting - M.Y.Khan and P.K.Jain By Tata McGraw-Hill publications

Annual reports of GVG Paper Mills Ltd.

WEBSITES

www.economywatch.com

www.wikiepedia.com

www.findarticles.com

www.sugarindustry.com