



Saurashtra University

Re – Accredited Grade 'B' by NAAC
(CGPA 2.93)

Solanki, Ashvinkumar H., 2009, *Working Capital Management in Selected Small Scale Industries of Gujarat State*, thesis PhD, Saurashtra University

<http://etheses.saurashtrauniversity.edu/id/eprint/66>

Copyright and moral rights for this thesis are retained by the author

A copy can be downloaded for personal non-commercial research or study, without prior permission or charge.

This thesis cannot be reproduced or quoted extensively from without first obtaining permission in writing from the Author.

The content must not be changed in any way or sold commercially in any format or medium without the formal permission of the Author

When referring to this work, full bibliographic details including the author, title, awarding institution and date of the thesis must be given.

Saurashtra University Theses Service
<http://etheses.saurashtrauniversity.edu>
repository@sauuni.ernet.in

**“WORKING CAPITAL MANAGEMENT IN SELECTED
SMALL SCALE INDUSTRIES OF GUJARAT STATE”**

SUBMITTED BY:

SOLANKI ASHVINKUMAR H.

LECTURER

R.K. COLLEGE OF BUSINESS MANAGEMENT

(M.B.A. PROGRAMME), RAJKOT

FOR:

THE AWARD OF

DOCTOR OF PHILOSOPHY IN FINANCE ACCOUNTS

UNDER THE FACULTY OF COMMERCE

A THESIS SUBMITTED TO:

SAURASHTRA UNIVERSITY, RAJKOT

UNDER THE GUIDENCE OF:

DR. GIRISH C. BHIMANI

READER IN STATISTICS

SAURASHTRA UNIVERSITY, RAJKOT-360005

MARCH 2009

STATEMENT – I

I here by certify that the thesis entitled **“WORKING CAPITAL MANAGEMENT IN SELECTED SMALL SCALE INDUSTRIES OF GUJARAT STATE”** Submitted by **Mr. ASHVINKUMAR H. SOLANKI** for the award of the Degree of Doctor of Philosophy in the faculty of Commerce, is based on the research work carried out by him and original and is carried out under my guidance and supervision. To the best of my knowledge, it has not been submitted for any other degree, diploma or distinction by either Saurashtra University or any other University.

Place: Rajkot

Date:

DR. GIRISH C. BHIMANI

Reader in statistics

Saurashtra University

Rajkot-360005

STATEMENT – II

I hereby declare that the thesis entitled **“WORKING CAPITAL MANAGEMENT IN SELECTED SMALL SCALE INDUSTRIES OF GUJARAT STATE”** Submitted by me for the Degree of Doctor of Philosophy under the faculty of Commerce, is my original work and that it has not been submitted for any other degree, diploma or distinction by either Saurashtra University or any other University.

(Solanki Ashvinkumar H.)

STATEMENT – III

The title of my thesis is: **“WORKING CAPITAL MANAGEMENT IN SELECTED SMALL SCALE INDUSTRIES OF GUJARAT STATE”**

The study is based on primary and secondary data about small scale industries in Gujarat .The main source of data are unstructured personnel interviews, website, the CMIE i.e. “Center for Monitoring India Economy”(PROWESS). Published annual reports and accounts of selected companies under study. Supplementary data and other information have been collected from Economic Times, Financial Express, other periodicals, journals and from articles by various authors.

(Solanki Ashvinkumar H.)

ACKNOWLEDGEMENTS

A successful completion of a research work, especially of the Ph.D calls for intellectual nourishment, valuable guidance and professional help, selfless cooperation, encouragement, support and blessings from god.

I am greatly indebted to my guide, Dr. Girish C. Bhimani, Reader in statistics, Saurashtra University, Rajkot, who encouraged, supported and guided me throughout my research work. In spite of heavy pre-occupations provided his valuable time during this study period and guided me with his constructive comments, constant advices and valuable suggestions at each stage of the study and helped me to complete this research work successfully.

I am grateful to Dr. P.L.Chauhan, Professor, Head and Dean, Department of Business management, Saurashtra University, Rajkot for providing me an assistance, support and guidance.

I am thankful to Dr. Daksha C. Gohil, Professor and Head, Department of Commerce, Saurashtra University, Rajkot for guiding me through various stages of my research.

For the blessing and best wishes from Dr. S.K.Bhatt, Professor, P.G. Department of Business Studies, Sardar Patel University, Vallabh-Vidhyanagar and Dr. Manisha S. Bhatt, Professor, C.Z.Patel College, Vallabh-Vidhyanagar for giving valuable inputs in my research work.

For the blessing and best wishes from H'ble shri Khodidasbhai Patel, Chairman, shri Ranchodbhai Patel, H'ble vice chairman and trustees of R.K.Group of Colleges.

I also express thanks to Dr. Ilesh Dave, Dr. S.A. Chintaman, Dr. K.B. Rao, Mr. Dharmesh Mistry and Mr. Ramesh A. Dangar for encouragement and support.

I express my gratitude to my friend for extending their support for my research work. As specially from Dr. Vijay h. Vyas for his continuous support.

I will be failing in my duty if I do not acknowledge my deep indebtedness to my parents Hamirbhai solanki and mother Rajiben solanki for their encouragement, support and blessings without which this study would not have been possible.

I acknowledge wholehearted support from my brothers, Mr. Deepakbhai and Mr. Narendrabhai.

I acknowledge the patience and assistance of my loving wife Dharmishtha and son Jayraj during my study time when this research work occupied my attention and free time.

This list is almost incomplete and I am grateful to all those who have helped me directly and indirectly in my research work.

Place: Rajkot

Date: -

ASHVINKUMAR H. SOLANKI

PREFACE

For most of the last century, firms in certain industries, especially public utility industries such as energy, transportation, and communications, have been public owned or regulated to alleviate public fears that such firms would use market power to raise prices artificially. Many of these industries exhibited scale economies, which meant that a single firm would have the lowest cost of production and could monopolize the industry. Hence, these industries were treated as natural monopolies and regulated to control entry, prices, and profits.

The term working capital refers to short term funds required for financing the duration of the operating cycle in a business often known as “Accounting year”. These funds are used for carrying out the routine or regular business operations consisting of purchase of raw materials, payment of direct and indirect expenses, carrying out of production, investment in stocks and stores and amount to be maintained in the form of cash. It represents funds with which business is carried on. It can also be regarded as that proportion of the company’s total capital, which is employed in short term operations. It is not necessary that the amount is always available in the form of cash. It can take the form of near cash assets or even assets a little further from cash, but yet in the process of moving towards the cash form in a short period.

The study of working capital management occupies an important place in financial management. It has never received so much attention as in recent years. Working capital management is an integral part of overall financial management. The sphere of working capital throws a welcome challenge and opportunity to a financial manager. “Working capital management has been looked upon as the driving seat of financial manager.”

The management of working capital is synonymous with the management of short term financial liquidity. The importance of short term liquidity can best be gauged by examining the repercussions which stem from a lack of ability to meet short term obligations.

After testing every industries liquidity, working capital efficiency level and financial leverage position, their performance has been compared through ratio analysis. There around 19 ratios have compared of every units. There charts have been also presented. Further, a hypothesis have tested for the ratio that whether there is significant difference in the ratio trend for the period of study for the units under taken for the study. If the hypothesis is accepted there would no significant difference in the ratio of units and if it is rejected, there would be significant difference in the units for the period of study. Thus there is comparison analysis and hypothesis testing of around 19 ratios.

Thereafter, there are correlation matrixes of each unit, whereas 19 ratios have been correlates with each other and thus a table of correlation matrix has been calculated. The table depicts the relationship among the various ratio of profitability, asset management and liquidity.

Place: - Rajkot

Date: -

ASHVINKUMAR H. SOLANKI

INDEX

CHAPTER NO.	PARTICULARS	PAGE NO.
1	Introduction	01
2	Nature and growth of small scale industries in Gujarat	42
3	Review of literature	75
4	Research methodology	83
5	Working capital management practices and working finance in small scale industries	100
6	Management of cash	161
7	Management of accounts receivables	203
8	Inventory management practices	240
9	Comparative performance analysis of selected small scale industries of Gujarat state	284
10	Summary, findings and suggestions	301
	Bibliography	318

LIST OF TABLES

SR. NO.	TITLE	PAGE NO.
2.1	Cumulative progress of permanent SSI registration	45
2.2	Registration of SSI units in Gujarat	46
2.3	Registration of SSI units in Gujarat – Recent trend	48
2.4	Group wise SSI registration	51
2.5	Group wise SSI registration – Recent trend	52
2.6	Micro and small industries	60
2.7	Medium industries	63
2.8	IEMs – Gujarat and other states	69
2.9	LOIs – Gujarat and other states	70
2.10	EOUs – Gujarat and other states	71
2.11	Growth of SSI exports	73
5.1	Accepted components of working capital	103
5.1.1	Anova analysis - Accepted components of working capital	105
5.2	Working capital personnel	106
5.3	Determination of working capital – Bases	107
5.3.1	Anova analysis – determination of working capital	109
5.4	Determination of size of working capital requirements	110

5.4.1	Anova analysis - Determination of size of working capital	111
5.5	Turnover of current assets	112
5.5.1	Anova analysis – turnover of current assets	114
5.6	Rate of return on current assets	115
5.6.1	Anova analysis – rate of return on current assets	117
5.7	Percentage of inventory to working capital	118
5.7.1	Anova analysis – percentage of inventory to working capital	120
5.8	Percentage of receivables to working capital	121
5.8.1	Anova analysis - Percentage of receivables to working capital	123
5.9	Percentage of cash to working capital	124
5.9.1	Anova analysis - Percentage of cash to working capital	126
5.10	Period of review of working capital	128
5.11	Method of assessment of working capital	129
5.11.1	Anova analysis - Method of assessment of working capital	131
5.12	Control methods for working capital	132
5.12.1	Anova analysis - Control methods for working capital	133
5.13	Area of shortage of working capital	134
5.14	Ways of meeting shortage of working capital	135

5.15	Size of working finance	136
5.15.1	Anova analysis - Size of working finance	138
5.16	Working finance in terms of months' cost of production	139
5.16.1	Anova analysis - Working finance in terms of months' cost of production	141
5.17	Working finance in terms of months' average sales turnover	142
5.17.1	Anova analysis - Working finance in terms of months' average sales turnover	144
5.18	Terms of purchase and sales	145
5.18.1	Anova analysis - Terms of purchase and sales	146
5.19	Gross profit on capital employed	147
5.19.1	Anova analysis - Gross profit on capital employed	149
5.20	Net profit to net worth	150
5.20.1	Anova analysis - Net profit to net worth	151
5.21	Sources of working funds	152
5.22	Trade credit	154
5.23	Terms of credit purchases	155
5.24	Credit period allowed by the suppliers	156
5.25	Extra discount allowed on prompt payment by the suppliers	157

5.26	Rate of discount allowed	157
5.27	Penal interest charged by the suppliers	158
5.28	Rate of penal interest	158
6.1	Prime reasons for keeping cash	175
6.2	Period of cash planning	177
6.3	Basis of determination of cash balance	178
6.4	Methods adopted to overcome cash shortage	179
6.5	Liquidity position	180
6.6	Method used for judging liquidity funds	181
6.7	Current ratio	184
6.7.1	Anova analysis – current ratio	186
6.8	Quick ratio	187
6.8.1	Anova analysis – quick ratio	189
6.9	Net cash flow to current liabilities	190
6.9.1	Anova analysis – net cash flow to current liabilities	192
6.10	Cash to current assets	194
6.10.1	Anova analysis – cash to current assets	195
6.11	Cash turnover in sales	197
6.11.1	Anova analysis – cash turnover in sales	198
6.12	Liquid funds to current liabilities	199

6.12.1	Anova analysis – liquid funds to current liabilities	201
7.1	Types of sales done	209
7.2	Form of credit sales	210
7.3	Share of credit sales to total sales	211
7.4	Reasons for credit sales	212
7.5	Credit period extended by the units	213
7.6	Credit policy followed by the firm	214
7.7	Terns of credit	217
7.8	Types of credit policy for customer	218
7.9	System of policy for customer	218
7.10	Changes in the credit policies	219
7.11	Evaluation of credit risk	223
7.12	Allowance for cash discount	224
7.13	Legal action against the defaulters	225
7.14	Penal interest charges	225
7.15	Realization of overdue accounts	226
7.16	Size of receivables	228
7.16.1	Anova analysis – size of receivables	230
7.17	Total receivables to credit sales	231
7.17.1	Anova analysis – total receivables to credit sales	232

7.18	Average collection period	233
7.18.1	Anova analysis – average collection period	235
7.19	Ratio of bad debts to receivables	236
7.19.1	Anova analysis – ratio of bad debts to receivables	237
8.1	Extent of raw material to aggregate inventory	261
8.1.1	Anova analysis – extent of raw material to aggregate inventory	263
8.2	Extent of semi-finished goods to aggregate inventory	264
8.2.1	Anova analysis – extent of semi-finished to aggregate inventory	266
8.3	Extent of finished to aggregate inventory	268
8.3.1	Anova analysis – extent of finished to aggregate inventory	269
8.4	Determination of maximum level of inventory	271
8.5	Basis for maximum level of inventory	272
8.6	Basis for minimum level of inventory	273
8.7	Period of inventory review report	274
8.8	Ordering system of inventory purchase	276
8.9	Inventory control system	277
8.10	Lead time taken in the purchase of material	278
8.11	Authority who exercise control over inventory	279

8.12	Size of inventory	280
8.12.1	Anova analysis – size of inventory	281
9.1	Correlation matrix of engineering industries	288
9.2	Correlation matrix of plastic industries	290
9.3	Correlation matrix of chemical industries	292
9.4	Correlation matrix of textile industries	294
9.5	Correlation matrix of furniture industries	296
9.6	Correlation matrix of miscellaneous industries	298

LIST OF FIGURES

SR. NO.	TITLE	PAGE NO.
1.1	Three alternative working capital investment policies	19
1.2	Types of working capital	26
1.3	Operating cycle of a typical company	27
1.4	Resource flows for a manufacturing firm	27
1.5	Difference between permanent & temporary working capital	28
1.6	Changes in working capital	29
1.7	Financing needs over time	29
1.8	Matching approach to asset financing	30
1.9	Conservative approach to asset financing	31
1.10	Aggressive approach to asset financing	32
5.1	Turnover of current asset	113
5.2	Rate of return on current asset	116
5.3	Inventory to working capital	119
5.4	Receivables to working capital	122
5.5	Cash to working capital	125
5.6	Size of working capital finance	137
5.7	Working finance in terms of months' cost of production	140

5.8	Working finance in terms of months' average sales turnover	143
5.9	Gross profit on capital employed	148
5.10	Net profit to net worth	151
6.1	Current ratio	185
6.2	Quick ratio	188
6.3	Net cash flow to current liabilities	191
6.4	Cash to current assets	195
6.5	Cash turnover in sales	198
6.6	Liquid funds to current liabilities	200
7.1	Size of receivables	229
7.2	Total receivables to credit sales	232
7.3	Average collection period	234
7.4	Bad debts to receivables	237
8.1	Classifying item as ABC	251
8.2	Cost line	257
8.3	Extent of raw material to aggregate inventory	262
8.4	Extent of semi-finished goods to aggregate inventory	265
8.5	Extent of finished goods to aggregate inventory	269
8.6	Size of inventory	281

LIST OF ABBRIVATIONS

WC	Working capital
WCM	Working capital management
E	Engineering industry
P	Plastic industry
C	Chemical industry
T	Textile industry
F	Furniture industry
MIS	Miscellaneous industry
ROI	Return on investment
SSI	Small scale industries

CHAPTER – 1

CHAPTER 1

INTRODUCTION

1.1 Introduction

1.2 Concept and Types of working capital

1.3 Working capital objectives

1.4 Importance of working capital management

1.5 Planning & organisations of working capital management

1.6 Working capital management: Risk-Return implications

1.7 Regulation of bank credit for working capital

1.8 Tandon committee recommendations

1.9 Chore committee

1.10 Determining the financing mix

1.11 Sources of working capital

1.12 Excess or inadequate working capital

1.13 Adequacy of working capital

1.14 Financing working capital: A new approach

1.15 Techniques of working capital analysis

1.16 References

1.1 INTRODUCTION

The term working capital refers to short term funds required for financing the duration of the operating cycle in a business often known as “Accounting year”. These funds are used for carrying out the routine or regular business operations consisting of purchase of raw materials, payment of direct and indirect expenses, carrying out of production, investment in stocks and stores and amount to be maintained in the form of cash. It represents funds with which business is carried on. It can also be regarded as that proportion of the company’s total capital, which is employed in short term operations. It is not necessary that the amount is always available in the form of cash. It can take the form of near cash assets or even assets a little further from cash, but yet in the process of moving towards the cash form in a short period.

The study of working capital management occupies an important place in financial management. It has never received so much attention as in recent years. Working capital management is an integral part of overall financial management. The sphere of working capital throws a welcome challenge and opportunity to a financial manager. “Working capital management has been looked upon as the driving seat of financial manager.”

The management of working capital is synonymous with the management of short term financial liquidity. The importance of short term liquidity can best be gauged by examining the repercussions which stem from a lack of ability to meet short term obligations.

A lack of liquidity implies a lack of freedom of choice as well as constraints on management’s freedom of movement. If lack of liquidity continues to be

a problem, it may ultimately lead to insolvency and bankruptcy. Thus, working capital management is linked with the continuous existence of an enterprise. Regardless of excellent products, effective marketing, efficient production, and wise fixed assets management.

Many management has lost the control of its firm because liquidity crisis resulted in takeover by creditors, forced merger or bankruptcy. An excellent long run outlook for a business becomes immaterial if control is lost in the short run. Working capital policies affect marketing, personnel, production and what happens in the business related to working capital decisions. Working capital management as an area is concerned with carrying out working capital functions. In any enterprise, the working capital function must exist in some form or other.

1.2 CONCEPT AND TYPES OF WORKING CAPITAL

An enterprise needs not only fixed capital but also working capital. The working capital is the capital needed to conduct the day to day operations of a business. Working capital is, therefore, a broader term and there are chances of misunderstanding it.

Broadly speaking, it is taken either as the total assets or as the excess of current assets over current liabilities. “Working capital, according to the time honoured definition”, say Professor Hanry G. Guthmann and Herbert E. Dougall, “is the excess of current assets over current liabilities.” Accountants Handbook completely endorses this view, while to Professor C.W. Gerstenberg, “any comprehensive discussion on the working capital includes the excess of current assets over current liabilities.”

Working capital is defined in the Annual Survey of Industries to include “stock of materials, stores, fuels, semi finished goods and by-products, cash in hand and bank and the algebraic sum of sundry creditors as represented by

- (a) Outstanding factor payment e.g. rent, wages, interest and dividend;
- (b) Purchases of goods and services;
- (c) Short term loans and advances and sundry debtors comprising amounts due to factory on account of sales of goods and services and advances towards purchase and tax payment.” This supports the view of Professor Guthmann and Dougall. An overwhelming support to this view has been advanced by some renowned financial analysts. For example, Dr. Colin Park and Professor John W. Gladson say. “Most commonly, working capital is defined as the excess of current assets of a business over current items owned to employees and others.

In fact, there are two concept of working capital, viz., gross and net. Gross working capital refers to the sum of current assets represented by inventories, cash, receivables and marketable securities. Net working capital means ‘working capital as the excess of current assets over current liabilities’. Gross working capital and total current assets are thus synonymous. The need for the net concept of working capital arises due to the fact that the gross concept fails to consider current liabilities.

It is to be noted that both the concepts are of equal importance. The gross concept emphasizes that excessive investment in current assets affects profitability, as idle investment yields nothing. Similarly inadequate investment in current assets makes it difficult to carry out the day to day operations of the business smoothly. The net working capital concept

emphasizes the aspect of liquidity, drawing attention to the equity and long term financing portion of current assets which is supposed to serve as a cushion of safety and security to current liabilities. The gross working capital emphasizes the use and the net concept emphasizes the sources. The integration of both understands working capital management from the point of view of risk, return and uncertainty.

In fact, the choice of a particular concept will depend upon the purpose in view. Thus, of the two concepts, the net concept is more useful, if the purpose is to find out the liquidity position of an enterprise. On the other hand if the interest lies in finding out whether the total current assets of an enterprise are being put to maximum use, the gross concept is preferable. It is suggested by Husband and Dockray, in order to do away with this difficulty of terminology is that the net concept of working capital may be referred to as a 'qualitative' aspect and the total current assets concept as the 'quantitative' aspect.

Even when working capital is taken to mean current assets, there is no agreed list of such assets at international level. In the balance-sheet of the companies in India, inventories (raw materials, work-in-progress, finished goods, spare parts, etc.), sundry debtors, cash and bank balances, and short term advances and investments are included in current assets.

While differentiating current assets from non-current assets or current liabilities from non-current liabilities, generally a period of one year is used as a line of the demarcation which is somewhat arbitrary. It suggests that the investment in any asset or liability with a life of less than a year falls into the

realm of working capital management. Park and Gladson's attack on the problem of working capital management began with their attempt to define what were current assets and current liabilities. They stated that the prevailing one year temporal standard applying for classifying assets or liabilities as 'current' was not universally valid. What was current or non-current depends on the nature of the core business activity. Thus, for a fruit processing business, two to three months would be the correct 'currentness'. Current assets have a short life span. For a lumbering or winemaking business, however a period longer than one year should be the currentness standard. Thus, currentness varies with the nature of business. In addition to all these, the fixed assets of one company may be the current assets of another, e.g. electric company, but part of the fixed assets of a refrigerating and cold storage company. However, the current assets are used to indicate cash, inventories and other assets which are expected to be realised, sold or consumed during the operating cycle of a business generally in a year.

Working capital management is not only concerned with the management of total current assets and the excess of current assets over current liabilities but it is concerned with all kinds of problems that arise in attempting to manage the current assets, current liabilities and the inter-relationship that exists between time. The meaning of 'working capital' should not be allowed to limit either the gross or net concept of working capital only. A few other concepts of working capital are circulating, permanent and variable or seasonal working capital. Circulating working capital concept emphasizes the circuit flow of current capital. Circuit flow means the circulation of capital from cash to inventories to receivables and back to cash. Every company and industries needs such excess of current assets over current

liabilities as is necessary to keep up the circulation of the capital from cash to inventories to receivables and back to cash. Permanent working capital refers to the amount of investment which is necessary to keep up the circulation of capital from cash to cash, from month to month and year to year. Variable or seasonal working capital refers to the current assets investment required to fill the demands of the seasonal busy periods at stated intervals.

Working capital management is concerned with all decisions and acts that influence the size and effectiveness of working capital. It can also be defined as that aspect of financial management which is concerned with “the safeguarding and controlling of the firm’s current assets and the planning for sufficient funds to pay current bills. In simple terms, working capital management may be defined as the management of current assets and the sources of their financing.

1.3 WORKING CAPITAL OBJECTIVES

With regard to management of working capital, there are two major implications. Firstly, the decisions that affect the level of working capital are frequent and repetitive. Such decisions should be consistent with the objectives and goals of a firm, and a framework of unambiguous rules should be created for implementation of those decisions by the lower operating levels. Secondly, efficient management of one component of working capital cannot be undertaken without simultaneous consideration of other components because of a close interaction among them. The characteristic feature of the three basic activities of a manufacturing firm, viz., production, sales and collection, is that they are non-instantaneous,

unsynchronized and determine the life span of the components of working capital. The element of uncertainty, when added to this situation, creates a more intense need for effective working capital management.

There are two important objectives of working capital:

- Profitability
- Liquidity

Financial management cannot afford to stick to only one of these objectives. There should be a proper balance between the two so that one objective does not suffer at the expense of the other.

1.4 IMPORTANCE OF WORKING CAPITAL MANAGEMENT

One can probably attribute a large number of business failures in recent years to the inability of financial managers to plan properly and control current assets and current liabilities of their respective firms. Shortage of funds for working capital as well as uncontrolled over-expansion of working capital have caused many businesses to fail and in less severe cases, has stunted their growth. Specially, in small firms, working capital management may be the factor that decides success or failure; in larger firms, efficient working capital management can significantly affect the firm's risk, return and share price.

Working capital in an enterprise is like blood in life. An enterprise cannot be run without appropriate working capital. Not only working capital is enough, but also there should be proper management of working capital, because it is very important for the success of an enterprise and for maximizing the value.

Cash and financial budgets, are the major tools for management of working capital.

The inefficient working capital management will lead to loss of profits in the short run but it will ultimately lead to the downfall of the enterprise in the long run. A deeper understanding of the importance of working capital can lead not only to material savings in the economical use of capital but can also assert in furthering the ultimate aim of business. An excessive investment in working capital will lower the rate of return while inadequate investment will hamper the solvency position and growth, thereby affecting the smooth operation of business. However, stock of the importance of working capital for a business enterprise can be taken only when certain criteria of business efficiency are evolved and the role of working capital vis-à-vis fixed capital is adjudged in relation to them. A reasonable rate of return on investment and a good reputation in the business world can be suggested as the two meaningful criteria for viewing the efficiency of a business enterprise. In earning a reasonable rate of return the functional, complementary, proportional and technical roles of working capital play a great part.

1.5 PLANNING AND ORGANISATION OF WORKING CAPITAL MANAGEMENT

Efficient management of working capital involves careful determination of working capital requirements and formulation of plans for meeting them. A large number of factors influence the working capital needs of firms. The most important of these are: the nature and size of the business,

manufacturing cycle, business fluctuations, production policy, dividend policy, credit policy, credit availability, growth and expansion activities, profit level changes and operating efficiency. It is the consonance with these factors that the working capital requirements are planned. An effective device for working capital planning is the preparation of working capital forecast, the main objective of which is to secure an effective utilization of the proposed investment there in. a working capital forecast is prepared to determine the amount of working capital required to finance a particular level of business operations. The exercise involves complicated calculations embracing every aspect of business activity. The item usually taken into consideration while preparing a working capital forecast designed to estimate the requirements of working capital are: costs to be incurred on material, wages and overheads obtained from cost records; duration for which raw materials are to remain in stock before they are issued for production purpose; length of the production sale cycles; period of credit allowed to debtors and period of credit availed from creditors, and time lag involved in the payment of wages and overhead expenses. The budgetary approach in determining the working capital requirements involves preparation of cash budget which is an integral part of the overall budgetary process in any firm. Working capital requirements are planned keeping in view the operating cycles.

Normally a separate organizational set up for management of working capital in business enterprises does not exist. It is vested in the top financial executives who look after all the aspects of financial management of an enterprise. He is styled variously as Director Finance/Financial Advisor, Advisor Finance/Financial Advisor and Chief Accounts Officer, as the case

may be. He is concerned with the funds forecasting, laying down suitable policies and procedures; monitoring the levels of cash, receivables and inventory; deciding about the financial mix for working capital; expenditure control by fixing limits to expenditure and deciding about the levels of authorisation of expenditure; working capital control, review and replanning, formulation of guide lines for working capital expenditures, and obtaining bank finance and other funds to meet the working capital requirements, fixation of limits of expenditure and authorisation of such expenditure is essential in order to avoid recurrent problems involving adhoc discrimination between the departments.

1.6 WORKING CAPITAL MANAGEMENT: RISK-RETURN IMPLICATIONS

Almost all financial decisions involve some sort of risk return trade off. But this is more so in the working capital decisions. To take an example, the lower the cash balances held on hand, the higher would be the expected return. But at the same time the enterprise will have to assume the greater risk of running out of cash. The higher return is due to the less money tied up in non-income earning assets and the higher risk is due to the possibility of shortage of cash in the event of urgency. Thus, a low liquidity is associated with high rates of return. However, it does not mean that low liquidity is in the best interest of shareholders. No doubt, profitability has to do with the overall goal of shareholder's wealth maximization but liquidity has to do with ensuring that the enterprise is able to satisfy all of its current financial obligations. The liquidity foal is, therefore, closely connected with management of working capital, that is, decisions concerning short term

assets and liabilities, while the profitability goal reflects both short term and long term decisions-making. Generally, an enterprise cannot have zero investment in working capital. Even if this is possible the enterprise generally makes investment in working capital because it pays them to do so. The investment in working capital provides a desirable flexibility so far as seasonal requirement for funds is concerned, thereby avoiding the shortage of capital or capital lying idle in the business. It does not mean that larger the working capital, the better it is. Regarding the size of working capital to be held in the business, there is likely to be some position or range of positions that is best. The investment in fixed assets is held constant, then the benefits resulting from an additional increase in working capital will be subjected to diminishing returns. If the objective of working capital management is to maintain high liquidity in the business it means a reduced return to shareholders and a lower risk of becoming technically insolvent. Similarly, if the objective is to maintain low liquidity, it means an increased return but a high risk of becoming technically insolvent. All working capital policies ranging from low to high liquidity policies are not equally favourable. The extremely high and low liquidity policies are not at all favourable as the required rate of return or cost of capital is higher than the expected rate of return. Hence, only those liquidity policies are favourable where the expected rate of return is higher than the required rate of return or cost of capital.

1.7 REGULATION OF BANK CREDIT FOR WORKING CAPITAL

Traditionally the banking sector has been a ready source of finance for meeting working capital requirements of industry. The cash credit mechanism has been the principal device of financing working capital needs. Ready availability of finance in a convenient form led to over-borrowing by industry and deprivation of other sectors.

To bring a measure of discipline among industrial borrowers and redirect credit to other sources, the Reserve Bank of India has been issuing guidelines and directives from the banking sectors on the basis of recommendations given by the Tandon committee and the Chore committee.

1.8 TANDON COMMITTEE RECOMMENDATIONS

The Reserve Bank of India set up in 1974 a study group to frame guide lines for follow up of bank credit under the chairmanship of P.L.Tandon.

The study group reviewed the system of working capital financing and identified its major shortcoming as follows:

1. The cash credit system of lending wherein the borrower can draw freely within limits sanctioned by the banker hinders sound credit planning on the part of the banker and induces financial indiscipline in the borrower.
2. The security-oriented approach to lending favoured borrowers with strong financial resources and also led to diversion of funds, borrowed against the security of current assets, for financing fixed assets.

3. Relatively easy access to working capital finance led to large inventory levels with industry.
4. Working capital finance provided by banks, theoretically supposed to be short term in nature, tended to be, in practice, a long-term source of finance.

For the regulating bank credit, the study group made comprehensive recommendations which have been made by and large accepted by the Reserve Bank of India. These recommendations relate to:-

(A) Norms for inventories and receivables:

It is suggested for major industries. These norms have been based, inter alia, on company finance studies made by the Reserve Bank of India, process period in different industries, discussions with industry experts and feedback received on the interim report.

1. For raw materials (including stores and other materials used in process of manufacture):- maximum stock should not be more than by $2\frac{3}{4}$ times consumption of raw material in the industry in a month.
2. For stock in process (work-in-process):- should not be more than by half of the cost of production of a month.
3. For finished goods:- it should not be more than by the two times of cost of goods sold of a month.
4. For receivable:- it should not be more than by $1\frac{1}{4}$ times of a month sales.

The norms suggested may not be viewed as rigid or inflexible. Under certain circumstances like bunched receipt of raw materials, this may be permitted.

(B) Quantum of permissible bank finance:

Three methods have been suggested for determining the maximum permissible amount of bank finance:-

1. 75 percent of excess of current assets over non-bank current liabilities.
2. 75 percent of current assets as reduced by non-bank current liabilities.
3. 75 percent of excess of current assets over core current assets as reduced by non-bank current liabilities.

In method 3 the core current assets means a part of current assets which should be permanent component of working capital.

The study group suggested that borrowings in excess of what is permissible under the first method should be converted into a working capital term loan repaid over a period of time. The borrowers should gradually move to the third method.

(C) Style of lending:

The study group suggested that overall credit limit may be bifurcated into a loan component, which would represent the minimum level of borrowing throughout the year and a demand cash credit, which would take care of the fluctuating requirements, both to be reviewed annually.

The demand cash credit should be charged a slightly higher interest rate than the loan component. This approach will give the borrower an incentive for good planning.

(D) Information and reporting system:

The study group suggested comprehensive information and reporting system which seeks to:

1. Induce the borrower to plan his credit need carefully and maintain a greater discipline in its use.
2. Promote free flow of information between the borrower and the banker so that latter can monitor the credit situation better.
3. Ensure that credit is used for intended purposes.

The study group suggested submitting quarterly information regarding profit or loss, current assets and current liabilities.

1.9 CHORE COMMITTEE

The Reserve Bank of India constituted in April, 1979 a six member working group under the chairmanship of K.B.Chore to review the system of cash credit and credit management policy by banks. The committee report as considered by the R.B.I. is as follows:-

1. The net surplus cash generation of established industrial unit should be utilized partly at least for reducing borrowing for working capital purpose. In assessing maximum permissible bank finance, bank should adopt the second method of lending, recommended by the Tandon study group, according to which the borrower's contribution from owned funds and term finance to meet the working capital requirements should be equal to at least 25 percent of the total current assets. In cases where the borrowers may not be in a position to comply with this requirement immediately, the excess borrowing should be segregated and treated as working capital loan, repayable in half yearly installment (maximum five year) and rate of interest should not be less than the rate sanctioned for cash credit limit.

2. The existing system of lending (cash credit, loan and bill) should continue but wherever possible the use of cash credit should be supplemented by loans and bills. However, there should be scrutiny of the operation of the cash credit accounts at least once in a year.
3. Bifurcation of cash credit in demand loan for corporation and fluctuation cash credit component and to maintain a differential interest rate between these two components is withdrawn.
4. Banks should appraise and fix separate limits for the “normal non-peak level” and for the “peak level” credit requirements for all borrowers in excess of Rs. Ten lakhs indicating the relevant periods.
5. Drawal of funds to be regulated through quarterly statements within the sanctioned limit, borrower should intimate his need of funds in advance.
6. Borrowers should be discouraged from frequent seeking adhoc or temporary limits in excess of sanctioned limits to meet unforeseen contingencies. Additional interest of one percent should normally be charged for such limits.
7. Advances against the book-debts should be converted to bills wherever possible and at least 50 percent of the cash credit limit utilized for financing purchase of raw material inventory should also be changed to this bill system.

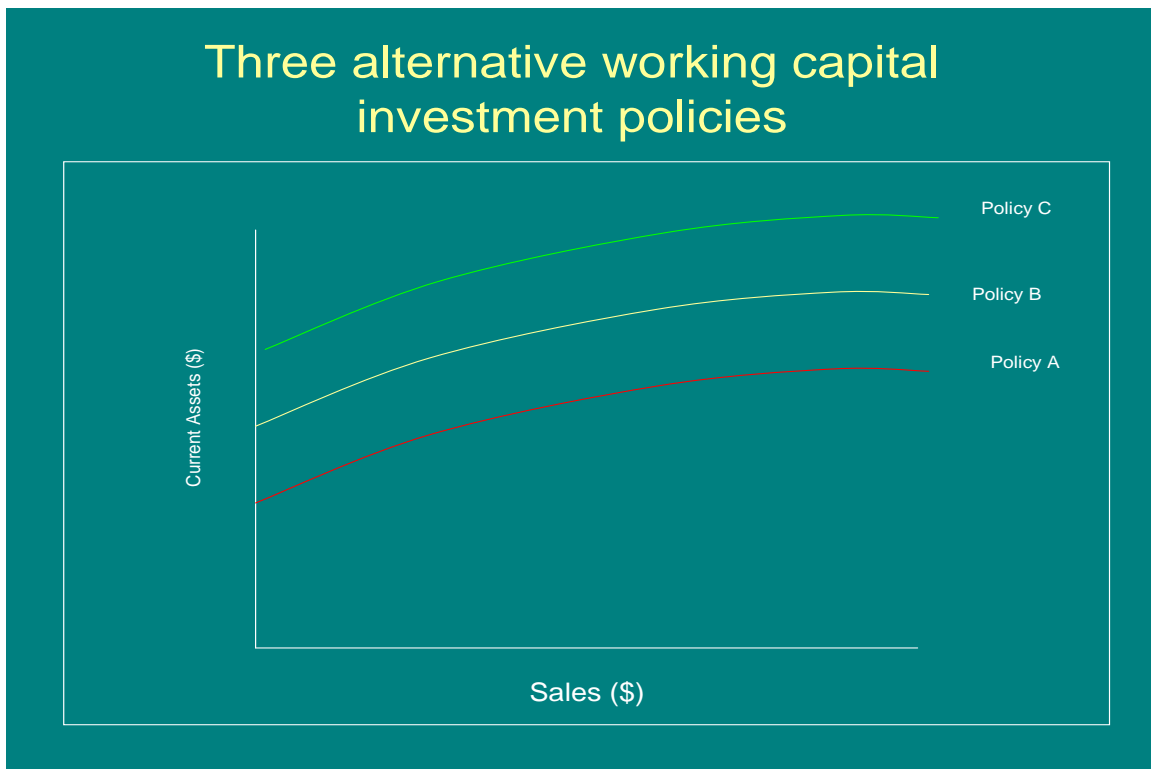
1.10 DETERMINING THE FINANCING MIX

A study of determining the financing mix also gives an idea of risk-return trade off to be achieved in working capital management. Deciding how current liabilities should be used to finance current assets is one of the most

important decisions concerning working capital management. It is necessary to understand here, that short term funds are not available to finance fixed assets. Short term lenders generally do not lend funds for financing long term assets. The problem is, therefore, whether to limit the use of long term funds to finance long term assets only or they should be used to finance current assets in addition to long term assets.

Determining an appropriate financing mix is again a matter of risk-return trade off. A number of financing mixes is available to a financial manager ranging from low-liquidity, high-liquidity policies to high-liquidity, low-liquidity policies and his job is to pick the one that properly balances profitability and liquidity. Out of them, three approaches to financing mixes of different extremes are described in the following manners:

Figure: - 1.1



- Policy C represents *conservative* approach
- Policy A represents *aggressive* approach
- Policy B represents a *moderate* approach
- Optimal level of working capital investment
- Risk of long-term versus short-term debt

Aggressive approach

The first approach refers to the aggressive financing mix which is quite risky leading to high profitability and low liquidity. The approach would be to finance seasonal requirements by long term sources. Under this approach, the risk of technical insolvency would be high as the net working capital is at a lower level as compared to second and third approaches. The profitability in this approach would be high as the cost of funds is low.

Conservative approach

The second approach refers to a financing mix which is less risky leading to low profitability and high liquidity. The approach would be to finance all funds required from long term funds. The risk is considered low here because even if the total requirement of funds actually turns out to be more, the enterprise can expect to meet it from short term sources easily as it has not been using them.

Moderate approach

This third approach refers to a financing mix which is neither too risky (as in the first approach) nor least risky (as in the second approach). It lies in between a low-liquidity, high-liquidity case and a high-liquidity low-liquidity case. In other words, the third approach aims at achieving a trade off between profitability and liquidity. The actual trade off in real life would, however, depend on management's capability to take risk. Most enterprises

try to achieve some kind of liquidity – profitability trade off in determining the financing mix. In this connection, one of the alternatives is to develop a financing mix based on an amount of permanent financing equal to the mid-point of the minimum and maximum monthly total funds requirements for the period.

From the above discussion, it is clear that higher the liquidity, lower the risk, leading to lower profitability and vice versa. Working capital management, therefore, ultimately aims at achieving some sort of a risk-return trade off. Moreover, this kind of trade off would fundamentally be a matter of management's attitude towards risk.

1.11 SOURCES OF WORKING CAPITAL

The conventional generalizations relating to the financing of working capital suggest that an amount equal to the basic minimum of current assets should be financed from long term sources and that only seasonal needs of working capital should be financed from short term sources. It is obvious that such an arrangement helps to keep the cost of working finance to the minimum for an enterprise and gives a rise to its rate of return on the total funds employed. Viewed this, the source of working finance can be classified into the following two categories:

1. Permanent sources of working finance
2. Current sources of working finance

Permanent sources of working finance

Permanent sources of working finance are both external and internal. Among the internal ones, the most important are accumulated surplus and depreciation funds. Accumulated surplus represent the industrial profits of a business enterprise. Such surplus violently fluctuates with the changes in the rate of corporate taxation and dividend policy. So far depreciation is concerned; it constitutes a part of the cost of business operations and consequently represents an expense that is chargeable against earnings. Unlike most expenses, however, it does not represent a cash outlay and is referred to as the non-cash expense. As a result of this, an enterprise gathers capital in an amount equal to the depreciation provision charged against the earnings. The purpose of this accumulation is to provide for the ultimate replacement of the depreciating asset.

Retained earnings and the depreciation funds may prove to be the best source of permanent working finance but they are not available in the initial stages of an enterprise. Unless an enterprise has been in operation for long, their share in the working finance is not likely to be too much.

If these two are inadequate and the policy of the government is not in the favour of accumulation, the enterprises might be required to finance the needs of their permanent working finance from external sources. Among the external sources, the government in general will be the only source which may be tapped. The government may give the money in the form of equity or loans.

Current sources of working finance

The current sources of working finance may be external or internal. Among the internal sources, a reference may be made to tax provisions and unpaid dividends. Taxes are payable at stated intervals subsequent to the receipt of income on which they are assessed. An enterprise, therefore, has the chances of using the funds kept under tax provision during the interval. Similarly, the payment of dividends may be so timed as to suit the requirements of the working finance, particularly when they are enhanced by seasonal factors. But these sources can be tapped at only occasional times and that too with the limitation in regard of their inflexibility and their non-availability in the initial stages of the operation of an enterprise.

Externally, a large part of the current working finance may be arranged in the form of borrowings from banks. These borrowings may take the form of unsecured and secured loans. The establishment of overdraft facilities with commercial banks may also enable enterprises to draw the required amount as and when necessary.

1.12 EXCESS OR INADEQUATE WORKING CAPITAL

The concern should maintain a sound working capital position. It should have adequate working capital to run its business operations smoothly & efficiently. Both excessive as well as inadequate working capital positions are dangerous from the concern's point of view. Excessive working capital means idle funds lying in the concern which earn no profits for the concern. Paucity of working capital not only impairs firm's profitability but also results in production interruptions and inefficiencies.

1.13 ADEQUACY OF WORKING CAPITAL

Working capital should be adequate because of the following reasons:

1. It protects the business from the adverse effects of shrinkage in the values of current assets.
2. It is possible to pay all the current obligations promptly and to take advantage of cash discounts.
3. It ensures to a greater extent the maintenance of a company's credit standing and provides for such emergencies, as strikes, floods, fires etc.
4. It permits the carrying of inventories at a level that would enable a business to serve satisfactorily the needs of its customers.
5. It enables a company to extend favourable credit terms to customers.
6. It enables a company to operate its business more efficiently because there is no delay in obtaining materials, etc. because of credit difficulties.
7. It enables a business to win short periods of depression smoothly.
8. There may be operating losses or decreased retained earnings.
9. There may be excessive non-operating or extraordinary losses.
10. The management may fail to obtain funds from other sources for purpose of expansion.
11. There may be an unwise dividend policy.
12. The management may fail to accumulate necessary funds for meeting debentures on maturity.
13. There may be bigger investment in inventories and fixed assets due to increased prices.

The dangers of excessive working capital are as follows:

1. It results in unnecessary accumulation of inventories, thus inventory mishandling, waste, theft and losses increase.
2. Excessive working capital makes management complacent which degenerates into managerial inefficiency.
3. It is an indication of defective credit policy and slack collection period. Consequently, higher incidence of bad debts results, which adversely affects profits.
4. Tendencies of accumulating inventories make speculative profits grow. This may tend to make dividend policy liberal and difficult to cope with in future when the firm is unable to make speculative profits.

Inadequate working capital has the following dangers:

1. It stagnates growth. It becomes difficult for the concern to undertake profitable projects because of non-availability of the working capital funds.
2. It becomes difficult to implement operating plans and to achieve the concern's profit target.
3. The concern loses its reputation when it is not in a good position to honour its short term obligations. As a result, the firm faces tight credit terms.
4. Operating inefficiencies creep in when it becomes difficult even to meet day-to-day commitments.
5. Fixed assets are not efficiently utilized for the lack of working capital funds. Thus, the rate of return on investment slumps.

6. Paucity of working capital funds renders the firm unable to avail attractive credit opportunities.

An enlightened management should, therefore, maintain a right amount of working capital on a continuous basis. Only then a proper functioning of the business operations will be ensured. Sound financial, statistical and quantitative techniques, supported by judgement of working capital needed at different time periods.

Figure: - 1.2

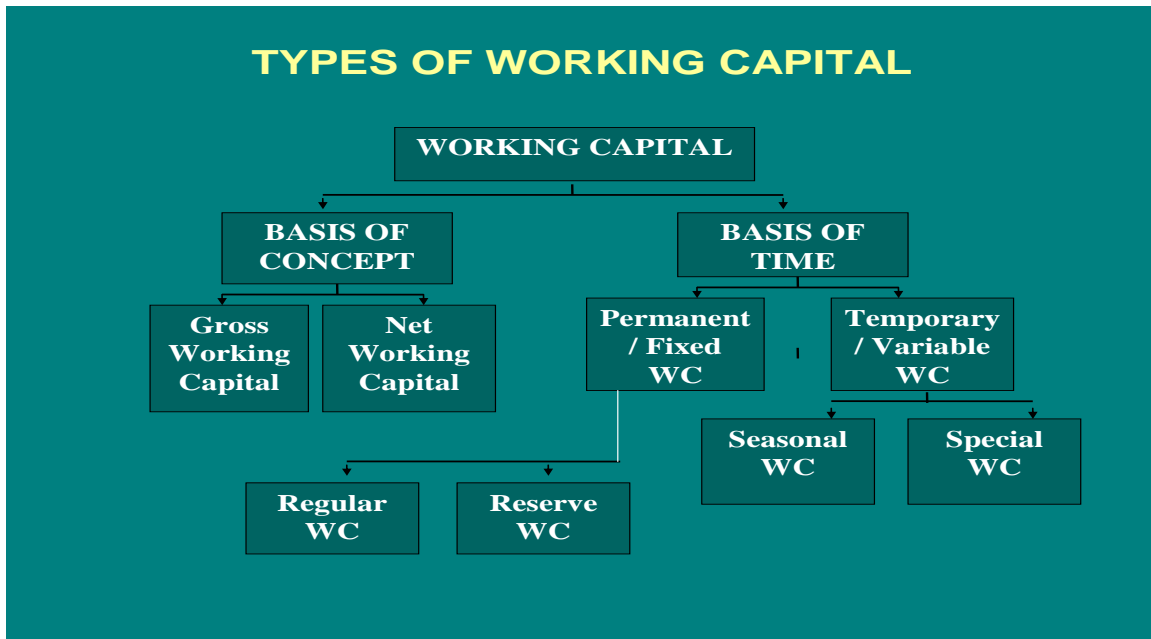


Figure: - 1.3

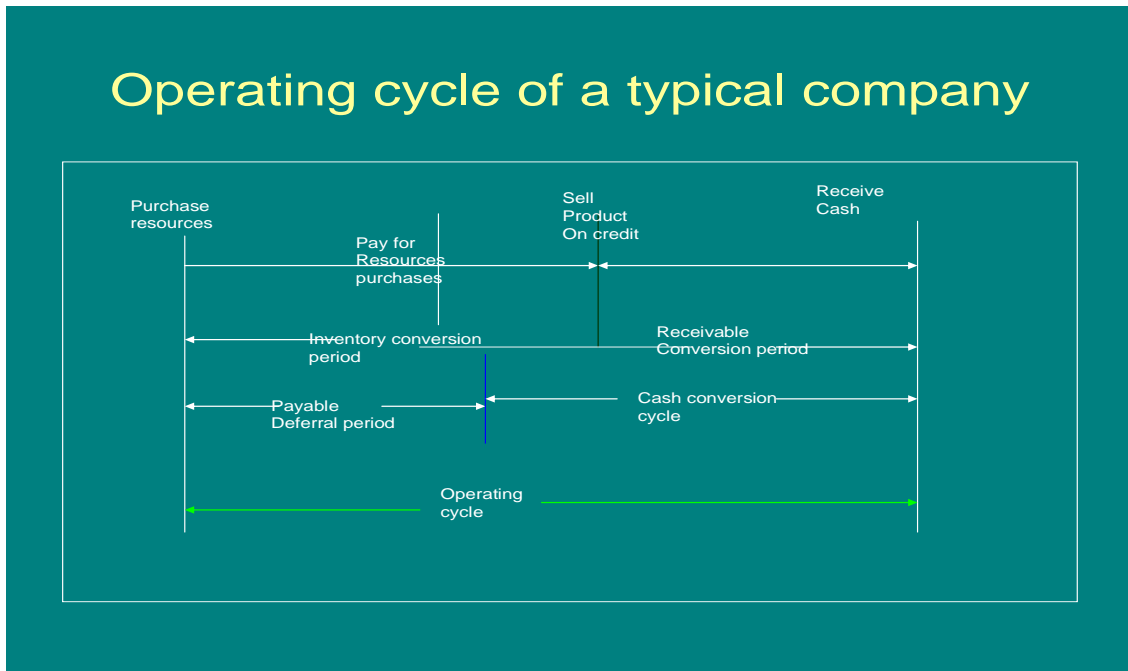


Figure: - 1.4

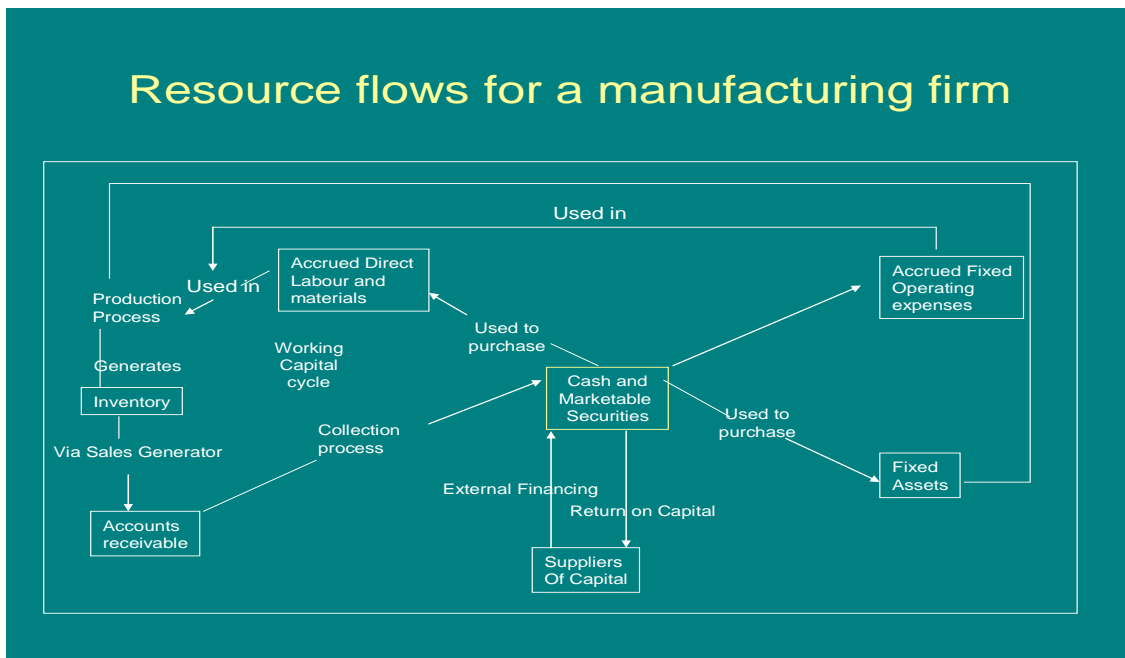
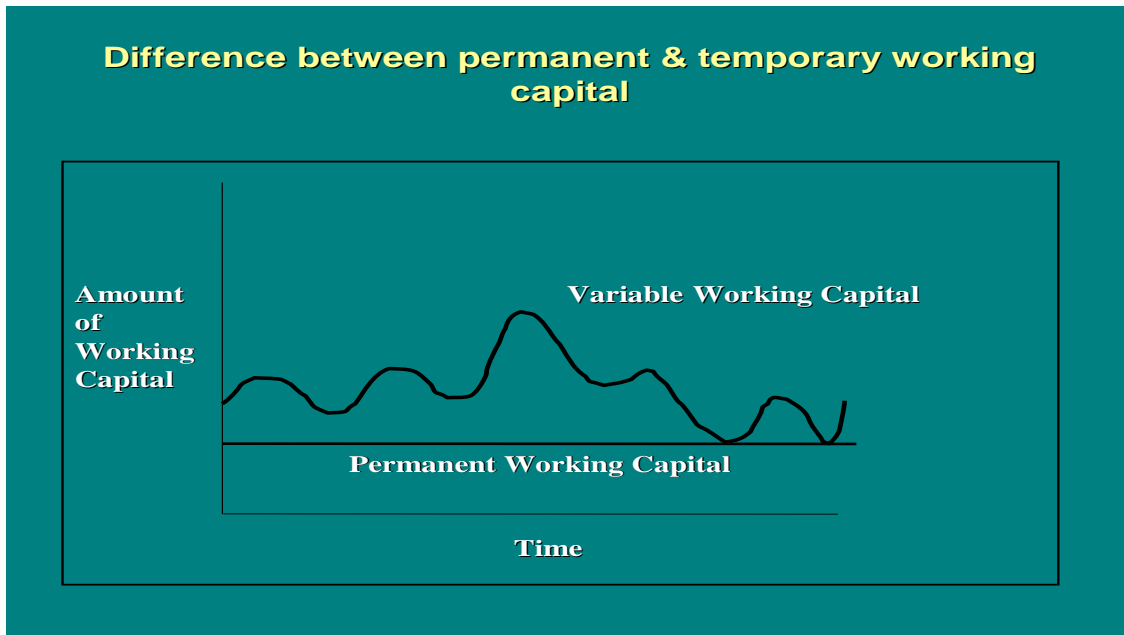


Figure: - 1.5



1.14 FINANCING WORKING CAPITAL: A NEW APPROACH

The distinction between variable and permanent components of current assets may be difficult to make in practice but it is neither illusory nor unimportant. Short-term financing for long term needs is dangerous. A profitable firm may not be in a position to meet its current obligations if funds borrowed on a short-term basis have become tied up in permanent assets (permanent current assets and fixed assets).

Figure: - 1.6

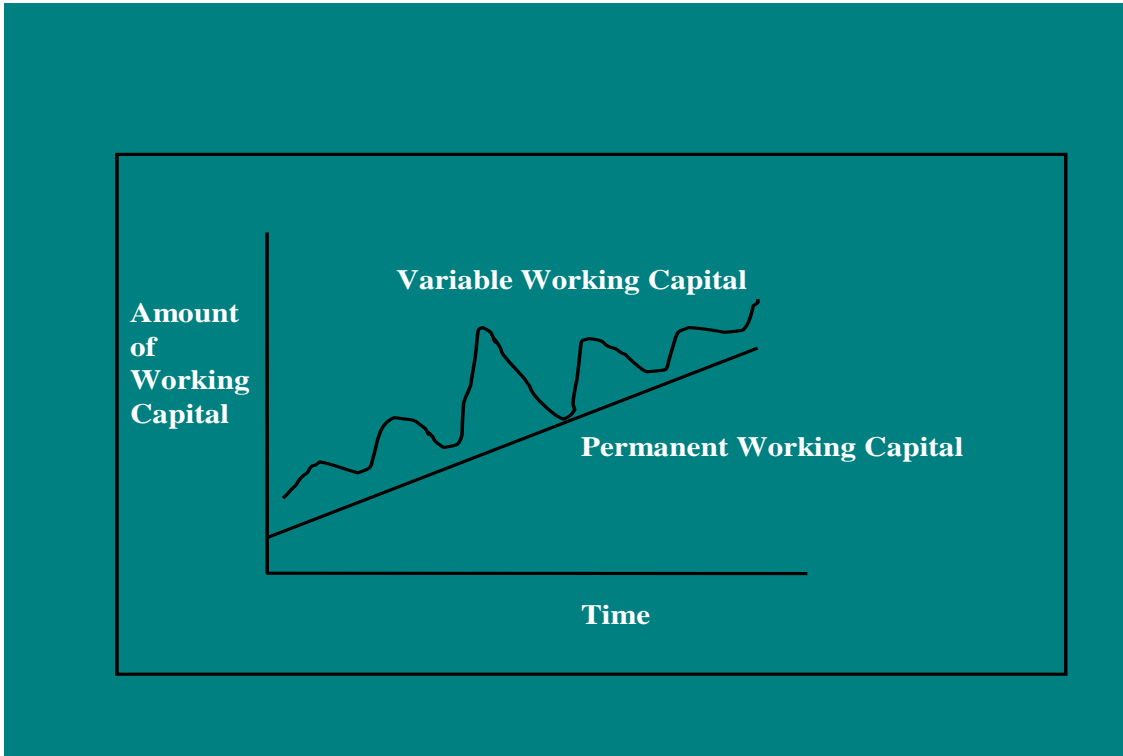
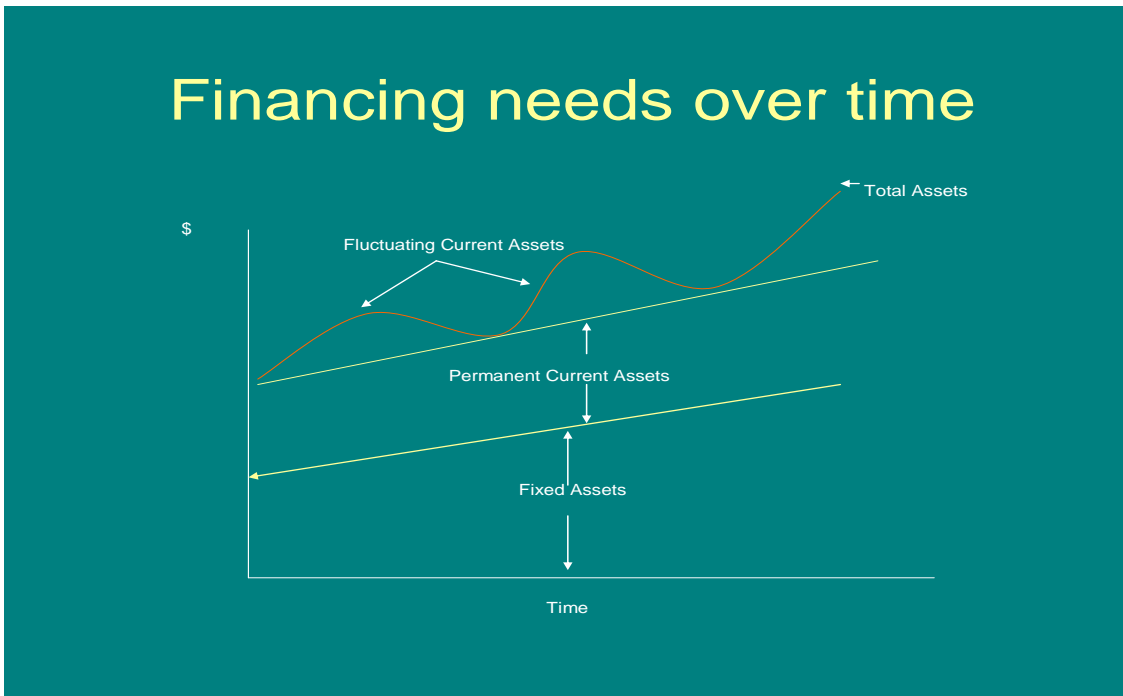


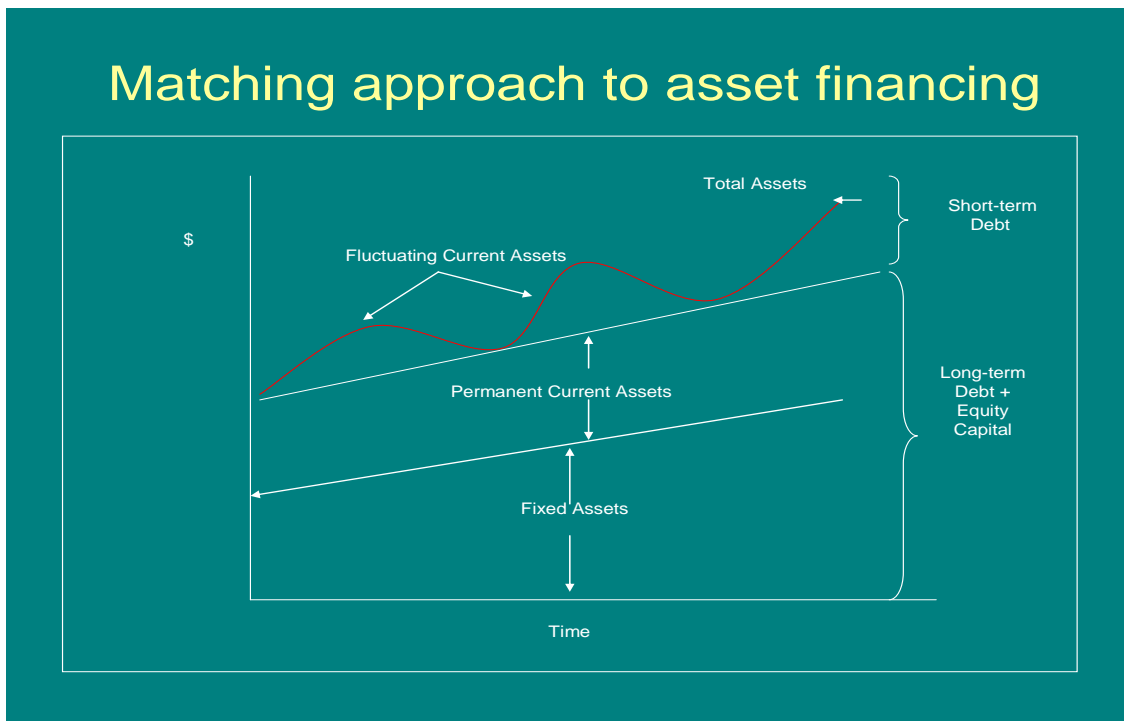
Figure: - 1.7



A hedging approach to financing suggests that apart from current assets/investments or long term debts, a firm would show no current borrowings at the seasonal troughs. Short term borrowing would be paid off with surplus cash.

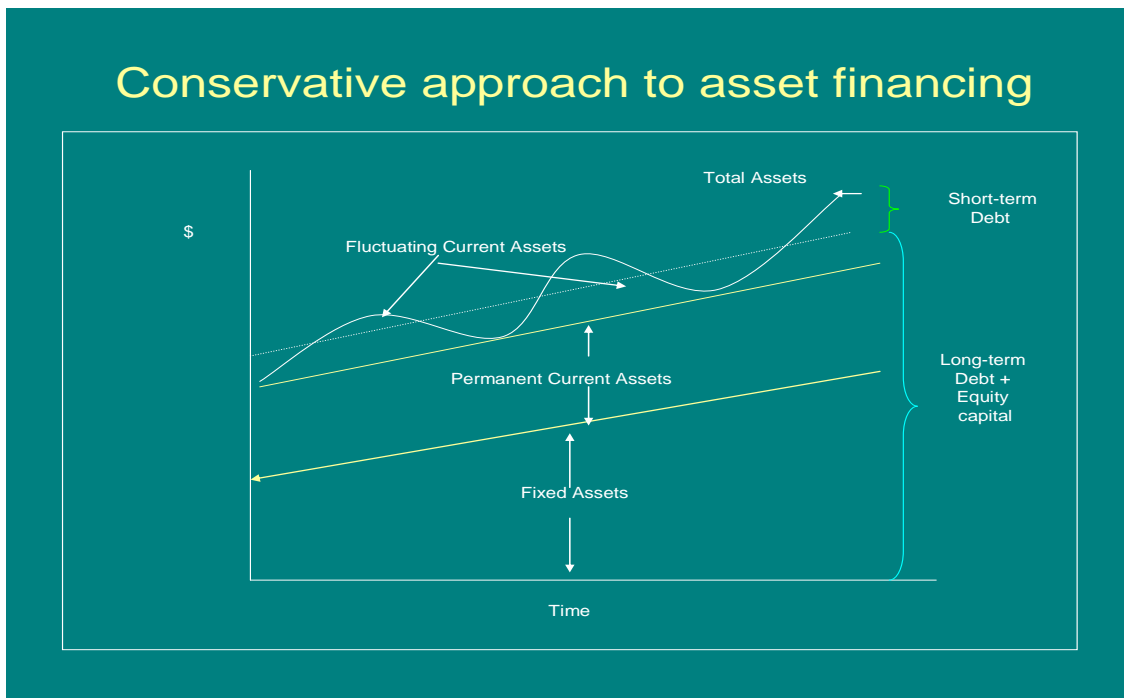
As the firm's variable current assets would go up, it would borrow on a short term basis, again paying the borrowings off as surplus cash generated. Permanent funds requirements would be financed by long term debt and equity (externally raised or internally generated). In a growth situation, permanent financing would be increased in keeping pace with permanent funds requirements.

Figure: - 1.8



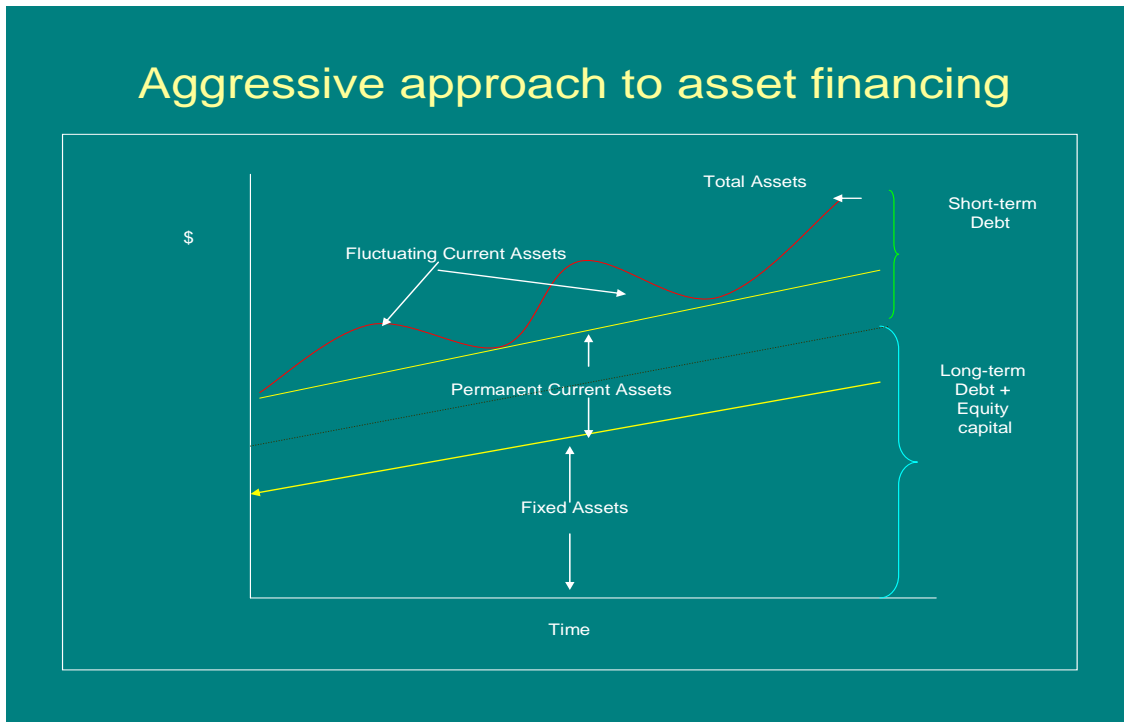
The situation of a firm that attempts to match maturities of assets and liabilities exactly. But firms may follow other maturity marching policies if they desire. The situation of a firm that finances its all fixed assets with long term capital but part of its permanent current assets with short term credit.

Figure: - 1.9



Alternatively, the dashed line could be drawn above the line designating permanent current assets, indicating that capital is being used to meet long term seasonal demands.

Figure: - 1.10



1.15 TECHNIQUES OF WORKING CAPITAL ANALYSIS

Working capital balance is measured from the financial data of corporate balance sheet. Usually, the working capital balance of a going concern has a positive value but often uses of working capital exceed the sources of working capital in certain periods. A study of cause of changes that takes place in the balances from time to time is necessary. The following techniques are generally used in the analysis of working capital.

1. Working capital trend analysis
2. Working capital ratios
 - Current ratio
 - Acid test ratio or quick ratio
 - Ratio of funded debt to working capital

- Ratio of current liabilities to tangible net worth
 - Turnover of working capital
3. Operating cycle approach
 4. Fund flow analysis
 5. Other techniques

1. Working capital trend analysis

For analysing the long term tendency of the data shown in the financial statement, the techniques of trend analysis may be adopted. This method involves the calculation of percentage relationship that each item bears to the same in the base year. Trend percentage of working capital discloses changes in working capital data between specific periods and make possible for the analyst to form an opinion as to whether favourable tendencies are reflected by the data.

2. Working capital ratios

The ratio analysis of working capital can be used by management as a means of checking the efficiency with which working capital is being used in an enterprise. The most important ratios for working capital management which are generally used for the analysis of working capital are as follows:

- **Current ratio**

It is also called as working capital ratio. The current ratio knows the relationship between total current assets and total current liabilities, i.e. cash or those expected to be converted into cash within a year and those to be paid within the same period. The year in each case is naturally the maximum period, many of the current assets and liabilities being considered at any one time may change their form frequently during the course of single period.

Current assets normally include cash in hand or at bank, marketable securities, other short-term high quality investments, bills receivable, prepaid expenses, etc. while current liabilities are composed of sundry creditors, bills payable etc.

This ratio is generally an acceptable measure of short term solvency as it indicates the extent to which the claims of short term creditors are covered by assets that are likely to be converted into cash in a period corresponding to the maturity of the claims.

The current ratio is computed by dividing current assets by current liabilities. While interpreting this ratio, consideration should be given to the proportion of the various components of current assets. A current ratio of 2:1 has long been considered generally satisfactory but indiscriminate use of this standard is unsound. This ratio varies from industry to industry and within the same industry from company to company and within the same company from season to season. One should be careful to determine acceptable standards within the industry in which the company operates.

- **Acid test ratio or quick ratio**

Current ratio was developed many decades ago as a means of deriving a rough idea of the liquidity of a firm therefore; a second testing device for the working capital position has been evolved by the name of quick ratio or acid test ratio.

Quick ratio, as it is some times called, is concerned with the relationship between liquid assets and liquid liabilities to supplement the information given by the current ratio. In many times of business, a concern whose current assets consists of large inventory, can easily become technically, if not actually, insolvent within a very short period of time and this is the rationale of the term “acid test ratio”, the name being preferred.

Liquid assets would include cash, debtors after providing for bad and doubtful debts and securities which can be realised without difficulty. Liquid or quick liabilities refer to current liabilities less bank overdraft i.e. creditor, bills payable and outstanding less accrued expenses. Inventories are not included in current assets for the purpose of this ratio.

Like current ratio, a reasonable standard for the acid test ratio varies from season to season in a company and from company to company in an industry.

- **Ratio of funded debt to working capital**

The ratio shows the relationship between the long term liabilities and working capital. It is computed to measure the financial soundness of business enterprise. A funded debt means all debts which will become due for repayment after a year from the date of balance sheet.

This ratio is calculated by dividing the long term debts by the amount of net working capital. It helps in examining creditor’s contribution to the liquid assets of the firm. Funded debt does not exceed working capital in most

industrial concerns. If net working capital is less than funded debt, difficulty in meeting financial obligations is likely to arise over the long run.

A lower ratio represents a high coverage of funded debt in the form of working capital and that means greater security of funds.

- **Ratio of current liabilities to tangible net worth**

The ratio shows the relationship between the current liabilities and funds invested by the owner. The funds permanently invested by the owners serve as caution for credit temporarily extended to the business. Accordingly higher the ratio, greater is the risk of short term creditors, so from the point of view of creditors, it is in their interest if this ratio is lower, as it ensure that the debts will be paid off as and when they become due.

- **Turnover of working capital**

The turnover of working capital indicates the rate of working capital utilization. It shows how efficiently the working capital is being utilised. A high turnover of working capital indicates better utilization of working capital while the low ratio shows the reverse position. But some times a high ratio may be on account of the existence of inadequate working capital. As such it is difficult to establish a norm but working capital turnover should neither be very high nor very low. This ratio is obtained by dividing sales by working capital. But in case of financial institutions, in place of sales the figures of loan disbursed should be taken.

3. Operating cycle approach

The operating cycle of a firm begins with the acquisition of raw materials and ends with the collection of receivables. It may be divided into four stages:

- a. Raw materials and stores storage stage
- b. Work-in-process stage
- c. Finished goods inventory stage
- d. Debtors/receivables collection stage

The duration of the operating cycle is equal to the sum of the durations of each of these stages less the credit period allowed by the suppliers of the firm. This period can be calculated by following formula:

$$O = R + W + F + D - C$$

Where, O = Duration of operating cycle

R = Raw materials and stores storage period

W = Work-in-process period

F = Finished goods storage period

D = Debtors collection period

C = Creditors payment period

The component of the operating cycle may be calculated as follows:

Average stock of raw materials and stores

$$R = \frac{\text{Average stock of raw materials and stores}}{\text{Average consumption of raw materials and stock per day}}$$

Average consumption of raw materials and stock per day

Average inventory of work-in-process

$$W = \frac{\text{Average inventory of work-in-process}}{\text{Average cost of production per day}}$$

Average cost of production per day

$$F = \frac{\text{Average finished goods inventories}}{\text{Average cost of goods sold per day}}$$

$$D = \frac{\text{Average book-debts / receivables}}{\text{Average credit sales per day}}$$

$$C = \frac{\text{Average trade creditors}}{\text{Average credit purchases per day}}$$

The operating cycle is helpful to determine the requirement of working capital and control over it. To forecast the working capital requirements for the next year the following formula may be used:

$$\text{Estimated cost of goods sold} \times \frac{\text{Operating cycle}}{360} + \text{Desired cash}$$

Monitoring the duration of the operating cycle is an important ingredient of working capital control. In this context, the following points should be born in mind:

1. The duration at the raw material stage depends on the regularity of supply, transportation time perishability, price fluctuations and economies of bulk purchase.
2. The duration at the work-in-process stage depends on the length of manufacturing cycle, consistency in capacities at different stages and efficient coordination of various inputs.

3. The duration at the finished goods stage depend on the pattern of production and sales. If pattern is fairly uniform throughout the year but the sales are highly seasonal or vice-versa, the duration at the finished goods stage tends to long.
4. The duration at the debtor's stage depends on the credit period granted, discount offered for payment and efficiency and vigour of collection efforts.

4. Fund flow analysis

By this technique we analyse the changes in working capital components between two balance sheet dates. This analysis shows the movement of funds into the firm's current accounts from external sources such as stock holders, creditors and customers. It also shows the movement of funds to meet firm's obligations, to retire stock, to pay dividends.

1. Fund flow analysis helps in answering questions like:-

- Have capital investments been supported by long term financing?
- Have short-term sources of financing been used to support capital investments?
- How much funds have been generated from the operations of the business?
- How much the firm has relied on external sources of financing?
- What major components of funds have been made during the year?
- Has the liquidity position of the firm improved?

5. Other techniques

Some other techniques like cash flow analysis and statistical methods mean, range, moving averages, index numbers, co-relation, and regression analysis of time series can also be used for analysing working capital.

1.16 REFERENCES

- Aggrawal N.K. Management of working capital, Sterling publishers (P) Ltd., New-Delhi, 1983.
- Aggrawal N.P. Analysis of financial statement, National publishing house, New-Delhi, 1981.
- Backman T.N. Credit and Collection management & Theory, Mc.Graw Hills, New York, 1962.
- Bhalla P.N. Cash management in S.T.D., Lok-udyog Vol. VI No.8. (Nov.1972)
- Chadda R.S. Inventory Management in India, Allied publishers, Bombay, 1971.
- Chawla S.K. Working capital management – A practical approach
- Greig, Cuthbert Commercial credit and accounts collection, The furniture records, London.
- Leslie R. Harward Working capital – its management and control, Mc Donald and evans Ltd, London.
- Marting John Control of working capital.
- Mishra R.K. Working capital management, Somaiya publication (P) Ltd, Bombay.
- Norman E. Managing company cash.
- Pradhan R.S. Management of working capital.
- Rajan N. Material management in public enterprises.

CHAPTER – 2

CHAPTER 2
NATURE AND GROWTH OF SMALL SCALE INDUSTRIES
IN GUJARAT

2.1 District-wise & Group-wise SSI registration

2.2 Production

2.3 Employment

2.4 Generation of employment

2.5 Per unit employment

2.6 Location-wise employment distribution

2.7 State-wise employment distribution

2.8 Opportunity

2.9 Business environment

2.10 Business incentives

2.11 Investment

2.12 Export

2.13 References

2.1 DISTRICTWISE & GROUPWISE SSI REGISTRATION

Gujarat has witnessed impressive industrial development in SME sector. There were only 2169 small industries in 1961 at the time formation of the state. The number of SSIs increased continuously and has reached over to 3,12,000 by September 2006.

Small scale industries have also played an important role in industrial dispersal. Ahmedabad district leads in the state with the highest number of SSIs followed by Surat, Rajkot and other districts.

Districtwise ssi registration

District Industries Centre in all districts of the state and the institutions such as Gujarat Industrial Development Corporation (GIDC) and Gujarat State Financial Corporation (GSFC) have provided boost to the development of SSIs.

Table: - 2.1 Cumulative Progress of Permanent SSI Registration

Sr. No.	Year	SSI Registration
1	1961	2169
2	1970	15849
3	1980	43712
4	1990	115384
5	1995	178627
6	2000	251088
7	2001	264668
8	2002	274315
9	2003	286185
10	2004	296306
11	2005	306646
12	2006 (Sept.-06) (P)	312782

Table: - 2.2 District-wise SSI registration

S.N.	District	Upto 31st September-2006
1	Ahmedabad	65763
2	Amreli	4890
3	Banaskantha	6819
4	Bharuch	14328
5	Bhavnagar	11821
6	Gandhinagar	4808
7	Jamnagar	13236
8	Junagadh	7986
9	Kheda	13521
10	Kutch	6109
11	Mehsana	14602
12	Panchmahals	6704
13	Rajkot	32461
14	Sabarkantha	8601
15	Surat	47404

16	Surendranagar	8609
17	Vadodara	18498
18	Valsad	15966
19	Dang	53
20	Anand	2298
21	Dahod	1092
22	Narmada	816
23	Navsari	3357
24	Patna	2274
25	Porbandar	766
Total		312782

Source: <http://www.ic.gujarat.gov.in/indus-stat/SSI-02.htm>

Table: - 2.3 Registration of SSI Units in Gujarat - Recent Trend

Sr. No.	Item	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02
1	Total No. of units regd.	14063	14631	14761	14437	13325	11316
		[100.00]	[100.00]	[100.00]	[100.00]	[100.00]	[100.00]
2	Total investment (in Rs. Crs.)	529.46	496.77	792.96	732.43	675.84	650.52
3	Employment	47510	43934	48032	44274	43741	46282
4	Units registered in Metropolitan Area	1545	796	456	311	822	220
		[10.95]	[5.44]	[3.09]	[2.15]	[6.17]	[1.94]
5	Units registered in Urban Area	7513	8380	8150	8496	8074	7491
		[53.55]	[57.28]	[55.21]	[58.85]	[60.59]	[66.20]
6	Units registered in Rural Area	5005	5455	6155	5630	4429	3605
		[35.5.]	[37.28]	[41.70]	[39.70]	[33.24]	[31.86]
7	Units regd. in Industrially Backward area	5269	5720	5660	5532	4292	3248
		[37.67]	[39.10]	[38.34]	[38.32]	[32.21]	[28.70]
8	SIDO units	12894	12321	11590	11254	10184	7856
		[91.36]	[84.21]	[78.52]	[77.95]	[76.43]	[69.42]
9	No. of tiny units registered	13024	13725	13595	13351	12243	11120
		[92.28]	[93.61]	[92.10]	[92.48]	[91.88]	[98.27]
10	No. of SSSBES units	7113	4837	7317	6932	7168	4948
		[50.40]	[47.78]	[49.57]	[48.02]	[53.79]	[43.73]
11	Units promoted by S.C. entrepreneurs	166	223	347	291	363	259
		[1.18]	[2.20]	[2.35]	[2.02]	[2.72]	[2.29]
12	Units promoted by S.T. entrepreneur	98	148	233	187	348	278
		[0.69]	[1.46]	[1.58]	[1.30]	[2.61]	[2.46]

13	Units promoted by S.E.B.C.	278	98	385	481	658	526
	entrepreneurs	[1.97]	[0.97]	[2.61]	[3.33]	[4.94]	[4.65]
14	Units promoted by Women	906	688	1128	1234	1172	929
	entrepreneurs	[6.42]	[6.80]	[7.64]	[8.55]	[8.80]	[8.21]
Note : Figures in the brackets indicate percentage to Total Source : Industries Commissionerate							

Sr. No.	Item	2002-03	2003-04	2004-05	2005-06 (Revised-P)	2006-07 (P) Up to 30-09-06
1	Total No. of units regd.	10905	10931	10336	10055	2764
		[100.00]	[100.00]	[100.00]	[100.00]	[100.00]
2	Total investment (in Rs. Crs.)	454.86	491.12	574.08	699.74	293.74
3	Employment	31062	29924	30784	35555	12877
4	Units registered in Metropolitan Area	141	7	5	151	29
		[1.29]	[0.06]	[0.05]	[1.50]	[1.05]
5	Units registered in Urban Area	6552	6678	5369	4456	1347
		[60.08]	[38.83]	[51.94]	[44.32]	[48.73]
6	Units registered in Rural Area	4211	4244	4959	5448	1388
		[38.62]	[38.83]	[47.98]	[54.18]	[50.22]
7	Units regd. in Industrially Backward area	2623	2788	1999	---	---
		[24.05]	[25.51]	[19.34]		
8	SIDO units	9310	9798	9019	7743	2184
		[85.37]	[89.63]	[87.26]	[77.01]	[79.02]
9	No. of tiny units registered	10701	10661	10025	10033	2763
		[98.13]	[97.53]	[96.99]	[99.78]	[99.96]
10	No. of SSSBES units	7313	6342	6289	5327	1382
		[67.06]	[58.02]	[80.85]	[52.98]	[50.00]
11	Units promoted by S.C. entrepreneurs	530	691	866	518	188
		[4.86]	[6.32]	[8.38]	[5.15]	[6.8]
12	Units promoted by S.T. entrepreneur	291	327	491	394	161
		[2.67]	[2.99]	[4.75]	[3.92]	[5.82]
13	Units promoted by S.E.B.C. entrepreneurs	558	310	369	863	242
		[5.12]	[2.84]	[3.57]	[8.58]	[8.76]
14	Units promoted by Women entrepreneurs	928	1765	1249	1485	466
		[8.51]	[16.15]	[12.08]	[14.77]	[16.86]

Note : Figures in the brackets indicate percentage to Total / Source : Industries Commissionerate

Table: - 2.4 Groupwise ssi registration

Sr. No.	Industry Group	SSI Unit Regd.
1	Food Products	16467
2	Beverages, Tobacco & Tobacco Products	1455
3	Textiles	66914
4	Wood Products	13498
5	Paper Products & Printing	8244
6	Leather products	2476
7	Rubber & Plastic Products	11780
8	Chemical & Chemical Product	15553
9	Non-Metallic Mineral Products	11345
10	Basic Metal Industries	8795
11	Metal Products	23421
12	Machinery & Parts except Electronics	23792
13	Electrical Machinery & Apparatus	6451
14	Transport Equipments & Parts	2944
15	Others	99647
Total		312782

Table: - 2.5 GROUPWISE SSI REGISTRATION - RECENT TREND

Sr. No.	Item	SSI units registered during the year						
		1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00
1	Food Products	676	977	889	538	850	878	683
2	Beverages, Tobacco & Tobacco Products	103	84	97	55	70	64	59
3	Cotton Textiles	546	684	790	87	150	157	171
4	Wool, Silk & Synthetic Fibre Textiles	1410	876	575	220	178	192	170
5	Hosiery & Garments	1855	2244	2350	1694	2976	3296	3558
6	Wood Products	502	486	456	571	580	510	487
7	Paper Prod. & Printing	328	328	365	307	302	207	164
8	Leather Products	99	188	90	150	126	125	118
9	Rubber & Plastic prod.	486	529	522	560	469	425	346
10	Chemical & Chemical Prod	627	345	316	296	240	270	209
11	Non- Mettalic Mineral Products	597	814	543	359	356	422	345
12	Basic Metal Industries	343	345	449	337	237	177	207
13	Metal Products	664	700	685	821	683	464	489
14	Machinery & Parts except ele.	1165	1094	1111	1315	930	987	669
15	Electrical machinery & Apparatus	266	229	245	205	153	149	132
16	Transport Equipments & Parts	105	125	113	90	62	55	76
17	Misc. Manufacturing Industries	741	656	726	702	675	461	458
18	Repair Services	1837	2203	2512	4100	3687	3923	3687
19	Other Industries	677	897	1077	1656	1907	1999	2409
	Total	13027	13804	13911	14063	14631	14761	14437

		2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07 (Up to Sept-06)
1	Food Products	760	733	499	574	466	268	128
2	Beverages, & Tobacco	45	48	51	4	2	45	9
3	Cotton Textiles	689	306	124	3664	849	346	83
4	Wool, Silk & Synthetic Fibre Textiles	607	2056	545	0	0	1207	376
5	Hosiery & Garments	2603	1415	1998	0	0	153	46
6	Wood Products	337	321	271	376	135	106	63
7	Paper Prod. & Printing	179	166	149	165	173	76	30
8	Leather Products	71	47	117	69	74	28	9
9	Rubber & Plastic prod.	288	448	203	219	206	223	95
10	Chemical & Chemical Prod	210	246	172	135	151	113	76
11	Non- Mettalic Mineral Products	231	298	152	169	173	122	36
12	Basic Metal Industries	142	137	113	204	191	255	123
13	Metal Products	356	383	289	479	406	226	70
14	Machinery & Parts	578	603	446	291	262	238	61
15	Electrical machinery & Apparatus	146	124	161	116	125	139	44
16	Transport Equipments & Parts	74	76	27	24	43	50	13
17	Misc.	234	248	167	449	3226	134	126
18	Repair Services	2677	1554	2713	2058	2094	4680	1143
19	Other Industries	3098	2107	2708	1935	1760	1646	233
	Total	13325	11316	10905	10931	10336	10055	2764

2.2 PRODUCTION

The small-scale industries sector plays a vital role in the growth of the country. It contributes almost 40% of the gross industrial value added in the Indian economy.

It has been estimated that a million Rs. of investment in fixed assets in the small scale sector produces 4.62 million worth of goods or services with an approximate value addition of ten percentage points.

The small-scale sector has grown rapidly over the years. The growth rates during the various plan periods have been very impressive. The number of small-scale units has increased from an estimated 0.87 million units in the year 1980-81 to over 3 million in the year 2000.

When the performance of this sector is viewed against the growth in the manufacturing and the industry sector as a whole, it instills confidence in the resilience of the small-scale sector.

2.3 EMPLOYMENT

SSI Sector in India creates largest employment opportunities for the Indian populace, next only to Agriculture. It has been estimated that 100,000 rupees of investment in fixed assets in the small-scale sector generates employment for four persons.

2.4 GENERATION OF EMPLOYMENT - INDUSTRY GROUP-WISE

Food products industry has ranked first in generating employment, providing employment to 0.48 million persons (13.1%). The next two industry groups were Non-metallic mineral products with employment of 0.45 million persons (12.2%) and Metal products with 0.37 million persons (10.2%).

In Chemicals & chemical products, Machinery parts except Electrical parts, Wood products, Basic Metal Industries, Paper products & printing, Hosiery & garments, Repair services and Rubber & plastic products, the contribution ranged from 9% to 5%, the total contribution by these eight industry groups being 49%.

In all other industries the contribution was less than 5%.

2.5 PER UNIT EMPLOYMENT

Per unit employment was the highest (20) in units engaged in beverages, tobacco & tobacco products mainly due to the high employment potential of this industry particularly in Maharashtra, Andhra Pradesh, Rajasthan, Assam and Tamil Nadu.

Next came Cotton textile products (17), Non-metallic mineral products (14.1), Basic metal industries (13.6) and Electrical machinery and parts (11.2.) The lowest figure of 2.4 was in Repair services line.

Per unit employment was the highest (10) in metropolitan areas and lowest (5) in rural areas.

However, in Chemicals & chemical products, Non-metallic mineral products and Basic metal industries per unit employment was higher in rural areas as compared to metropolitan areas/urban areas.

In urban areas highest employment per unit was in Beverages, tobacco products (31 persons) followed by Cotton textile products (18), Basic metal industries (13) and Non-metallic mineral products (12).

2.6 LOCATION-WISE EMPLOYMENT DISTRIBUTION - RURAL

Non-metallic products contributed 22.7% to employment generated in rural areas. Food Products accounted for 21.1%, Wood Products and Chemicals and chemical products shared between them 17.5%.

URBAN

As for urban areas, Food Products and Metal Products almost equally shared 22.8% of employment. Machinery parts except electrical, Non-metallic mineral products, and Chemicals & chemical products between them accounted for 26.2% of employment.

In metropolitan areas the leading industries were Metal products, Machinery and parts except electrical and Paper products & printing (total share being 33.6%).

2.7 STATE-WISE EMPLOYMENT DISTRIBUTION

Tamil Nadu (14.5%) made the maximum contribution to employment.

This was followed by Maharashtra (9.7%), Uttar Pradesh (9.5%) and West Bengal (8.5%) the total share being 27.7%.

Gujarat (7.6%), Andhra Pradesh (7.5%), Karnataka (6.7%) and Punjab (5.6%) together accounted for another 27.4%.

Per unit employment was high - 17, 16 and 14 respectively - in Nagaland, Sikkim and Dadra & Nagar Haveli.

It was 12 in Maharashtra, Tripura and Delhi.

Madhya Pradesh had the lowest figure of 2. In all other cases it was around the average of 6.

2.8 OPPORTUNITY

The opportunities in the small-scale sector are enormous due to the following factors:

- Less Capital Intensive
- Extensive Promotion & Support by Government
- Reservation for Exclusive Manufacture by small scale sector
- Project Profiles
- Funding - Finance & Subsidies
- Machinery Procurement
- Raw Material Procurement

- Manpower Training
- Technical & Managerial skills
- Tooling & Testing support
- Reservation for Exclusive Purchase by Government
- Export Promotion
- Growth in demand in the domestic market size due to overall economic growth
- Increasing Export Potential for Indian products
- Growth in Requirements for ancillary units due to the increase in number of Greenfield units coming up in the large scale sector. Small industry sector has performed exceedingly well and enabled our country to achieve a wide measure of industrial growth and diversification.

By its less capital intensive and high labour absorption nature, SSI sector has made significant contributions to employment generation and also to rural industrialization. This sector is ideally suited to build on the strengths of our traditional skills and knowledge, by infusion of technologies, capital and innovative marketing practices. This is the opportune time to set up projects in the small-scale sector. It may be said that the outlook is positive, indeed promising, given some safeguards. This expectation is based on an essential feature of the Indian industry and the demand structures. The diversity in production systems and demand structures will ensure long term co-existence of many layers of demand for consumer products / technologies / processes. There will be flourishing and well grounded markets for the same product/process, differentiated by quality, value added and sophistication.

This characteristic of the Indian economy will allow complementary existence for various diverse types of units.

However, under the present policy, Government has shifted its protective role and assuming supportive and promotional role for small scale enterprises. The sector can do wonderful, provided the inherent inadequacies in the system i.e. in the areas of finance, technology upgradation and market development assistance are given due attention, which will enable the SSI Sector towards full capacity utilization.

Table: - 2.6 Micro and Small Industries

Sr. No	District	Micro			Small		
		Unit Regd	Invest.	Employ	Unit Regd	Invest.	Employ
1	Ahmedabad	906	21522	9156	267	34326	8417
2	Amreli	1	50	5	6	887	95
3	Anand	135	2196	1293	64	7901	2169
4	Banaskantha	24	1056	158	53	11809	837
5	Bharuch	139	4476	2249	180	26226	4655
6	Bhavnagar	160	3005	2232	76	12777	2514
7	Dahod	59	347	277	7	663	85
8	Dang	0	0	0	0	0	0

9	Gandhinagar	166	15527	2110	147	31480	5985
10	Jamnagar	170	2320	1457	35	6255	1271
11	Junagadh	62	940	625	29	3942	1647
12	Kachchh	5	91	49	4	1187	166
13	Kheda	105	1759	913	53	6426	1914
14	Mehsana	132	3625	1322	103	17427	3128
15	Narmada	4	235	42	0	0	0
16	Navsari	32	499	259	12	1151	292
17	Panchmahal	25	431	350	10	2963	1127
18	Patan	17	370	156	11	2517	231
19	Porbandar	6	48	33	1	288	152
20	Rajkot	683	16171	5745	300	61841	8895

21	Sabarkantha	45	1436	425	39	5390.55	1052
22	Surat	1787	45487	15559	598	63428	12121
23	Surendranag	118	3743	1233	28	5623	874
24	Vadodara	362	9507	4273	343	46994	8914
25	Valsad	341	6753	4634	194	36628	8290
Total		5484	141595	54555	2560	388130	74831

Table: - 2.7 Medium Industries

Sr. No	District	Medium		
		Unit Regd	Investment	Employment
1	Ahmedabad	5	4223	419
2	Amreli	2	1092	83
3	Anand	2	1829	440
4	Banaskantha	0	0	0
5	Bharuch	6	4724	713
6	Bhavnagar	6	5388	1251
7	Dahod	0	0	0
8	Dang	0	0	0

9	Gandhinagar	7	6125	506
10	Jamnagar	1	1416	36
11	Junagadh	2	1188	752
12	Kachchh	0	0	0
13	Kheda	0	0	0
14	Mehsana	13	10581	1264
15	Narmada	0	0	0
16	Navsari	0	0	0
17	Panchmahal	2	1577	403
18	Patan	0	0	0
19	Porbandar	0	0	0
20	Rajkot	10	8767	927

21	Sabarkantha	0	0	0
22	Surat	27	21190	1120
23	Surendranagar	2	1395	156
24	Vadodara	10	8062	1212
25	Valsad	14	12999	1263
Total		109	90558	10545

Micro, Small and Medium Industries data from dated **02/10/2006 to 30/09/2007**

2.9 BUSINESS ENVIORNMENT

India has a mixed economy, with the government-owned public sector and the private sector playing active roles. The public sector has traditionally been dominant in infrastructure and in basic industries, while the private sector has played an important role in all other sectors.

Until a few years ago, the government exercised considerable control over the private sector through licensing for additional manufacturing capacity; control over imports of capital, raw material, technology and capital goods;

and allocation of basic raw material. While the liberalization process began a decade ago, it was in 1991 that it gathered momentum and was set out in the Industrial Policy.

India is world's largest democracy & among the strongest emerging markets in all business field. India now is a liberalized economy with 1.5 billion people with 300 million in the middle class bracket. We have well matured financial and securities market and time-tested judicial systems.

India is also a WTO member committed to providing opportunity to the global market. The Indian Government is constantly undertaking reforms in every sector with Infrastructure Sector receiving Government's fullest attention. India now permits foreign investment virtually in every sector of the economy. Majority foreign equity, even upto 100 per cent in some sectors, is encouraged and special investment incentives are provided in areas such as power, hydrocarbons, softwares, electronics and export oriented undertakings.

Foreign investment up to 50, 51, 74 and 100 percent in priority industries/activities, is eligible for automatic approval by the RBI. Automatic approval is also available for holding equity up to 51 per cent in trading companies engaged primarily in export activities. In addition, 100 % Export Oriented Units (EOUs) and units set up in designated Export Processing Zones (EPZs) are eligible for automatic approval provided they satisfy stipulated criteria. Foreign technology agreements are also eligible for automatic approvals within certain limits. India has 5 major metropolitan

urban centers growing @ 2.1 % p.a India's urban population is 218 million as of 2002, and expected to be 500 million by 2012:

The Union Government has introduced various financial incentives for investments in core and infrastructure sectors as also high priority industries such as information technology and through specific schemes such as Growth Centre Schemes, Electronic Hardware Technology Park (EHTP), the Transport Subsidy Schemes, the New Industrial Policy for the North Eastern States, Software Technology Park (STP), Export Promotion Zones (EPZs), Special Economic Zones (SEZs), etc.

Foreign direct investment is freely allowed in all sectors including the services sector, except where the existing and the notified sectoral policy does not permit FDI beyond a ceiling Virtually FDI for all items / activities can be brought in through the automatic route under powers delegated to the Reserve Bank of India (RBI), and for remaining items / activities through Government approval. Government approvals are accorded on the recommendation of the Foreign Investment Promotion Board (FIPB).

The earlier preoccupation with equality in income distribution has been welcomed by industry, some Indian businesses have asked for time to be able to compete with foreign investment.

2.10 BUSINESS INCENTIVES

- The role of the private sector and foreign investment in the Indian economy is increasing.
- The rupee is now convertible on the current account, and exchange rates are market-determined.
- There has been rapid progress in implementing government commitment to the deregulation process.
- Industrial policy emphasizes boosting economic growth through encouraging the generation of income and wealth.
- The vast and growing middle-class population provides a large domestic market.
- Skilled manpower and professional managers are available at moderate cost.
- Capital markets, the banking infrastructure and the financial services sector are well developed.

2.11 INVESTMENT

Table: - 2.8 IEMs - Gujarat and other States

Sr. No	State	Nos.	%Share	Investment (Rs.Cr)	%Share
1	Gujarat	8796	11.80	517581	12.57
2	Maharashtra	13472	18.08	449408	10.91
3	Uttar Pradesh	6388	8.57	176464	4.29
4	Andhra Pradesh	5351	7.18	325662	7.91
5	Tamil Nadu	6436	8.64	184370	4.48
6	Karnataka	3067	4.12	335246	8.14
7	Chattisgarh	2037	2.73	514074	12.48
8	All India	74525	100	4117651	100

- Updated on Aug 31, 2008
- Source - <http://ic.gujarat.gov.in/indus-stat/IEM2.htm>

Table: - 2.9 LOIs - Gujarat and other States (August 1991 to June 2008)

Sr. No	State	Nos.	%Share	Investment (Rs.Cr)	%Share
1	Gujarat	468	10.64	23404	18.01
2	Maharashtra	590	13.44	18775	14.45
3	Uttar Pradesh	367	8.40	9861	7.55
4	Madhya Pradesh	147	3.35	3274	2.52
5	Andhra Pradesh	519	11.82	15076	11.60
6	Tamil Nadu	861	19.61	13837	10.65
7	Karnataka	274	6.25	10516	8.10
8	All India	4391	100	129937	100

- Updated on Aug 31, 2008
- Source - <http://ic.gujarat.gov.in/indus-stat/LOI.htm>

Table: - 2.10 EOUs - Gujarat and other States (Aug 1991 to Dec 2003)

Sr. No	State	Nos.	%Share	Investment (Rs. in Cr)	%Share
1	Gujarat	509	11.95	8627	3.66
2	Maharashtra	607	14.25	8149	3.46
3	Uttar Pradesh	229	5.37	16839	7.15
4	Madhya Pradesh	124	2.91	9024	3.83
5	Andhra Pradesh	458	10.75	42440	18.01
6	Tamil Nadu	676	15.86	61199	25.97
7	Karnataka	473	11.10	58397	24.78
8	All India	4261	100	235632	100

- Updated on Aug 31, 2008
- Source - <http://ic.gujarat.gov.in/indus-stat/EOU.htm>

2.12 EXPORT

SSI Sector plays a major role in India's present export performance. 45%-50% of the Indian Exports is contributed by SSI Sector. Direct exports from the SSI Sector account for nearly 35% of total exports. Besides direct exports, it is estimated that small-scale industrial units contribute around 15% to exports indirectly. This takes place through merchant exporters, trading houses and export houses. They may also be in the form of export orders from large units or the production of parts and components for use for finished exportable goods.

It would surprise many to know that non-traditional products account for more than 95% of the SSI exports.

The exports from SSI sector have been clocking excellent growth rates in this decade. It has been mostly fuelled by the performance of garments, leather and gems and jewellery units from this sector.

The product groups where the SSI sector dominates in exports, are sports goods, readymade garments, woollen garments and knitwear, plastic products, processed food and leather products.

The SSI sector is reorienting its export strategy towards the new trade regime being ushered in by the WTO.

Table: - 2.11 Growth of SSI Exports

Year	Total Exports	Exports from SSI	Percentage Share
1951-52	716	Negligible	-
1961-62	660	Negligible	-
1971-72	1608	155	9.6
1976-77	5142	766	14.9
1981-82	7809	2071	26.5
1986-87	12567	3644	29.0
1991-92	44040	13883	31.5
1992-93	53688	17785	33.1
1993-94	69547	25307	36.4
1994-95	82674	29068	35.1
1995-96	106353	36470	34.2
1996-97	118817	39249	33.4
1997-98	126286.00	44442.18	35.19
1998-99	141603.53	48979.23	34.59
1999-00	159561.00	54200.47	33.97
2000-01	202509.7	69796.5	34.47
2001-02	207745.56	71243.99	34.29
2002-03	252789.97	86012.52	34.03

2.13 REFERENCES

- Aggrawal N.K. Management of working capital, Sterling publishers (P) Ltd., New-Delhi, 1983.
- Aggrawal N.P. Analysis of financial statement, National publishing house, New-Delhi, 1981.
- Backman T.N. Credit and Collection management & Theory, Mc.Graw Hills, New York, 1962.
- Bhalla P.N. Cash management in S.T.D., Lok-udyog Vol. VI No.8. (Nov.1972)
- Chadda R.S. Inventory Management in India, Allied publishers, Bombay, 1971.
- Chawla S.K. Working capital management – A practical approach
- Greig, Cuthbert Commercial credit and accounts collection, The furniture records, London.
- Leslie R. Harward Working capital – its management and control, Mc Donald and evans Ltd, London.
- Marting John Control of working capital.
- Mishra R.K. Working capital management, Somaiya publication (P) Ltd, Bombay.
- Norman E. Managing company cash.
- Pradhan R.S. Management of working capital.
- Rajan N. Material management in public enterprises.
- www.indiastat.com

CHAPTER – 3

CHAPTER 3
REVIEW OF LITERATURE

3.1 Review of existing literature

3.2 References

3.1 REVIEW OF EXISTING LITERATURE

A significant portion of financial research is concerned with the management of working capital. This issue has been extensively investigated at both conceptual and empirical levels.

Prasad (2001) conducted a research study on the working capital management in paper industry. His sample consisted of 21 paper mills from large, medium and small scale for a period of 10 years. He reported that the chief executives properly recognized the role of efficient use of working capital in liquidity and profitability, but in practice they could not achieve it. The study also reveals that 50% of the executives followed budgetary method in planning working capital and working capital management was inefficient due to sub-optimum utilisation of working capital.

Sarvanan (2001) made a study on working capital management in ten selected non-banking financial companies. For this he employed several statistical tools on different ratios to examine the effective management of working capital. He concluded that the sample firms had placed more importance upon the liquidity aspect compared to that of the profitability.

Dulta (2001) observed that the various component of working capital of HPMC had not been used efficiently and net working capital position had worsened continuously during the period of the study.

Chundawat & Bhanawat (2000) analysed the working capital management practices in IDBI assisted tube and tyre companies for the period of the

study by using some relevant ratios and concluded that the working capital management of IDBI assisted companies was more effective than the industry as a whole.

Srivastav & Yadav (1986) developed a multiple discriminate model in determining the effectiveness of working capital management using four ratios and a sample test of 40 textile companies of which 20 not effective and 20 effective, they empirically found that their model correctly classified 95 percent of the companies in the sample.

Prof. (Dr) N.M.Khandelwal (1974) development a thesis on working capital management of small scale industries of jodhpur industrial estate. Undr this study he has taken 40 units about 25% of the universe was selected on the basis of purposing sampling. The balanced representation of various industry groups and possibility of obtaining the required information were the major criteria for selecting a unit as a part of the sample.

Though accounting ratios played a very important role in most of the above studies, but a choice of ratios or group of ratios is often a difficult task due to the absence of a proper theory of ratio analysis (Bhattacharya, 1997). To overcome this problem he developed an alternative ratio model for the measurement and monitoring the efficiency of working capital management.

A number of studies on efficiency of SSIs in India were undertaken. Among the interesting ones were Dhar and Jydall (1961); Hajra (1965); Sandesara (1966 and 1969); Mehta (1969); Bhavani (1980 and 1991); Goldar (1985 and 1988); Little, Mazumdar and Page (1987) and Ramaswamy (1990).

Most of the earlier studies used the partial productivity ratios for a measure of the relative efficiency of SSIs.

The literature on the relationship between environment and small scale industries in developing countries is very limited. Most of the references reviewed herein have been sponsored by international cooperation institutions, within the framework of cooperation programs.

As part of the UNDP/WB/UNCHS urban management programme, and initiating the hazardous waste management for small scale industries.

The author summarises a series of cases in cities around the world where small scale industries generates hazardous wastes and dispose them in an uncontrolled manner. However, having made a through review of the existing literature on the subject, this document shows that little is known, in quantitative terms, on the relative environment impact of hazardous wastes from small scale industries, with respect to large scale industries. Hence, environmental pollution observed in the developing world cannot be attributed to small scale industries, because most of these countries still have little or no industries waste control.

According to Kent, there are three parameters which are useful in assessing the impact of small scale industries on the environment:

1. The types of economic activities in which small enterprises are involved.
2. The level of output of small firms, especially in relation to large firms.

3. The level of environmental degradation that is associated with each unit of output of small enterprises, especially in relation to large firms.

While in people's minds, industrial pollution is mainly contributed by large primary and conversion industries, indeed it is still not appreciated that the bulk of pollution in urban areas is the result of dispersed medium/small size industries which in many regions comprises the major part of manufacturing activities.

However, relocation of industries is not always economically feasible. Often, the cost of relocation will exceed original investment. Small scale industries will only accept relocation if adequate services and financial assistance are provided. Furthermore, relocation may not be favoured since it raises the issue of transportation to and from the industrial estate, a complicating factor in major urban areas.

A case of a small scale industry with 20 employees in Hong Kong shows that it is possible for industry to absorb the cost of effluent treatment when coupled with process optimization and improved management measures.

According to Hamza and Kent, research and development must be carried out in developing economically profitable cleaner production and abatement technologies, as well as the effect of small scale industries on health, society and the environment.

Other recommendations found in the literature include establishment of an information center in order to collect and disseminate of adequate legislation to control the business of other side.

3.2 REFERENCES

- Aggrawal N.K. Management of working capital, Sterling publishers (P) Ltd., New-Delhi, 1983.
- Aggrawal N.P. Analysis of financial statement, National publishing house, New-Delhi, 1981.
- Backman T.N. Credit and Collection management & Theory, Mc.Graw Hills, New York, 1962.
- Bhalla P.N. Cash management in S.T.D., Lok-udyog Vol. VI No.8. (Nov.1972)
- Chadda R.S. Inventory Management in India, Allied publishers, Bombay, 1971.
- Chawla S.K. Working capital management – A practical approach
- Greig, Cuthbert Commercial credit and accounts collection, the furniture records, London.
- Leslie R. Harward Working capital – its management and control, Mc Donald and Evans Ltd, London.
- Marting John Control of working capital.
- Mishra R.K. Working capital management, Somaiya publication (P) Ltd, Bombay.
- Norman E. Managing company cash.
- Pradhan R.S. Management of working capital.
- Rajan N. Material management in public enterprises.

CHAPTER – 4

CHAPTER 4

RESEARCH METHODOLOGY

4.1 Introduction

4.2 Methodology

4.3 Research design

4.4 Identification of problems

4.5 Significance of the study

4.6 Universe of the study

4.7 Objectives of the study

4.8 Hypothesis of the study

4.9 Limitations of the study

4.10 References

4.1 INTRODUCTION

For most of the last century, firms in certain industries, especially public utility industries such as energy, transportation, and communications, have been public owned or regulated to alleviate public fears that such firms would use market power to raise prices artificially. Many of these industries exhibited scale economies, which meant that a single firm would have the lowest cost of production and could monopolize the industry. Hence, these industries were treated as natural monopolies and regulated to control entry, prices, and profits.

Energy privatization has been part and parcel of a recent trend, which has placed greater reliance on market forces and less dependence in government in the allocation of resources. For many nations, their formerly state owned energy companies have been among the largest of companies to be privatized. Energy companies that have been privatized include some of world's largest petroleum companies based in the industrialized nations. Global giants, such as British Petroleum, British Gas, ENI (Italy), Petrol(Canada), Repsol (Spain), and TOTAL (France), have all undergone transitions from state – owned to significant degree of private ownership.

Although privatization efforts differ substantially from country to country, in general, nations have privatized state – owned energy industries to achieve one or more of several objectives.

These objectives include:

1. Raising revenue for the state;
2. Raising investment capital for the industry or company

- being privatized;
3. Reducing government's role in the economy;
 4. Promoting wider share ownership;
 5. Increasing efficiency;
 6. Introducing greater competition; and
 7. Exposing firms to market discipline.

The study is based on primary and secondary data. Secondary data extracted from various books, magazines, news paper, journals, websites and company sources. Unstructured personnel interviews would be conducted in order to check the reliability of secondary data. There are various tools and a technique has been used for the examination of the financial position used by the small scale industry, such as tabulation, charts, etc. The present study of the small scale industries of Gujarat state is based on primary and secondary data. This information is supplemented by various other journals. And the primary data has been collected through the questionnaires.

4.2 METHODOLOGY

For the financial analysis, each units first of all liquidity position has been tested through two ratios, current ratio and quick ratio with its graphical representation. Every unit's working capital efficiency level has been tested through debtor's turnover ratio and Days Sales outstanding as well as Inventory turnover ratio and days stock outstanding. Their graphical representation has been also done with its ideal financial leverage line.

After testing every industries liquidity, working capital efficiency level and financial leverage position, their performance has been compared through ratio analysis. There around 19 ratios have compared of every units. There charts have been also presented. Further, a hypothesis have tested for the ratio that whether there is significant difference in the ratio trend for the period of study for the units under taken for the study. If the hypothesis is accepted there would no significant difference in the ratio of units and if it is rejected, there would be significant difference in the units for the period of study. Thus there is comparison analysis and hypothesis testing of around 19 ratios.

Thereafter, there are correlation matrixes of each unit, whereas 19 ratios have been correlates with each other and thus a table of correlation matrix has been calculated. The table depicts the relationship among the various ratio of profitability, asset management and liquidity.

4.3 RESEARCH DESIGN

Process of Financial Evaluation

Financial appraisal is generally directed towards evaluating the liquidity, stability and profitability of a concern. The financial appraisal of a concern involves the following steps:

- Collection of financial data
- Classification and tabulation of financial data
- Application of appropriate techniques

Collection of Financial Data:

Collection of financial data is the first step in evaluating the performance of an enterprise.

According to R. I. Levin, "A collection of data is called a data set, and a single observation a data point." Generally the sources used to collect the information are broadly classified into two parts: (a) Primary data and (b) Secondary data.

(a) Primary Data:

"The term primary data refers to the statistical material which the investigator originates for the purpose of the inquiry in hand".

In the words of John C. G. 'Boot and Edwin in B. Cox: "When the data used in an analysis are specifically created for that analysis, they are referred to as primary data."

(b) Secondary Data:

The term secondary data refers to the statistical material which is not originated by the investigator himself, but which he obtained from someone else's records."

Similarly, the words of Boot and Cox, "Secondary data are which were not gathered specifically to meet the needs of the problem at hand." Secondary data can be obtained from:

- Government
- Semi-government bodies
- Trade associations
- Trade journals
- Periodicals
- Magazines & Newspapers and
- Websites

Classification and Tabulation of Data:

The next step in the process of financial appraisal is to classify and tabulated the financial data.

Hersic and Pluck observe: “The statistician’s first task is to reduce and simplify the detail into such a form that the salient features may be brought out, while still facilitating the interpretation of the assembled data. This procedure is known as classification and tabulation the data.” Financial data, which have been obtained from secondary data sources, are classified and tabulated in such a manner that the results may be easily interpreted.

An attempt has been made to evaluate the working capital position of the selected small scale industries of Gujarat state.

During the process of research, the researcher has used various statistical tools for the measurement of working capital position like ANOVA analysis and Correlation matrix for the purpose of finding the position of the industries.

4.4 IDENTIFICATION OF PROBLEMS

It plays a vital role in the development of economics of the enterprise as well as country. So, the researcher would like to conduct the research on working capital of small scale industry. The main purpose of the study is to see the basic working capital scenario and what is the level of financial performance of the units undertaken the study.

In modern times a number of financial problems are faced by the industry and for effective and corrective solution of all problems, some analytical study of the financial performance must be there.

This is a doctoral research agenda on “Working capital management in selected small scale industries of Gujarat state”.

Analytical study of financial performance turns out to be very significant and important for the financial managers, to analyze with various financial aspects. The industry uses various indicators for measuring its financial performance. This indicates average of great importance and tells us the true financial position of the industry.

Financial analysis report the efficiency with which the funds entrusted to the management has been deployed. This attempts to furnish the relevant information for its various users like creditors, bankers, financial institutions, equity share holders, suppliers, consumers, government, etc for their decision making. These indications help in identifying the strength and weaknesses of the industry and suggestions.

Financial analyst depends primarily on financial statements to diagnose financial performance. Because as long as accounting biases remain more or less the same overtime meaningful inferences can be drawn by examining trend and raw data in financial ratios. As well as similar biases characterize various firms in the same industry, inter firm comparisons are useful.

If properly analyzed and interpreted, financial statements can provide valuable insights into a firm's performance. Analysis of financial statements is of interest of lenders, investors, security analyst, managers, and others. Financial statement analysis may be done for a variety of purposes which may range from a simply analysis of short-term liquidity position of the firm to a comprehensive assessment of the strength and weaknesses of the firm in various aspects. It is helpful in assessing corporate excellence judging creditworthiness, forecasting bond writing, predicating bankruptcy and assessing market risk.

An analysis of financial statement can highlight a company's strength and short comings. This information can be used by management to improve performance and by others to predicate future results. Financial analysis can be used to predicate how such strategic decisions as a sale of a division, major marketing program or expanding a plant are likely to affect future financial performance.

So, the main purpose of the research is to be helpful to take financial and managerial decisions by the external and internal stake holders.

4.5 SIGNIFICANCE OF THE STUDY

One can probably attribute a large number of business failures in recent years to the inability of financial managers to plan properly and control current assets and current liabilities of their respective firms. Shortages of funds for working capital as well as uncontrolled over-expansion of working capital have caused many businesses to fail and in less severe cases, have stunted their growth. Specially in small firms, working capital management may be the factor that decides success or failure; in large firms, efficient working capital management can significantly affect the firm's risk, return and share price.

4.6 UNIVERSE OF THE STUDY

The Universe of the study is all the leading industries which are working in small scale sector. Researcher has decided to take all the units of the small scale sector for his research purpose. But after this procedure researcher has take selected small scale industries of Gujarat state i.e. 160 industries from the Gujarat state.

The following small scale industries which give the pictures of Gujarat have been taken for the study.

1. Engineering industries
2. Plastics industries
3. Chemical industries
4. Textile industries
5. Furniture industries
6. Miscellaneous industries

4.7 OBJECTIVES OF THE STUDY

There are two important objectives of working capital: profitability and liquidity. Financial management cannot afford to stick to only one of these objectives. There should be a proper balance between the two so that one objective does not suffer at the expense of the other. However, the following are the objectives of the study.

- To study working capital position in the selected small scale industries located in Gujarat.
- To study the various components comprised on the working capital of small scale industries of Gujarat state.
- To study the sources of working capital used by the selected units.
- To study the comparison of working capital position and policies adopted by the selected small scale industries of Gujarat state – engineering, plastic, chemical, textile, furniture and miscellaneous.
- To study the ways to increase the efficiency of the working capital of the selected units.

4.8 HYPOTHESIS OF THE STUDY

Ho: There would be no significant difference in the accepted components of working capital of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the accepted components of working capital of selected small scale industries of Gujarat state during the period of the study.

Ho: There would be no significant difference in the determination of working capital of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the determination of working capital of selected small scale industries of Gujarat state during the period of the study.

Ho: There would be no significant difference in the turnover of current assets of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the turnover of current assets of selected small scale industries of Gujarat state during the period of the study.

Ho: There would be no significant difference in the rate of return on current assets of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the rate of return on current assets of selected small scale industries of Gujarat state during the period of the study.

Ho: There would be no significant difference in the percentage of inventory to working capital of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the percentage of inventory to working capital of selected small scale industries of Gujarat state during the period of the study.

Ho: There would be no significant difference in the percentage of receivables to working capital of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the percentage of receivables to working capital of selected small scale industries of Gujarat state during the period of the study.

Ho: There would be no significant difference in the percentage of cash to working capital of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the percentage of cash to working capital of selected small scale industries of Gujarat state during the period of the study.

Ho: There would be no significant difference in the gross profit on capital employed in selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the gross profit on capital employed in selected small scale industries of Gujarat state during the period of the study.

Ho: There would be no significant difference in the net profit to net worth in selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the net profit to net worth in selected small scale industries of Gujarat state during the period of the study.

Ho: There would be no significant difference in the current ratio of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the current ratio of selected small scale industries of Gujarat state during the period of the study.

Ho: There would be no significant difference in the quick ratio of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the quick ratio of selected small scale industries of Gujarat state during the period of the study.

Ho: There would be no significant difference in the net cash flows to current liabilities ratio of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the net cash flows to current liabilities ratio of selected small scale industries of Gujarat state during the period of the study.

Ho: There would be no significant difference in the cash to current assets ratio of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the cash to current assets ratio of selected small scale industries of Gujarat state during the period of the study.

Ho: There would be no significant difference in the cash turnover in sales ratio of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the cash turnover in sales ratio of selected small scale industries of Gujarat state during the period of the study.

Ho: There would be no significant difference in the liquid funds to current liabilities ratio of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the liquid funds to current liabilities ratio of selected small scale industries of Gujarat state during the period of the study.

Ho: There would be no significant difference in the total receivables to credit sales of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the total receivables to credit sales of selected small scale industries of Gujarat state during the period of the study.

Ho: There would be no significant difference in the average collection period of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the average collection period of selected small scale industries of Gujarat state during the period of the study.

Ho: There would be no significant difference in the ratio of bad debts to receivables in selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the ratio of bad debts to receivables in selected small scale industries of Gujarat state during the period of the study.

Ho: There would be no significant difference in the extent of raw material to aggregate inventory in selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the extent of raw material to aggregate inventory in selected small scale industries of Gujarat state during the period of the study.

Ho: There would be no significant difference in the extent of semi-finished goods to aggregate inventory in selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the extent of semi-finished goods to aggregate inventory in selected small scale industries of Gujarat state during the period of the study.

Ho: There would be no significant difference in the extent of finished goods to aggregate inventory in selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the extent of finished goods to aggregate inventory in selected small scale industries of Gujarat state during the period of the study.

4.9 LIMITATIONS OF THE STUDY

- The study is only of selected units of SSI. Hence, findings cannot be generalized to whole industry.
- The performance of working capital management is also affected by other factors like inflation, market change etc. have not been covered by this study.
- There are different methods to measure efficiency, effectiveness and profitability
- The present study is based on ratio analysis and it has its own limitation that applies to this study also.

4.10 REFERENCES

- C. R. Kothari - Research Methodology - Wishwa Prakashan – (1998)
- D K Bhattacharya - Research Methodology – Excel Books – 1st Edition (2005)
- Richard I Levin, & David S. Rubin - Statistics for Management (7th edition) - Prentice Hall of India Pvt. Ltd. New Delhi (2003)
- S. P. Gupta – Statistical Method – Sultanchand & Sons – Educational Publishers – New Delhi – (2001)
- S.P. Gupta & M. P. Gupta - Business Statistics (10th Edition) – Sultanchand & Sons – New Delhi - (2005)
- Stevenson, William j., Harper & Row - Business statistics – (1978)

CHAPTER – 5

CHAPTER 5

WORKING CAPITAL MANAGEMENT PRACTICES AND WORKING FINANCE IN SMALL SCALE INDUSTRIES

- 5.1 Introduction**
- 5.2 Management of working capital: Personnel**
- 5.3 Bases for determination of working capital**
- 5.4 Determination of size of working capital requirement**
- 5.5 Turnover of current assets**
- 5.6 Profitability of current assets**
- 5.7 Management of inventories**
- 5.8 Management of receivables**
- 5.9 Management of cash**
- 5.10 Financing of working capital**
- 5.11 Principles of financing**
- 5.12 Period of review of working capital**
- 5.13 Assessment of working capital**
- 5.14 Control methods used for working capital management**
- 5.15 Shortage of working capital**
- 5.16 Meeting shortage of working capital**
- 5.17 Size of working capital**
- 5.18 Working finance in terms of month's cost of production**
- 5.19 Working finance in terms of month's avg. sales turnover**
- 5.20 Terms of purchase and sale**
- 5.21 Profitability of the selected SSI**
- 5.22 Sources of working finance**
- 5.23 Rate of interest**
- 5.24 Trade credit**
- 5.25 Methods of credit purchase**
- 5.26 Credit period allowed by the suppliers**
- 5.27 Discount facilities given by the suppliers**
- 5.28 Discount facilities availed by the units**
- 5.29 References**

(A) WORKING CAPITAL MANAGEMENT PRACTICES

5.1 INTRODUCTION

The way of looking at the working capital management in small scale industries is different from the manner in which management of working capital is handled by large scale industries.

- **Nature**

The nature of the need for the fund is different in both types of industries. Small units adjust their need with the resources. They will not expand and take new business if resources do not permit. This reduces the pressure on them for giving high importance to working capital management. All their practices are influenced by this outlook. Large scale units are compelled to adjust working capital with business opportunities. Whenever good opportunities come they find resources to take advantage of them. This makes working capital management a matter of high significance for their success. The outlook of SSI is limited. They adjust acceptable business opportunity to their working capital conditions. They may not be able to do so and may face serious problems due to the operating conditions peculiar to small units. They cannot command supplier's credit in the way large firms do. If they remain slow payers, the suppliers may refuse credit or they may quote higher prices. Therefore, small firm must manage their working funds with great caution.

- **Capacity**

The capacity to raise funds from various sources of working capital is quite restricted in SSI. This forces them to adopt different practices from the large units.

- **External pressures**

The legal requirements and the commonly accepted financial relationships in the money market make large units handle working capital with great caution. The investors and financiers develop conventional ways of evaluating what is proper and the business units have to comply with them. Such compulsions are weak, if not absent, in case of small scale industries. So, this is the reason why the working capital management practices in small scale industries depend more on the personality of the owner than on the pressure of the money market.

Table: - 5.1

Accepted components of working capital

(No. of units)

WORKING CAPITAL COMPRISES	E	P	C	T	F	MIS	TOTAL
Cash, bills, and inventories	32	12	16	20	12	32	124
Cash, bills and inventories	4	0	0	0	4	4	12
Cash, bills, inventories and investment	4	4	8	0	4	4	24
Total	40	16	24	20	20	40	160

The above table shows the understanding of the concept of working capital components in the mind of small scale units of Gujarat state.

The above table shows that 4/5 units include cash, bills receivables and inventories in the working capital. 3 sector i.e. plastic, chemical and textile out of 6 do not include inventories in the working capital estimation. And others are includes cash, trade, debts, inventories and investment in the field of working capital. This view is a departure because the investments sometimes are in the nature of fixed assets.

Industry-wise analysis shows that all textile units hold the first view. About 30% units in the engineering, plastic, chemical, furniture and miscellaneous categories are holding second and third views regarding the inclusion of items in working capital. The units do not subscribe to the net working capital concept because they feel that current liabilities are the sources of financing the working capital.

It appears that accounting discipline on systematic classification is weak in SSI. The units excluding inventories or units including investments in working capital show that their conception as well as their treatment is not rational. However, it is encouraging that majority of the companies fall under cash, bills and inventories and follows the accepted classification.

Hypothesis

Ho: There would be no significant difference in the accepted components of working capital of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the accepted components of working capital of selected small scale industries of Gujarat state during the period of the study.

Table: - 5.1.1 ANOVA ANALYSIS
Accepted component of W.C.

Source of Variation	SS	df	MS	F	F crit
Between Groups	188.4444	5	37.68889	0.290411	3.105875
Within Groups	1557.333	12	129.7778		
Total	1745.778	17			

The above table indicates the calculated value of 'F'. The calculated value of 'F' is 0.290 which is less than the table value of 'F'. The table value of 'F' at 5% level of significance is 3.105. It indicated that the null hypothesis is accepted and alternative hypothesis is rejected. So, it indicates that there is no significant difference in the accepted components of working capital of selected small scale industries of Gujarat state.

5.2 MANAGEMENT OF WORKING CAPITAL: PERSONNEL

An attempt has been made to find out what who are managing working capital in SSI units and what is the degree of participation of various persons in this function. The results have been presented in the following table:

Table: - 5.2
Working capital managing personnel

MANAGED BY	NO. OF UNITS	%
Self	93	58
Manager	14	9
Accountant	17	11
Self with the help of manager or accountant	36	22
Total	160	100

The above table shows that 58% of the proprietor/partners themselves are looking after the management and follow of working capital. 22% of the units take up the help of manager and accountant in managing the working capital. 9% of the units take up the help of only manager and only 11% take up the help of the accountant.

It is interesting to find about the people who carry on the critical task of working capital management. This is a picture of centralization of working capital management in the owner. The reasons which could be drawn out at the interview indicate that (a) it is not so much a matter of affording the

qualified personnel; (b) it is mostly a matter of unwillingness to share this work with anyone – not even with the other members of the same family.

5.3 BASES FOR THE DETERMINATION OF WORKING CAPITAL

In the past, the owners used to invest their own funds in their small units, for working capital. But in the present times, they invest money for working capital on the basis of either production or past experience or combination of the both. The below table depicts the bases how the small scale units of Gujarat state are determining the working capital.

Table: - 5.3
Determination of working capital: Bases

(No. of units)

METHODS FOR DETERMINING W.C.	E	P	C	T	F	MIS	TOTAL
Past experience	02	04	00	03	00	07	16
Some rule of thumb	02	04	06	04	00	00	16
Based on production	20	00	12	10	16	28	86
No method applied	08	08	04	02	04	00	26
Any two or more methods of the above	08	00	02	01	00	05	16
Total	40	16	24	20	20	40	160

The above table shows that 60% of the units are determining the working capital on the basis of production and sales. Only 32 firms out of 160 are determining the working capital on the bases of past experience, or with rule of thumb. 16% of the units are not formally determining the working capital. 10% of the units are using the one or more bases for determining the working capital.

Industry-wise analysis shows that all chemical units are adopting the determination of working capital on production and sales. The units in plastic category are not following the production or sale base for determining the working capital in the selected small scale industries of Gujarat state.

It is clear that these units have developed a system of their own to determine the size of working capital using production or/and sales as the base indicates a rational approach. There appears to be a fair awareness of the need to look ahead and plan working capital.

Hypothesis

Ho: There would be no significant difference in the determination of working capital of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the determination of working capital of selected small scale industries of Gujarat state during the period of the study.

Table: - 5.3.1 ANOVA ANALYSIS
Determination of W.C.

Source of Variation	SS	df	MS	F	F crit
Between Groups	113.0667	5	22.61333	0.482161	2.620654
Within Groups	1125.6	24	46.9		
Total	1238.667	29			

The above table indicates the calculated value of 'F'. The calculated value of 'F' is 0.482 which is less than the table value of 'F'. The table value of 'F' at 5% level of significance is 2.620. It indicated that the null hypothesis is accepted and alternative hypothesis is rejected. So, it indicates that there is no significant difference in the determination of working capital of selected small scale industries of Gujarat state.

5.4 DETERMINATION OF SIZE OF WORKING CAPITAL REQUIREMENT

Further investigation in determination of working capital given in the below table which examines the manner in which small scale industries determine the size of working capital requirement.

Table: - 5.4
Determination of size of working capital requirement

(No. of units)

BASES	E	P	C	T	F	MIS	TOTAL
% of fixed capital	06	02	00	01	08	04	21
% of sales	14	06	10	16	08	20	74
% of production	12	00	12	03	00	16	43
Arbitrary method	08	08	02	00	04	00	22
Total	40	16	24	20	20	40	160

The above table reveals that more than 50% units of each industry group estimate the size of working capital the basis of production or sales. 21 units out of 160 units estimate their size of working capital on the basis of fixed capital. The method adopted by these units' shows their belief that there is a positive correlation between fixed capital and working capital. 14% of the units do not adopt any formal method for estimating the size of working capital.

The generally accepted practice is followed by majority of the units i.e. the size of working capital should bear a relationship with sales and production. It also shows that half of the remaining 25% did not care to build up any system, the other half found an easy method of relating the size of working capital as percentage of fixed capital.

Hypothesis

Ho: There would be no significant difference in the determination of size of working capital of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the determination of size of working capital of selected small scale industries of Gujarat state during the period of the study.

Table: - 5.4.1 ANOVA ANALYSIS
Determination of size of W.C.

Source of Variation	SS	df	MS	F	F crit
Between Groups	141.3333	5	28.26667	0.763964	2.772853
Within Groups	666	18	37		
Total	807.3333	23			

The above table indicates the calculated value of 'F'. The calculated value of 'F' is 0.763 which is less than the table value of 'F'. The table value of 'F' at 5% level of significance is 2.772. It indicated that the null hypothesis is accepted and alternative hypothesis is rejected. So, it indicates that there is no significant difference in the determination of size of working capital of selected small scale industries of Gujarat state.

5.5 TURNOVER OF CURRENT ASSETS

The turn over of current assets can be found out by following formula:

$$\text{Turnover of current assets} = \frac{\text{Cost of sales}}{\text{Current assets}}$$

Table: - 5.5

Turnover of current assets in 160 units from 2002-03 to 2006-07

(Times)

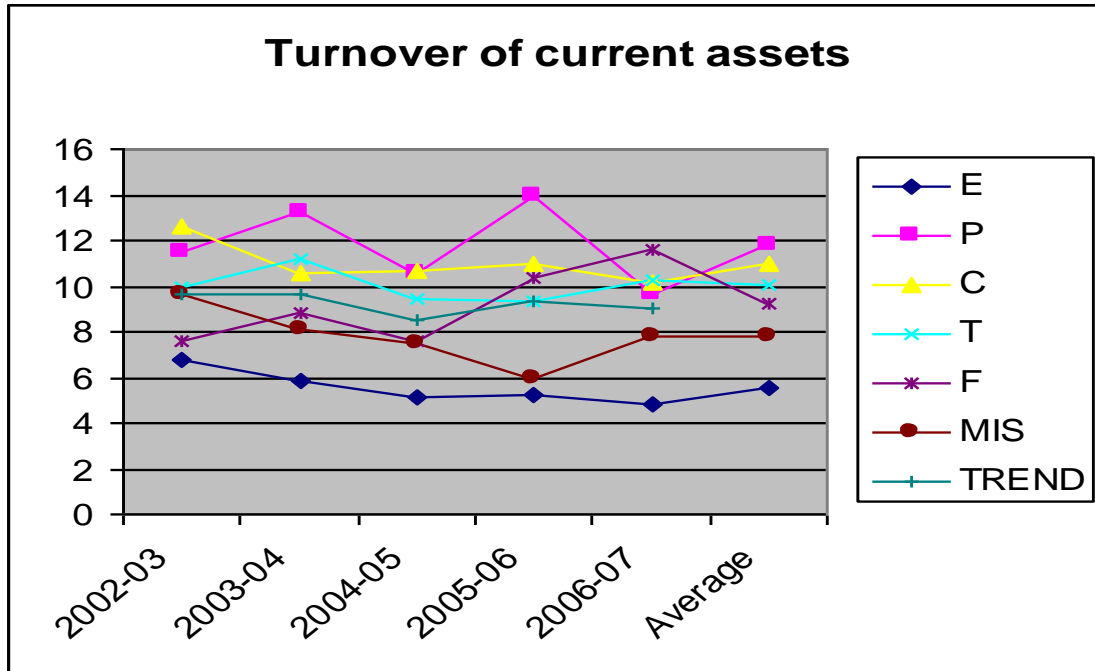
YEARS	E	P	C	T	F	MIS	TREND
2002-03	6.76	11.52	12.66	10.00	7.56	9.67	9.69
2003-04	5.89	13.25	10.55	11.22	8.85	8.10	9.64
2004-05	5.11	10.56	10.63	9.40	7.63	7.50	8.47
2005-06	5.22	13.96	11.00	9.33	10.33	5.90	9.29
2006-07	4.85	9.65	10.12	10.27	11.60	7.77	9.04
Average	5.57	11.79	10.99	10.04	9.19	7.79	

It is evident from the above table that the units in general had a high turnover rat of current assets over the period under study. The trend has decreased from 9.69 to 9.04 in 2006-07.

Industry-wise analysis shows that the rate of turnover of current assets has increased in textile and furniture units during period. The engineering,

plastic and chemical units showed a declining trend. The rate shown by the engineering was the lowest.

Figure: - 5.1



Hypothesis

Ho: There would be no significant difference in the turnover of current assets of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the turnover of current assets of selected small scale industries of Gujarat state during the period of the study.

Table: - 5.5.1 ANOVA ANALYSIS
Turnover of current assets

Source of Variation	SS	df	MS	F	F crit
Between Groups	129.0807	5	25.81615	15.03591	2.620654
Within Groups	41.2072	24	1.716967		
Total	170.2879	29			

The above table indicates the calculated value of 'F'. The calculated value of 'F' is 15.03 which is more than the table value of 'F'. The table value of 'F' at 5% level of significance is 2.620. It indicated that the null hypothesis is rejected and alternative hypothesis is accepted. So, it indicates that there is a significant difference in the turnover of current assets of selected small scale industries of Gujarat state.

5.6 PROFITABILITY OF CURRENT ASSETS

The position regarding utilisation of current assets in terms of rate of return on current assets employed is presented in below table:

The rate of net profit per turnover of current assets can be expressed as follows:

$$\frac{\text{Net profit}}{\text{Current assets}} \times \frac{\text{Current assets}}{\text{Cost of sales}} \times 100$$

Table: - 5.6
Rate of return on current assets

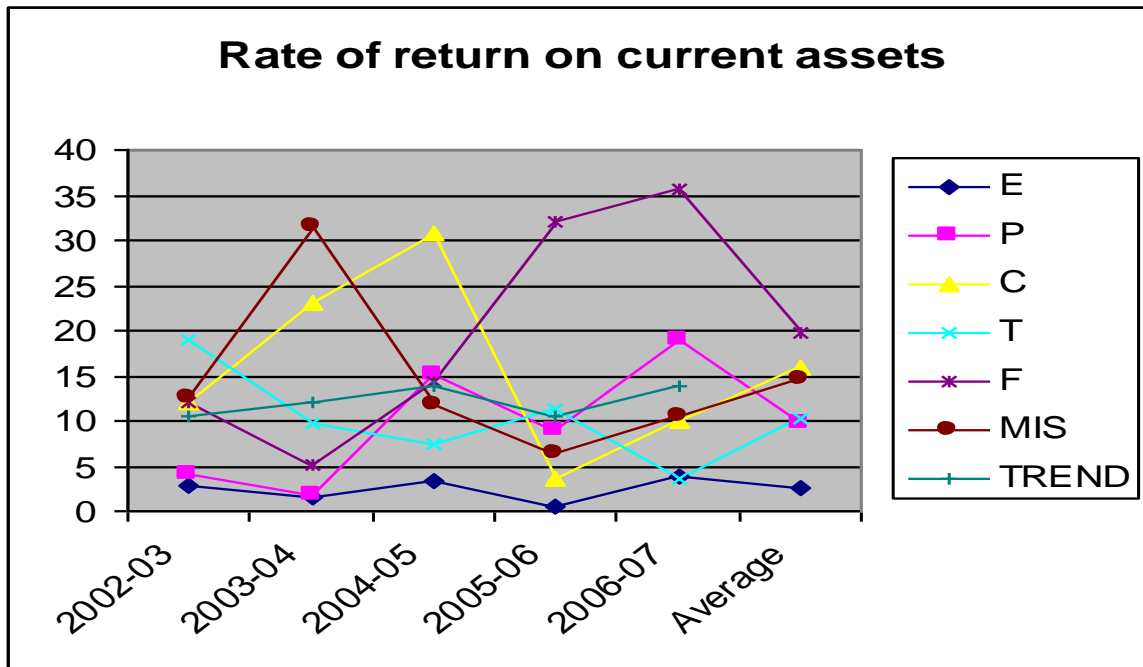
(Percentages)

YEARS	E	P	C	T	F	MIS	TREND
2002-03	2.93	4.11	12.00	18.90	11.95	12.45	10.39
2003-04	1.56	1.89	23.09	9.66	5.05	31.45	12.11
2004-05	3.33	15.20	30.65	7.50	14.25	11.85	13.79
2005-06	0.55	9.00	3.50	11.25	32.00	6.51	10.46
2006-07	3.88	18.90	9.95	3.50	35.60	10.63	13.74
Average	2.45	9.82	15.84	10.16	19.77	14.58	

The above table shows that the rate of net profit on current assets increased, over the period under study except 2005-06. The rate of increase was significant in 2003-04 as compared to 2002-03. The rate of net profit on current assets in 2005-06 was low because of higher amount of current assets and higher payments to labourers. These facts were gathered at the time of personal interview with the entrepreneurs. The cost of raw material was lower in 2005-06 which could increase the net profit on current assets. And the overall trend of the industry was increased from 10.39 to 13.74 in the year 2005-06. And the overall performance in furniture units was better because the average of the furniture units is 19.77 which is higher than other units.

An interesting feature emerges here. The rate of net profit per turnover of current assets continues to be less than a rupee per 100 rupees of cost of sales (cost of goods sold + selling and distribution expenses). This position is discouraging and puts heavy risk and responsibility on the businessman.

Figure: - 5.2



Hypothesis

Ho: There would be no significant difference in the rate of return on current assets of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the rate of return on current assets of selected small scale industries of Gujarat state during the period of the study.

Table: - 5.6.1 ANOVA ANALYSIS
Rate of return on current assets

Source of Variation	SS	df	MS	F	F crit
Between Groups	905.0936	5	181.0187	2.282168	2.620654
Within Groups	1903.65	24	79.31874		
Total	2808.743	29			

The above table indicates the calculated value of 'F'. The calculated value of 'F' is 2.282 which is less than the table value of 'F'. The table value of 'F' at 5% level of significance is 2.620. It indicated that the null hypothesis is accepted and alternative hypothesis is rejected. So, it indicates that there is no significant difference in the rate of return on current assets of selected small scale industries of Gujarat state.

More detailed investigations in working capital management were made in order to draw the clearer picture. This was done by examining the relationship between the various components of working capital and current assets under the following heads:

5.7 MANAGEMENT OF INVENTORIES

Although no definite norms can be fixed about the proportion of inventory to working capital yet too much blocking of funds in inventory is dangerous and reduce profitability. If the market price of such inventories goes below a certain limit, the solvency position will also worsen. According to Professor

R.A.Foulke, inventory in any business enterprise should not be more than 75% of the working capital.

The study of the inventory working capital relationship in small scale industries of Gujarat state has been shown in the below table:

The following formula is used to find out the percentage of inventory to working capital.

$$\frac{\text{Value of inventory at the end of the accounting year}}{\text{Net working capital at the end of the accounting year}} \times 100$$

Table: - 5.7
Percentage of inventory to working capital in 160 units during 2002-03 to 2006-07

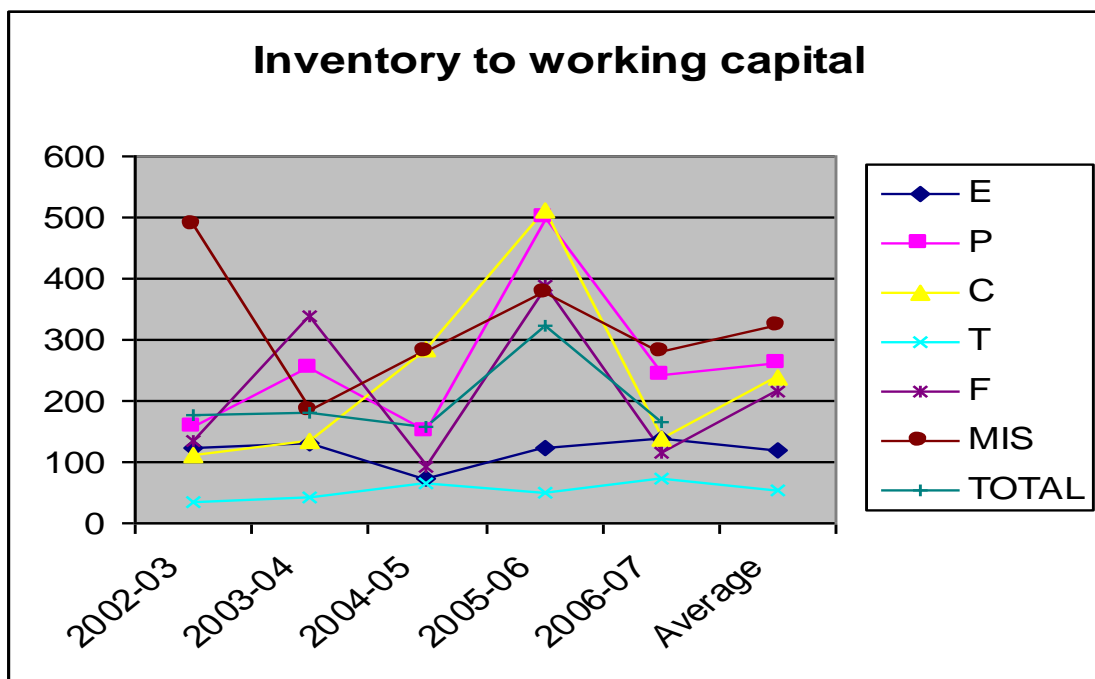
(Percentage)							
YEARS	E	P	C	T	F	MIS	TOTAL
2002-03	125.00	156.25	111.12	35.90	136.30	490.35	175.82
2003-04	130.85	253.99	134.00	42.15	338.40	185.45	180.81
2004-05	72.56	151.21	285.52	64.36	93.90	280.90	158.08
2005-06	123.60	498.33	513.00	50.85	388.75	375.42	324.99
2006-07	140.25	242.50	139.20	71.95	114.80	282.07	165.13
Average	118.45	260.46	236.57	53.04	214.43	322.84	

The total inventory was more than 165.13% of the net working capital over the period under study. The trend is on decrease.

Industry-wise, the percentage were 140.25% for engineering, 498.33% for plastic, 513% for chemical, 388.75% for furniture and 490.35% for miscellaneous units during the said period. The textile units were in comfortable position by having only 71.95% funds blocked in inventory.

The inference is clear that investment in inventories need better planning and tighter control for the purpose of improving the management of working capital.

Figure: - 5.3



Hypothesis

Ho: There would be no significant difference in the percentage of inventory to working capital of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the percentage of inventory to working capital of selected small scale industries of Gujarat state during the period of the study.

Table: - 5.7.1 ANOVA ANALYSIS
Percentage of inventory to working capital

Source of Variation	SS	df	MS	F	F crit
Between Groups	242653.5	5	48530.7	3.557172	2.620654
Within Groups	327433.3	24	13643.05		
Total	570086.8	29			

The above table indicates the calculated value of 'F'. The calculated value of 'F' is 3.557 which is more than the table value of 'F'. The table value of 'F' at 5% level of significance is 2.620. It indicated that the null hypothesis is rejected and alternative hypothesis is accepted. So, it indicates that there is a significant difference in the percentage of inventory to working capital of selected small scale industries of Gujarat state.

5.8 MANAGEMENT OF RECEIVABLES

The relationship between receivables and working capital in the units under study was higher in all the years. This is one reason why the units were keeping excessive size of working capital.

The percentage of receivables to working capital can be found by following formula:-

$$\frac{\text{Bills receivables and debtors at the end of the accounting year}}{\text{Net working capital at the end of the accounting year}} \times 100$$

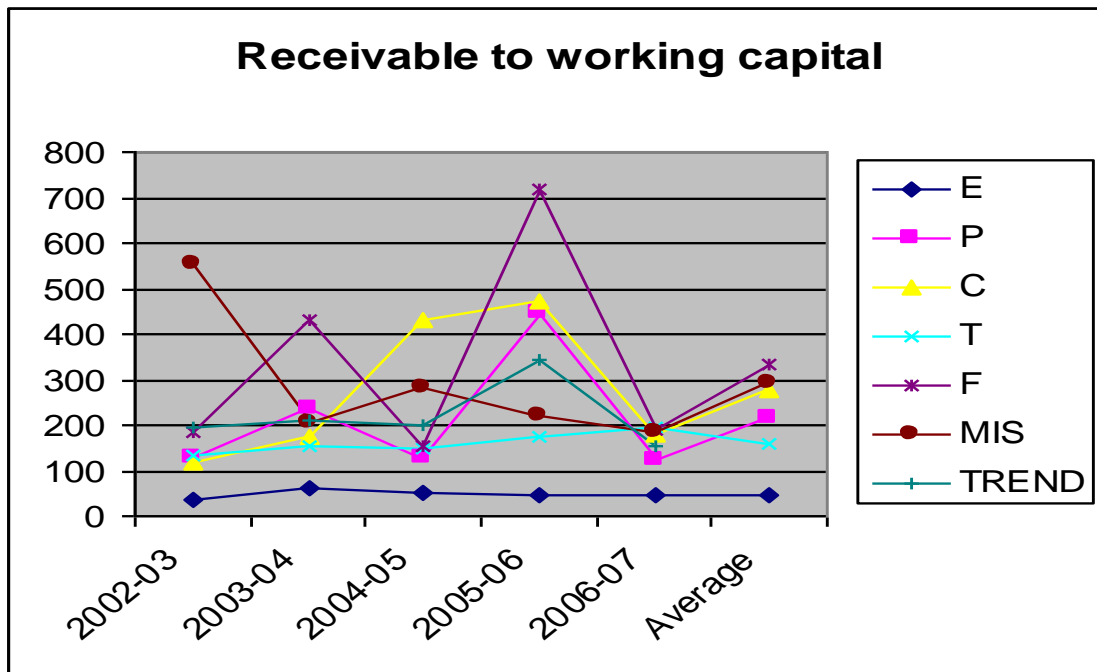
Table: - 5.8
Percentage of receivables to working capital in 160 units during 2002-03 to 2006-07

(Percentage)							
YEARS	E	P	C	T	F	MIS	TREND
2002-03	35.10	129.60	119.86	133.30	184.70	555.50	193.01
2003-04	62.56	238.00	175.52	155.60	429.70	204.55	210.99
2004-05	48.85	128.50	429.55	148.75	153.30	283.90	198.81
2005-06	44.20	446.75	470.00	172.96	720.25	219.05	345.54
2006-07	45.89	122.45	180.35	196.55	188.60	187.10	153.49
Average	47.32	213.06	275.06	161.43	335.31	290.02	

From the above table it can be seen that individually, the percentage were 62.56% for engineering, 446.75% for plastic, 470% for chemical, 196.55% for textile, 720.25 for furniture and 555.50 for miscellaneous units during the said period. In engineering there is a lower percentage of receivable of working capital position. And the remaining industries have a higher percentage of inventories. So the engineering industries prove better comparing to other industries. And the average of the industries is in a increasing level but the overall trend of the industries is in a decreasing level.

The credit and collection policies and performance shown wide variations fro year to year. The indication is that the small units operate under fluctuating conditions of market which affect their working capital position to a market extent.

Figure: - 5.4



Hypothesis

Ho: There would be no significant difference in the percentage of receivables to working capital of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the percentage of receivables to working capital of selected small scale industries of Gujarat state during the period of the study.

Table: - 5.8.1 ANOVA ANALYSIS
Percentage of receivables to working capital

Source of Variation	SS	df	MS	F	F crit
Between Groups	272631.6	5	54526.31	2.55086	2.620654
Within Groups	513015.9	24	21375.66		
Total	785647.4	29			

The above table indicates the calculated value of 'F'. The calculated value of 'F' is 2.550 which is less than the table value of 'F'. The table value of 'F' at 5% level of significance is 2.620. It indicated that the null hypothesis is accepted and alternative hypothesis is rejected. So, it indicates that there is no significant difference in the percentage of receivables to working capital of selected small scale industries of Gujarat state.

5.9 MANAGEMENT OF CASH

The table given below shows that the percentage relationship between the cash and the working capital relating to the selected small scale industries of Gujarat state.

Table: - 5.9
Percentage of cash to working capital in 160 units during 2002-03 to 2006-07

(Percentage)

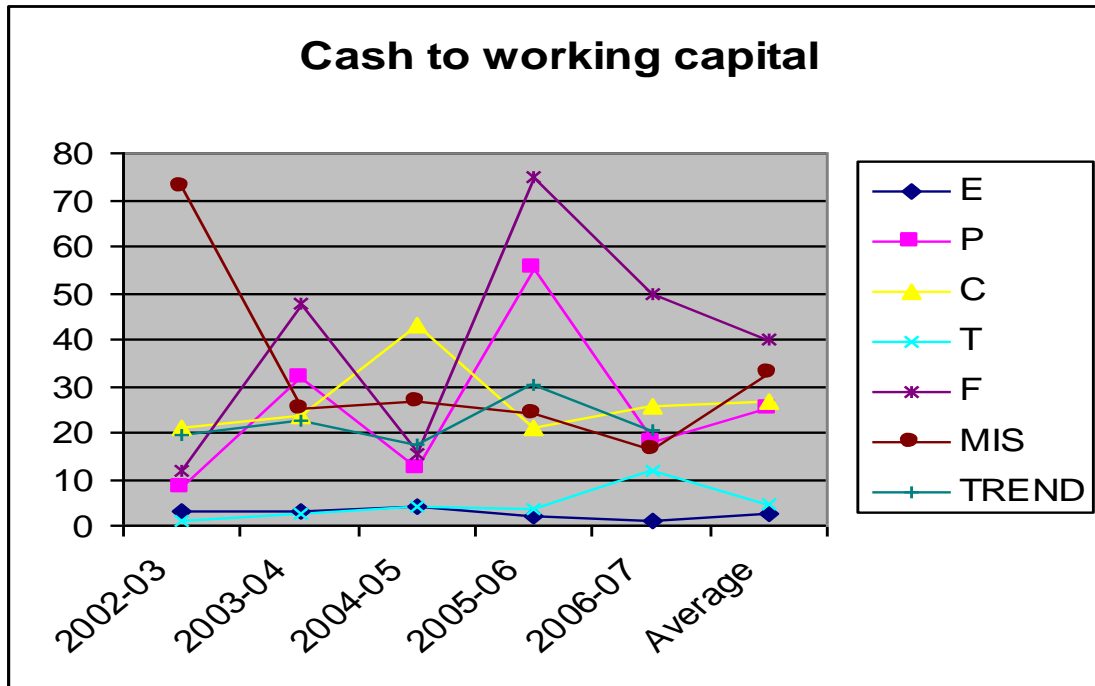
YEARS	E	P	C	T	F	MIS	TREND
2002-03	2.9	8.25	20.78	1.2	11.60	72.80	19.59
2003-04	3.2	31.55	23.45	2.8	47.80	25.05	22.31
2004-05	3.9	12.50	43.00	4.0	15.45	26.80	17.61
2005-06	1.8	55.50	20.90	3.4	75.10	23.90	30.1
2006-07	1.1	17.80	25.70	11.60	50.00	16.45	20.44
Average	2.58	25.12	26.77	4.6	39.99	33	

From the above table makes it clear that the share of cash was low in the units except plastic, furniture, chemical, and miscellaneous categories.

Industry-wise this percentage was 2.58 for engineering, 25.12 for plastic, 26.77 for chemical, 4.6 for textile, 39.99 for furniture and 33 for miscellaneous units.

And the units i.e. plastic, chemical and furniture had the higher percentage than the yearly average. And the average of the industries is in a increasing level and there is a mixed trend in the industries.

Figure: - 5.5



Hypothesis

Ho: There would be no significant difference in the percentage of cash to working capital of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the percentage of cash to working capital of selected small scale industries of Gujarat state during the period of the study.

Table: - 5.9.1 ANOVA ANALYSIS
Percentage of cash to working capital

Source of Variation	SS	df	MS	F	F crit
Between Groups	5784.926	5	1156.985	4.130378	2.620654
Within Groups	6722.785	24	280.116		
Total	12507.71	29			

The above table indicates the calculated value of 'F'. The calculated value of 'F' is 4.130 which is more than the table value of 'F'. The table value of 'F' at 5% level of significance is 2.620. It indicated that the null hypothesis is rejected and alternative hypothesis is accepted. So, it indicates that there is a significant difference in the percentage of cash to working capital of selected small scale industries of Gujarat state.

Despite this, it will be wrong to infer that the management of cash presented no problem as such as in the administration of working capital of the small scale industries of Gujarat state. It may be recalled here that during the time span of this study, the units not only lacked the technical solvency and liquidity but also worked without the introduction of modern technology, because of paucity of funds. Therefore, one may comment that low cash carried by the units is either a matter of conscious planning or the result of sheer scarcity.

5.10 FINANCING OF WORKING CAPITAL

So far we have examined the composition of working capital in small scale industries of Gujarat state. It would be pertinent to find out the manner in which the businessman raised the funds to finance their working capital requirement.

The businessmen who were interviewed about the various aspects of working capital management reacted in some interesting. Their reaction helps to understand better their approach and treatment of the issue.

Every problem in industry has bearing on finance. For without proper finance there will be no efficient planning, nor purchase of materials, nor production, nor marketing, nor any fair profit, the latter in its turn forming the foundation of the finance itself. Recently lot of attention is being given to growing number of sick units. Many factors may make a unit sick. An important cause in most cases would be the shortage and/or mismanagement of funds.

5.11 PRINCIPLES OF FINANCING

The total current assets will be financed by creditors for purchases and other current liabilities: like loans from directors, their relatives and friends. Funds required to carry the remaining current assets will come partly from own fund of the firm and long-term borrowings and partly it will be financed by bank borrowing. Conventionally the owner's fund together with long-term borrowings should at least form one-fourth of total current assets less non-bank credit or of the working capital gap.

5.12 PERIOD OF REVIEW OF WORKING CAPITAL

The periodic review of working capital position receives considerable attention. The reaction of the businessmen is given in below table:

Table: - 5.10
Period of review of working capital

PERIOD OF REVIEW	NO. OF UNITS	%
Daily	22	13.75
Weekly	58	36.25
Monthly	43	27
Other period	16	10
No review	21	13
Total	160	100

The above table shows that 50% of the units under survey reviewed the working capital position every week and 13% of the units did not find it necessary to review the working capital position at all. This shows that the management of these units are quite vigilant about the better utilization of working capital.

The variation in the review period is very wide. The reasons which emerged out of the enquiry are:

1. Budgets are not prepared;
2. The manpower, energy and time with the businessmen are limited,
and

3. The tendency is to do the exercise of reviewing only when the pressure of need for more funds is felt.

5.13 ASSESSMENT OF WORKING CAPITAL

The owner of the unit always tries to find out whether his unit is effectively utilizing the working capital or not. The methods for such assessment can be:

1. Ratio analysis
2. Fund flow analysis

The methods used by the selected small scale industries of Gujarat state have been shown in the below table:

Table: - 5.11
Method of assessment of working capital

(No. of units)

METHODS ADOPTED	E	P	C	T	F	MIS	TOTAL
Ratio analysis	08	02	08	00	03	04	25
Fund flow statement	08	02	00	08	03	06	27
No method adopted	24	12	16	12	14	30	108
Total	40	16	24	20	20	40	160

From the above table it is conclude that about 2/3 of the total units do not have any particular method of working assessment. Either they do not know about the technique or they are not following the methods formally.

Only chemical industries do not use the method of fund flow statement. And textile industries do not use the ratio analysis. So, other industries have used the both the method for assessment of working capital.

What need to be noted along with the above comment is the interesting facts that some units have adopted advanced technique of preparing fund flow techniques. The units which do so realize its usefulness and the work of its preparation is carried on mostly by the owner himself. This is an indication that enlightenment may not be widespread but certainly to welcome beginning has been made by some units.

Hypothesis

Ho: There would be no significant difference in the method of assessment of working capital of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the method of assessment of working capital of selected small scale industries of Gujarat state during the period of the study.

Table: - 5.11.1 ANOVA ANALYSIS
Method of assessment of working capital

Source of Variation	SS	df	MS	F	F crit
Between Groups	188.4444	5	37.68889	0.481476	3.105875
Within Groups	939.3333	12	78.27778		
Total	1127.778	17			

The above table indicates the calculated value of 'F'. The calculated value of 'F' is 0.481 which is less than the table value of 'F'. The table value of 'F' at 5% level of significance is 3.105. It indicated that the null hypothesis is accepted and alternative hypothesis is rejected. So, it indicates that there is no significant difference in the method of assessment of working capital of selected small scale industries of Gujarat state.

5.14 CONTROL METHODS USED FOR WORKING CAPITAL MANAGEMENT

The control methods used in working capital management in the selected small scale industries of Gujarat state are given below:

Table: - 5.12

Control methods for working capital

(No. of units)

METHODS USED	E	P	C	T	F	MIS	TOTAL
Cash & bank balance report	22	04	08	04	12	12	62
Sale/production budget report	10	09	08	14	08	18	67
Total w/c report	04	03	04	00	00	10	21
Two or more methods of the above	04	00	04	02	00	00	10
Total	40	16	24	20	20	40	160

The above table shows that 92% of the units exercise some system of control in their working capital management. They make efforts to know on a continuous basis the relationship between their activities and find funds. Most of the units keep a close watch on their cash and bank balance reports. But 3% of the total units try to keep their working capital in proper relationship with sales/production. In 10% units, it was gratifying to note a detailed report on the total working capital was prepared and constantly examined for unfavourable variations. The general awareness in this regard appears to be growing fast.

Hypothesis

Ho: There would be no significant difference in the control methods for working capital of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the control methods for working capital of selected small scale industries of Gujarat state during the period of the study.

Table: - 5.12.1 ANOVA ANALYSIS

Control methods for working capital

Source of Variation	SS	df	MS	F	F crit
Between Groups	141.3333	5	28.26667	0.763964	2.772853
Within Groups	666	18	37		
Total	807.3333	23			

The above table indicates the calculated value of 'F'. The calculated value of 'F' is 0.763 which is less than the table value of 'F'. The table value of 'F' at 5% level of significance is 2.772. It indicated that the null hypothesis is accepted and alternative hypothesis is rejected. So, it indicates that there is no significant difference in the control methods for working capital of selected small scale industries of Gujarat state.

5.15 SHORTAGE OF WORKING CAPITAL

The following table shows the broad areas of shortage of working capital and their frequency of occurrence:

Table: - 5.13

Area of shortage of working capital

AREAS	ALWAYS		SEASONAL		NEVER	
	NO.	%	NO.	%	NO.	%
Cash	60	37.5	80	50	20	12.5
Inventories	40	25	80	50	40	25
Other areas	60	37.5	00	00	100	62.5
Total	160	100	160	100	160	100

The above table shows that against the general belief, we found that 25% of the units were not at all worried about the working capital shortage either in cash or in inventory. No definite reaction could be secured on discussion but it is strongly indicated that units owned by people who were essentially merchants and/or money lenders felt very secure, in their working capital position.

5.16 MEETING SHORTAGE OF WORKING CAPITAL

How do the selected industries meet shortage of working capital? The answers to this question have been presented in the following table:

Table: - 5.14

Ways of meeting shortage working capital

	AFFECTED		NOT AFFECTED	
	NO.	%	NO.	%
Borrow at higher interest	40	25	120	75
Delay payment to creditors	80	50	80	50
Disturbed production	32	20	128	80

The above table shows that the units had presented a wide variety of methods they approved for meeting the shortage of working capital. 80% of the industries would not allow the production to be disturbed. Similarly, 75% of the industries were clear that they will not borrow at higher rate of interest to make up the shortage. Either they could not or they did not like to tell what they will do if these two alternatives are eliminated. Supplier's credit as a source of fund appeared to be quite attractive because 50% of the industries were thinking to delay payments to creditors for meeting working capital shortage. How doubtful this source could be has been noted earlier – the capacity of small industries to delay payments to creditors and continue to receive supply from them is limited.

(B) WORKING FINANCE

SCOPE

A study of working finance can be done from the point of view of its size, adequacy and the sources from which it was procured. It may also be worthwhile to study how the selected small scale industries of Gujarat state have strengthened their source base of working finance.

5.17 SIZE OF WORKING FINANCE

The following table indicates the size of working finance in selected small scale industries of Gujarat state during 2003 to 2007.

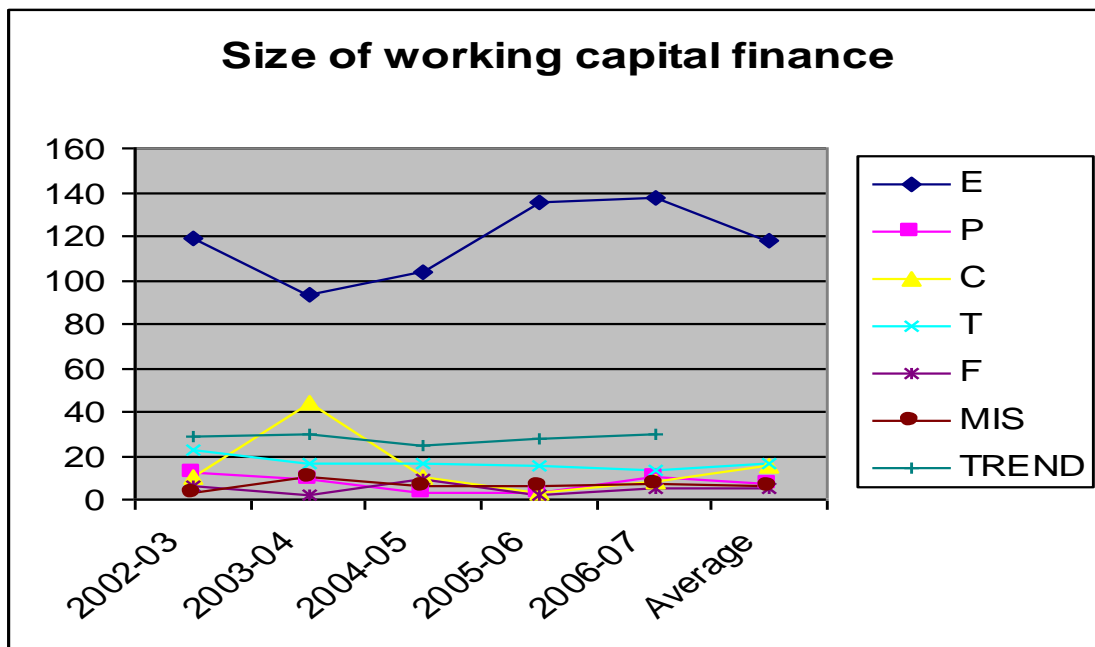
Table: - 5.15
Size of working capital finance in 160 units
(Rs. In lakh)

YEARS	E	P	C	T	F	MIS	TREND
2002-03	118.69	11.83	9.83	22.24	5.78	2.99	28.56
2003-04	93.16	9.28	44.54	16.80	2.52	10.30	29.433
2004-05	103.43	3.4	10.54	16.08	8.98	6.19	24.77
2005-06	135.56	2.82	2.89	15.71	1.84	6.39	27.535
2006-07	137.22	9.79	8.23	12.89	5.20	6.97	30.05
Average	117.61	7.42	15.21	16.74	4.86	6.57	

The above table shows that the range of working capital in engineering industries was not lower than 93.16 lakhs of the total working capital finance for all the undertaking in any year. The highest working finance was 137.22 lakhs in 2006-07 in the engineering units. And the remaining industries i.e. plastic, chemical, textile, furniture, and miscellaneous industries could work with less than 50 lakhs of total working capital finance. This means that the bigger the size of the company working, the larger had been the size of working finance.

As compared to other industries the average of the engineering industries was higher. Because in engineering industries there is a huge investment is made during this session. And larger the size of working capital compared to other industries.

Figure: - 5.6



Hypothesis

Ho: There would be no significant difference in the size of working capital finance in selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the size of working capital finance in selected small scale industries of Gujarat state during the period of the study.

Table: - 5.15.1 ANOVA ANALYSIS
Size of working capital finance

Source of Variation	SS	df	MS	F	F crit
Between Groups	48693.21	5	9738.642	83.76376	2.620654
Within Groups	2790.317	24	116.2632		
Total	51483.53	29			

The above table indicates the calculated value of 'F'. The calculated value of 'F' is 83.76 which is more than the table value of 'F'. The table value of 'F' at 5% level of significance is 2.620. It indicated that the null hypothesis is rejected and alternative hypothesis is accepted. So, it indicates that there is a significant difference in the size of working capital finance in selected small scale industries of Gujarat state.

ADEQUACY OF WORKING CAPITAL

The size of working finance as divided by month's cost of production/operation or months, average sales/turnover shows its adequacy/inadequacy when the ratios so obtained are compared with the guide posts fixed in these regards.

5.18 WORKING FINANCE IN TERMS OF MONTHS, COST OF PRODUCTION

This has been presented in the following table:-

Table: - 5.16

Working finance in terms of months' cost of production in 160 units

YEARS	E	P	C	T	F	MIS	TREND
2002-03	1.3	0.6	0.3	0.9	0.6	0.2	0.65
2003-04	1.2	0.5	0.3	0.7	0.2	0.3	0.53
2004-05	1.4	0.1	0.4	0.8	0.5	0.3	0.58
2005-06	1.5	0.2	0.2	0.7	0.2	0.4	0.53
2006-07	1.1	0.5	0.2	0.7	0.4	0.4	0.55
Average	1.3	0.38	0.28	0.76	0.38	0.32	

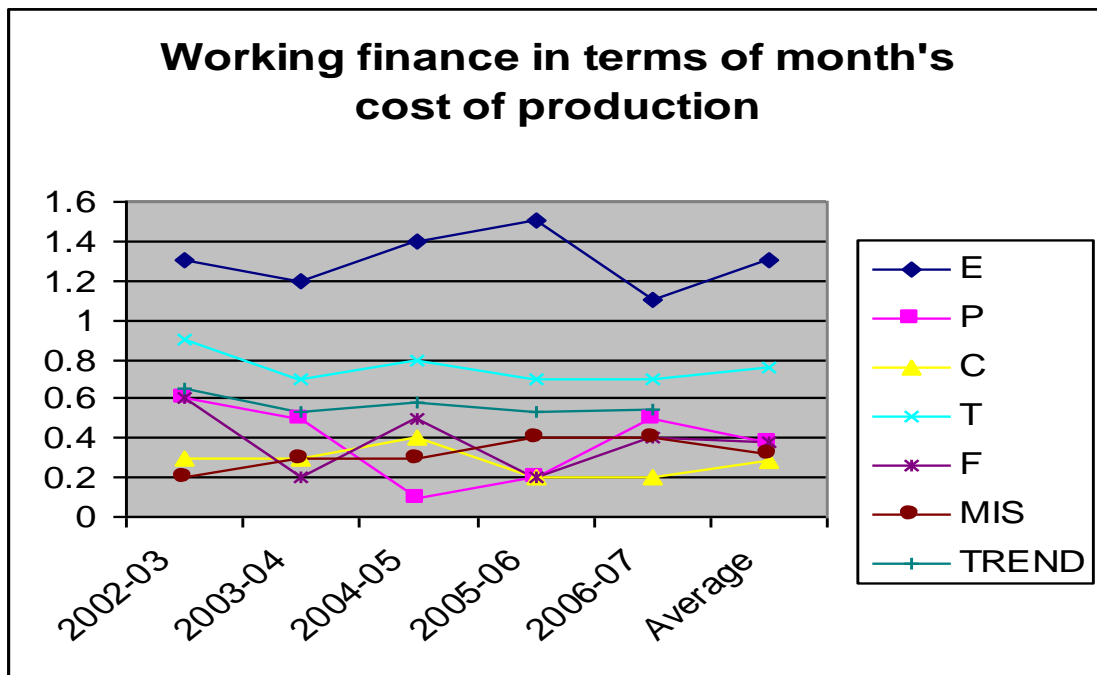
The following formula has been used:

$$\frac{\text{WC} \times 12}{\text{Value of production}}$$

The above table shows that the units on an average kept the finance to meet the requirement of 0.53 to 0.65 months cost of production. In the year 2005-06 and 2006-07 the period was stationary to the tune of 0.53 & 0.55 months.

Coming to the individual industry group the engineering and textile units kept the working finance for more than the general average. The remaining units could work with a lower period of working finance.

Figure: - 5.7



Hypothesis

Ho: There would be no significant difference in the working finance in terms of months, cost of production in selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the working finance in terms of months, cost of production in selected small scale industries of Gujarat state during the period of the study.

Table: - 5.16.1 ANOVA ANALYSIS

Working finance in terms of months, cost of production

Source of Variation	SS	df	MS	F	F crit
Between Groups	3.939	5	0.7878	37.51429	2.620654
Within Groups	0.504	24	0.021		
Total	4.443	29			

The above table indicates the calculated value of 'F'. The calculated value of 'F' is 37.51 which is more than the table value of 'F'. The table value of 'F' at 5% level of significance is 2.620. It indicated that the null hypothesis is rejected and alternative hypothesis is accepted. So, it indicates that there is a significant difference in the working finance in terms of months, cost of production in selected small scale industries of Gujarat state.

5.19 WORKING FINANCE IN TERMS OF MONTH'S AVERAGE SALES TURNOVER

This has been presented in the following table:-

Table: - 5.17

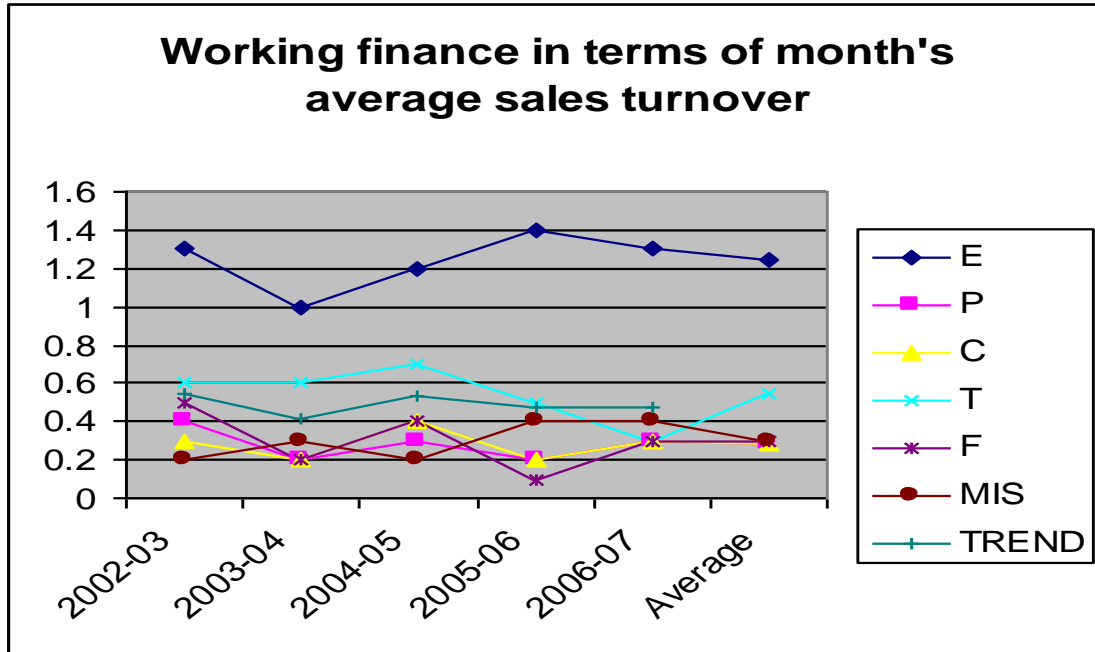
Working finance in terms of months' average sales turnover in 160 units

YEARS	E	P	C	T	F	MIS	TREND
2002-03	1.3	0.4	0.3	0.6	0.5	0.2	0.55
2003-04	1.0	0.2	0.2	0.6	0.2	0.3	0.42
2004-05	1.2	0.3	0.4	0.7	0.4	0.2	0.53
2005-06	1.4	0.2	0.2	0.5	0.1	0.4	0.47
2006-07	1.3	0.3	0.3	0.3	0.3	0.4	0.48
Average	1.24	0.28	0.28	0.54	0.3	0.3	

From the above table it can be seen that the units had the working finance below one month's sales turnover. The rate increased in 2002-03 to 0.55 after that it is decreased to 0.48 in 2006-07.

Individually, the working finance in terms of sales turnover of small scale industries was higher in engineering units. The lowest working finance was in plastic and chemical industries.

Figure: - 5.8



Hypothesis

Ho: There would be no significant difference in the working finance in terms of month's average sales turnover in selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the working finance in terms of month's average sales turnover in selected small scale industries of Gujarat state during the period of the study.

Table: - 5.17.1 ANOVA ANALYSIS

Working finance in terms of months' average sales turnover

Source of Variation	SS	df	MS	F	F crit
Between Groups	3.627	5	0.7254	45.81474	2.620654
Within Groups	0.38	24	0.015833		
Total	4.007	29			

The above table indicates the calculated value of 'F'. The calculated value of 'F' is 45.81 which is more than the table value of 'F'. The table value of 'F' at 5% level of significance is 2.620. It indicated that the null hypothesis is rejected and alternative hypothesis is accepted. So, it indicates that there is a significant difference in the working finance in terms of month's average sales turnover in selected small scale industries of Gujarat state.

5.20 TERMS OF PURCHASE AND SALE

Sale and credit policies of a industries determine the terms of purchase and sale. Less cash is tied up if the terms of purchase are favourable to the units. On the other hand, if terms of purchase are cash and sale on credit, the working capital requirement will be relatively larger as there is no payable to match receivables.

The position regarding terms of purchase and sales is presented in following table:

Table: - 5.18
Terms of purchase and sales

YEARS	E	P	C	T	F	MIS	TREND
2002-03	28 (41)	21 (22)	35 (43)	31 (29)	40 (28)	56 (45)	35.17
2003-04	39 (30)	20 (21)	45 (50)	28 (26)	34 (17)	74 (48)	40
2004-05	31 (40)	25 (19)	46 (40)	29 (50)	40 (21)	68 (30)	39.83
2005-06	40 (45)	22 (24)	36 (29)	30 (51)	36 (29)	65 (40)	38.17
2006-07	37 (41)	16 (19)	44 (48)	28 (39)	25 (18)	53 (50)	33.83
Average	35	20.8	41.2	29.2	35	63.2	

Note: - Figure in brackets represent creditors' ratio. This ratio has been calculated on the basis of the following formula:

$$\frac{\text{Account payable}}{\text{R.M.purchase}} \times 365 = \text{No. of days' purchased unpaid}$$

Individually, the average collection period is lower in plastic, textile and furniture units. The creditors' ratio is lower in plastic and furniture units. One of the reasons of working financing being on high side in the small

units was that they made their purchase for cash and sold their goods on credit. To add to this, their credits remained unrealized for considerably long periods.

Hypothesis

Ho: There would be no significant difference in the terms of purchase and sales in selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the terms of purchase and sales in selected small scale industries of Gujarat state during the period of the study.

Table: - 5.18.1 ANOVA ANALYSIS
Terms of purchase and sales

Source of Variation	SS	df	MS	F	F crit
Between Groups	5172	5	1034.4	34.42263	2.620654
Within Groups	721.2	24	30.05		
Total	5893.2	29			

The above table indicates the calculated value of 'F'. The calculated value of 'F' is 34.42 which is more than the table value of 'F'. The table value of 'F' at 5% level of significance is 2.620. It indicated that the null hypothesis is rejected and alternative hypothesis is accepted. So, it indicates that there is a significant difference in the terms of purchase and sales in selected small scale industries of Gujarat state.

5.21 PROFITABILITY OF THE SELECTED SMALL SCALE INDUSTRIES IN GUJARAT STATE

Profitability of operations provides to a business enterprise the most dependable source of working finance operate the business at a profit. If this is done, there is little danger of insufficient working capital. This can be studied from two points of view:

1. Gross profit on capital employed

The gross profit representing the excess sale proceeds over the total cost including the depreciation provision as % of capital employed in the different year for the various industries group stood as given in the following table:

Table: - 5.19

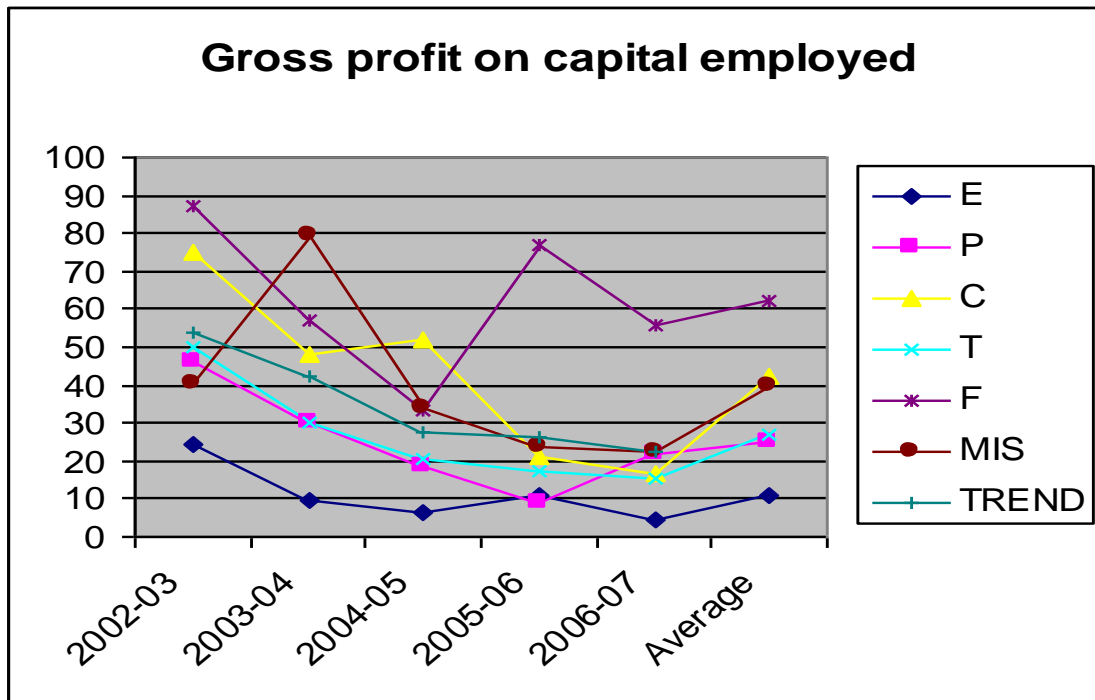
Gross profit on capital employed for 160 units

YEARS	E	P	C	T	F	MIS	TREND
2002-03	24.5	45.9	75.1	50.3	87.3	40.5	53.93
2003-04	9.3	30.05	48	30.4	57.2	79.6	42.43
2004-05	6.2	18.4	52.2	20.8	33.3	33.7	27.43
2005-06	11	8.8	21.2	17.4	77.1	23.4	26.48
2006-07	4.2	21.7	16.4	15.1	55.8	22.2	22.57
Average	11.04	24.97	42.58	26.8	62.14	39.88	

From the above table it can be seen that in the beginning of the years the rate of gross profit on capital employed was encouraging and it came to 11% in 2005-06.

Individually, the rate of gross profit in capital employed was very much higher in chemical, textile, furniture, and miscellaneous industries. The margin of gross profit on capital employed was lower in engineering and plastic units.

Figure: - 5.9



Hypothesis

Ho: There would be no significant difference in the gross profit on capital employed in selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the gross profit on capital employed in selected small scale industries of Gujarat state during the period of the study.

Table: - 5.19.1 ANOVA ANALYSIS
Gross profit on capital employed

Source of Variation	SS	df	MS	F	F crit
Between Groups	7793.274	5	1558.655	4.598007	2.620654
Within Groups	8135.638	24	338.9849		
Total	15928.91	29			

The above table indicates the calculated value of 'F'. The calculated value of 'F' is 4.598 which is more than the table value of 'F'. The table value of 'F' at 5% level of significance is 2.620. It indicated that the null hypothesis is rejected and alternative hypothesis is accepted. So, it indicates that there is a significant difference in the gross profit on capital employed in selected small scale industries of Gujarat state.

2. Net profit to net worth

The rate of net profit to net worth for all the industries taken together as follows: -

Table: - 5.20

Net profit to net worth for 160 units

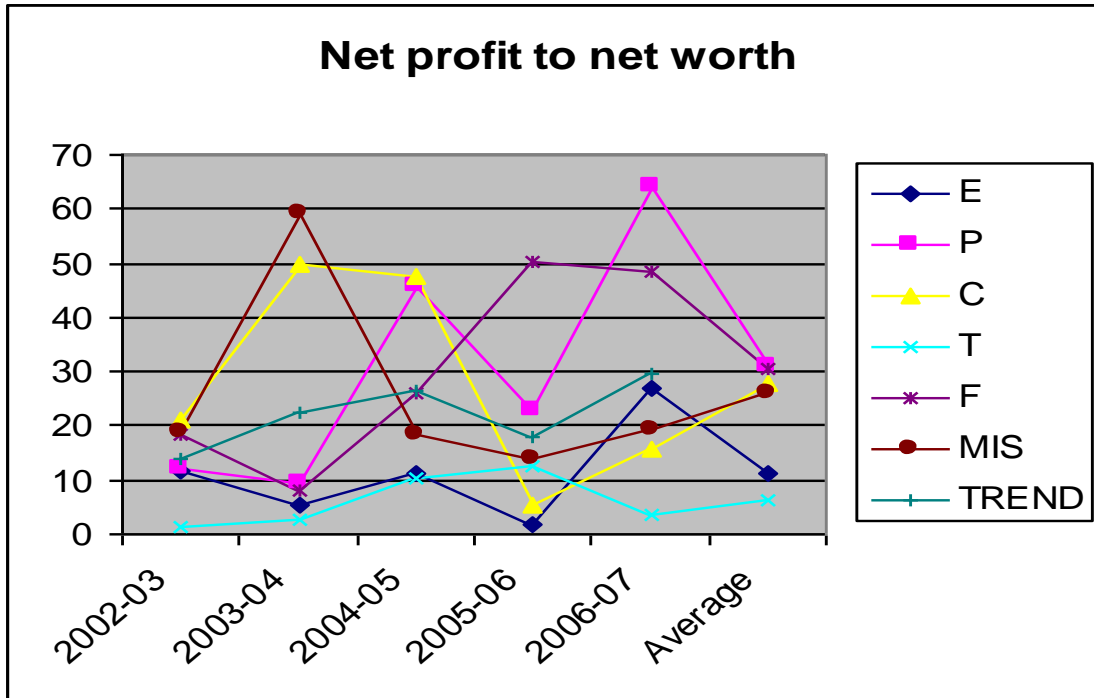
YEARS	E	P	C	T	F	MIS	TREND
2002-03	11.5	12.0	21.1	1.5	18.6	19.0	13.95
2003-04	5.6	9.4	49.9	2.6	8.05	59.15	22.45
2004-05	11.4	45.8	47.5	10.4	26.1	18.2	26.567
2005-06	1.9	22.7	5.6	12.4	50.4	13.9	17.817
2006-07	26.7	64.2	15.8	3.6	48.6	19.2	29.683
Average	11.42	30.82	27.98	6.1	30.35	25.89	

The following formula has been used to find out this ratio:-

$$\frac{\text{Net profit}}{\text{Net worth}} \times 100$$

From the above table it can be seen that the rate of net profit to net worth exceeded very much in plastic, chemical, furniture and miscellaneous industries. There is low rate of net profit to net worth in textile and engineering industries. And also the average of the industries is low in engineering and textile. So, the various reasons can be assigned to such state of affairs i.e. the lack of initial thought, over capitalization, under utilization of the capacity created, high cost of induction and inadequate earning power.

Figure: - 5.10



Hypothesis

Ho: There would be no significant difference in the net profit to net worth in selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the net profit to net worth in selected small scale industries of Gujarat state during the period of the study.

Table: - 5.20.1 ANOVA ANALYSIS

Net profit to net worth ratio

Source of Variation	SS	df	MS	F	F crit
Between Groups	2815.508	5	563.1015	1.924778	2.620654
Within Groups	7021.296	24	292.554		
Total	9836.804	29			

The above table indicates the calculated value of 'F'. The calculated value of 'F' is 1.924 which is less than the table value of 'F'. The table value of 'F' at 5% level of significance is 2.620. It indicated that the null hypothesis is accepted and alternative hypothesis is rejected. So, it indicates that there is no significant difference in the net profit to net worth in selected small scale industries of Gujarat state.

5.22 SOURCES OF WORKING CAPITAL FINANCE

The question regarding the sources of working capital revealed some interesting aspects of financing of small scale industries. The following table shows extent of various sources of funds used by the selected industries.

Table: - 5.21
Sources of working funds

(In Percentage)

SOURCES	E	P	C	T	F	MIS
Own funds	35	25	30	40	40	50
Bank funds	55	45	40	45	30	45
Relatives & friends	10	30	30	15	30	05
Total	100	100	100	100	100	100

The institutional finance was available in setting up the units as fixed capital investments. For working capital needs the owners have to raise it themselves. Two things emerge as significant in this regard. One is the rate

of relatives and friends. Their contribution is significant in industries where merchants and money lenders have projected themselves into manufacturing activities for example plastic, chemical and furniture industries. In the industries where non-trading classes are prominently active the contribution of relatives and friends had sharply declined. Second thing was the contribution of bank funds this was significant and exceeded the financing of own funds in almost all the four major grounds of the industries i.e. engineering, plastic, chemical, and textile. The fact is strongly brought forward that institution financing is the mainstay of financing of working capital.

5.23 RATE OF INTEREST

Most of the industries wanted me to believe that the rate of interest changed by range between 12% to 18% while funds provided by relatives and friends were cheaper. The reason for this was that the units could depend upon obtaining the required funds from the banks but they could not depend upon the funds supplied by the friends and relatives. This source could dry up when the requirement was highest or could be withdrawn at any time.

5.24 TRADE CREDIT

One of the important sources of the working capital requirement is through trade credit supplied by the suppliers. The aim should be to ensure that the average age of outstanding trade credit is neither excessive nor too low. The position regarding availability of trade credit is shown below:

Table: - 5.22
Trade credit

FACILITIES	NO. OF UNITS	%
Credit only	40	25.0
Cash only	20	12.5
Both cash and credit	100	62.5
Total	160	100

From the above table it can be seen that the brings out strongly that 25% of the units purchased on credit only. Their reliance on receiving credit arose mainly from their dealing with established suppliers. These suppliers were businessmen of large resources and could easily follow the market conventions. More interesting perhaps were the units who functioned without trade credit. 12.5% of the units did business on cash. These units revealed that they would like to have credit but forced to function on cash basis for the simple reason that their credit standing was poor.

And most of the engineering industries purchase on both the methods whereas most of the textile and chemical industries purchase on credit and plastic units purchase on cash only.

5.25 METHODS OF CREDIT PURCHASE

A credit purchase on open account is a measure of continuing business relationship and trust between the parties. Methods of credit purchase used in the selected industries are shown below:

Table: - 5.23
Form of credit purchases

FORM	NO. OF UNITS	%
No. credit purchase	20	12.5
Open A/c	40	25.0
Trade acceptances on	60	37.5
Both open and trade acceptances	40	25.0
Total	160	100

The above table shows that 25% of the credit purchases were made on the open account. This showed that the dealing between the parties was on firm financial basis. The established industries in engineering and chemical used the open account extensively. Trade acceptances, however, remained the commonly accepted form of credit purchases.

5.26 CREDIT PERIOD ALLOWED BY THE SUPPLIERS

The below table reveals that the suppliers to these industries do not have a standardized practice on determination of credit period to these industries. They handled each transaction and each party as a separate case. The same unit may receive one credit period from the supplier and a different credit

period in another transaction from the same supplier. The period of credit normally favoured was up to 15 days or more than 30 days. In the latter case the production cycle of the unit was an important consideration.

Table: - 5.24
Credit period allowed by the suppliers

NO. OF DAYS	NO. OF UNITS	%
Up to 15 days	48	30
15-30 days	32	20
More than 30 days	80	50
Total	160	100

For each unit the suppliers do not allow one type of credit period but there are many types of credit period for each unit. The above classification indicates that on an average most of the parties to each unit be have in this way.

5.27 DISCOUNT FACILITIES GIVEN BY THE SUPPLIERS

The following tables present the position on this point in the selected units:-

Table: - 5.25

Extra discount allowed on prompt payment by the suppliers

RESPONSE	NO. OF UNITS	%
Yes	120	75
No	40	25
Total	160	100

Table: - 5.26

Rate of discount allowed

RATE OF DISCOUNT	NO. OF UNITS	%
Up to 2	48	40
3 -5	36	30
5 and above	36	30
Total	120	100

Most of the engineering units get the discounts up to 3% on prompt payment. Plastic and furniture units get the discount up to 5% and miscellaneous units get the discount above 5%.

The above table shows that 75% of the suppliers of the units allowed 3% to 5% of extra discount; but more important than this was that 25% do not care to offer additional incentive for prompt payment. The reason for this could not be determined.

5.28 DISCOUNT FACILITIES AVAILED OF BY THE UNITS

The tight liquidity position of the units did not permit them to take advantage of discount. The delay in payment made them lose the benefit of higher rate of discount offered by the suppliers. There appeared to be small awareness about the tremendous cost the units paid by not availing of this facility.

Position of this point in selected industries is shown in the following tables:-

Table: - 5.27

Penal interest charged by the suppliers

RESPONSE	NO. OF UNITS	%
Yes	140	87.5
No	20	12.5
Total	160	100

Table: - 5.28

Rate of penal interest charge by suppliers

RATE OF DISCOUNT	NO. OF UNITS	%
Up to 12	28	20
12 -18%	80	57
19% and above	32	23
Total	140	100

The suppliers of the textile industries charge penal interest more than 18% whereas the suppliers of engineering charge interest up to 18%.

From the above table shows that only 12.5% of the suppliers did not charge penal interest on over due account. The small units were forced by the shortage of funds at their command to pay penal interest generally up to 18% to their suppliers. Most of them commented that on the one hand they had to suffer the penal interest; on the hand they could not charge penal interest from their customers, mainly due to competition.

5.29 REFERENCES

- Aggrawal N.K. Management of working capital, Sterling publishers (P) Ltd., New-Delhi, 1983.
- Aggrawal N.P. Analysis of financial statement, National publishing house, New-Delhi, 1981.
- Backman T.N. Credit and Collection management & Theory, Mc.Graw Hills, New York, 1962.
- Bhalla P.N. Cash management in S.T.D., Lok-udyog Vol. VI No.8. (Nov.1972)
- Chadda R.S. Inventory Management in India, Allied publishers, Bombay, 1971.
- Chawla S.K. Working capital management – A practical approach
- Greig, Cuthbert Commercial credit and accounts collection, The furniture records, London.
- Leslie R. Harward Working capital – its management and control, Mc Donald and evans Ltd, London.
- Marting John Control of working capital.
- Mishra R.K. Working capital management, Somaiya publication (P) Ltd, Bombay.
- Norman E. Managing company cash.
- Pradhan R.S. Management of working capital.
- Rajan N. Material management in public enterprises.

CHAPTER – 6

CHAPTER 6

MANAGEMENT OF CASH

6.1 Introduction

6.2 Importance of cash management

6.3 Motives for holding cash

6.4 Effective control of cash flows

6.5 Productive utilizations of cash surplus

6.6 Determination of optimum cash balance

6.7 Control of cash

6.8 Why cash balance is kept?

6.9 How cash balance required is determined?

6.10 How is cash shortage met with?

6.11 Judging liquidity position

6.12 Evaluation of performance of cash management

6.13 Adequacy of cash

Current ratio

Quick ratio

Net cash flow to current liabilities

6.14 To assess the effective control of cash flows

Cash to current assets ratio

Cash turnover in sales ratio

Liquid funds to current liabilities

6.15 For productive utilizations of surplus cash

Marketable securities to current ratio

6.16 References

MANAGEMENT OF CASH

6.1 INTRODUCTION

Cash is the most important current assets for smooth operation of a business. Cash is the basic input needed to keep the business running on a continuous basis; it is also the ultimate output expected to be realized by selling the service or product manufactured by a firm. A firm should keep sufficient cash neither more nor less. Cash shortage will disrupt the firm's manufacturing operation, while excessive cash will simply remain idle contributing anything towards the firm's profitability.

Cash is the money which a firm can disburse immediately without any restrictions. Cash is the currency and coin that a firm has on hand in petty cash drawers, in cash registers, or in checking accounts at the various commercial banks where its demand deposits are maintained. Sometimes near-cash items such as marketable securities or bank time deposits are also included in cash.

Cash management is concerned with minimizing unproductive cash balance, investing temporarily excessive cash advantageously, and making the best possible arrangements for meeting expected and unexpected demands on the firm's cash. It involves managing cash flows in-and-out of the firm, cash flow within the firm and cash balances held by the firm at a point of time. Cash management must be thought of in terms of over-all liquidity needs of the firm, specifically its current assets and liabilities. In order to reduce the influence of uncertainties with regard to cash needs and to ensure adequate

liquidity, firms have to gauge the need for protective liquidity. The efforts involved for this purpose usually take the form of:

1. Explicit identification of the kinds of contingencies against which protection is desirable.
2. Assessment of the probabilities or odds that each of these will develop within a period in future, such as 5 years.
3. Assessment of the probabilities of developments that will create cash drain at the same time.

6.2 IMPORTANCE OF CASH MANAGEMENT

Cash of a business enterprise may be comparing to the blood of human body; blood gives life and strength to a human body and cash imparts life and strength, profits and solvency, to a business organization.

The steady and healthy circulation of cash throughout the entire business operation is the basis of solvency. Cash is the most liquid asset that a business owns. The main pre-occupation of a businessman should be cash which is starting as well as finishing point. It is the only asset, which remains in a business not only at the commencement but at the termination also. It should be remembered that shortage of cash is more likely to cause demise of a business than any other single factor.

Cash management assumes more importance than any other current assets because cash is the most significant and the least productive asset that a firm holds. It is significant because it is used in paying firm's obligations. However, cash is unproductive, like fixed assets or inventories. As it does not produce goods for sale. Therefore, the aim of cash management should

be to maintain adequate cash to keep a firm not only sufficiently liquid but to use excess cash in some profitable ways. The management of cash is also important because it is difficult to predict cash accurately and that there is no perfect coincidence between the inflows and outflows of cash. Thus, during some period of time cash outflows will exceed cash inflows because payments for taxes, dividends, seasonal inventory etc build up. At other times cash inflows will be more than cash payments because there may be large cash sales and debtors may also be realized in large sums promptly.

Cash management is also important because cash constitutes the smallest portion of the total current assets. Yet management's considerable time is devoted in managing it. An obvious aim of a firm is to manage its cash affairs in such a way as to keep cash balances at a minimum level and to invest the released cash funds in profitable opportunities. Holding of cash has implicit cost in the form of opportunity cost.

A financial manager has to adhere to the five R's of money management. These are:

1. The right quality of money for liquidity considerations;
2. The right quantity whether owned or borrowed;
3. The right time to pressure solvency;
4. The right source;
5. The right cost of capital which the organization can afford to pay.

6.3 MOTIVES FOR HOLDING CASH

The management of cash is particularly important because it brings into sharp focus, the trade-off between risk and return faced by a financial manager.

If cash is not available to meet bills as they fall due, the ultimate risk is faced the risk of bankruptcy.

Economic theory has now established that business firms or individuals have four primary motives for holding cash i.e. transaction motives, precautionary motives, speculative motives, and investment motives.

Cash is held for the following reasons:

Transaction motive

A firm needs a pool of cash because its receipts and expenses are not perfectly synchronized. A pool of cash is also known as a transaction balance. A cash budget is often used to decide what the transaction balance should be. Balance held for transaction purpose allows the firm to dispense with cash needs that arise in the ordinary course of business. Transaction balances are used to meet their regular outflows as well as planned acquisition of fixed assets and inventories.

Cash held is significantly affected by the relative amount of transaction in the industry in which the firm operates. If revenues can be forecasted to fall within a tight range of outcomes, then the ratio of cash and near cash to total assets will be low for the firm than if the prospective cash inflows are

expects to vary over a wide range. In this regard it is well known that utility concerns can forecast cash receipts quite accurately, owing to stable demand for their services arising from their quasi monopoly status. This enables them to stagger their billings throughout the month and to time them to coincide with their planned expenditure. Inflows and outflows of cash are thereby synchronized.

Precautionary motive

Precautionary balances are a buffer stock of liquid assets. This motive of holding cash relates to the maintenance of balances to be used to satisfy possible, but as yet indefinite needs. In other words we can say that the management takes into consideration all expected losses and emergencies to decide the precautionary balance. This is the balance which is laid for the rainy day. Cash flow predictability could affect a firm's cash holdings through synchronization of receipts and disbursements. Cash flow predictability also has a material influence on the firm's demand for cash through the precautionary motive. In addition to cash flow predictability, the precautionary motive for holding cash is affected by the firm's access to external funds. Cash sources which can be tapped on short notice are especially important. Good banking relationships and established lines of credit can reduce the firm's need to keep cash on hand. This unused borrowing power will obviate somewhat the need to invest in precautionary balance. In actual business practice, the precautionary motive is met to a large extent by holding of a portfolio of liquid assets and not just cash.

Speculative motive

The financial manager would like to take advantage of unexploited opportunities. A part of money reserve is always inevitable so that, the firm may be able to take advantage of cash when opportunities are ripe and must be immediately knocked out. Generally, the speculative motive is the least important component of a firm's preference of liquidity.

Investment motive

Cash is required:

1. For meeting operational requirements;
2. For providing liquidity reserves;
3. For maintenances of bank relationship;
4. For building of investment image and other such intangibles; and
5. For contracting a reservoir for net cash inflows.

An important policy regarding cash management is: what should be the optimal amount of cash balance to be held? In determining such a balance, the management needs to consider the joint impact of the following factors:

1. The philosophy of the management regarding liquidity and risk of insolvency.
2. The expected cash inflows and outflows based on the cash budget forecasts encompassing long range and short range cash needs.
3. The size of sales in relation to fixed asset investments.
4. The degree of deviation between the expected and actual net cash flows.
5. The maturity structure of the firm's liabilities.
6. The firm's ability to borrow at short notice in the event of emergency.
7. Efficient planning and control of cash.

8. Status of the firm's receivables and inventory.
9. The credit position of the firm.
10. The nature of the business.

6.4 EFFECTIVE CONTROL OF CASH FLOWS

The financial manager should ensure that there does not exist a significant deviation between projected cash flows and actual cash flows after preparing cash budgets and establishing appropriate net cash flows. To achieve this, cash management efficiency will have to be improved through a proper control of cash collections and disbursements. It is obvious, that the more often a company converts its products or its services into cash proceeds in any given period, the less capital it needs to finance a certain volume of business. The more commonly and important techniques in use are the techniques of speeding up collections, concentration banking, lock box system, controlling the disbursement and playing the float. The descriptions of these techniques are as follows:

Speeding up collections

If a firm can speed up its cash collections, its requirements for cash balances will be reduced. Cash collection can be accelerated by reducing the lag or gap between the time a customer pays his bills and the time, the cheque is collected and funds become available for the firm's use. Within this time gap, the delay is caused by the mailing time. The amount of cheques sent by customers but not yet collected is called deposit float. The greater is the firm's deposit float, the longer is the time taken in converting cheques into usable funds. In India these floats assume sizeable proportions, as cheques normally take a longer time to get realized than in many other countries.

Concentration banking

Companies adopting the technique of concentration banking speed up their collection procedures by establishing strategic collection centers. Collections are made locally by sales office, division or subsidiaries and deposited in local bank accounts. From these local accounts funds are transferred as rapidly as possible to centralized banks by wire transfers, by drafts or by the use of imprest or automatic balances. On the basis of reports of daily collections on deposits, a management can then transfer any excess funds to wherever they are needed, or can use or invest them as it thinks fit.

Concentration banking has been found to be effective for speeding up collections for companies with a large number of sales or distribution centers scattered throughout the country and/or when collections are made from a large number of customers remitting relatively small amounts. The result is to reduce the size of the float in accounts available to the head office several days earlier.

Lock box system

In the lock box system, where receipts are mailed by customers to a post office box controlled by bank, it is possible to reduce the float in deposits by several days and put the funds thus generated to more productive use. The lock box system helps the firm to eliminate the time between the receipt controlling disbursements.

While the firm's objective in collecting cash is to speed up collections as much as possible, the objective in disbursements is to slow them down as much as possible. Disbursements arise due to trade credit, which is a source

of fund. The firm should make the payments using the credit terms to its full extent. There is no advantage in paying earlier than agreed. By delaying payments as much as possible, the firm makes maximum use of trade as a source of fund a source which is interest free.

Playing the float

Some firms use the technique of ‘playing the float’ to maximize the availability of funds. When the firm’s actual bank balance is higher than the balance shown in the firm’s books, the difference is called the ‘payment float’. The difference between the total amount of cheques drawn on a bank account and the balance shown in the bank’s books is caused by transit and processing delays. If a financial manager can accurately estimate when the cheques issued will be deposited and collected, he can invest the ‘float’ during the float period to earn a return. However, it is a risky game and should be played very cautiously.

The other procedures, which have been effective in speeding up collections, are:

1. Using centralized billing and collection in place of decentralizing billing and collection or the lock box system.
2. Reviewing credit procedures to determine the impact of slow paying customers and bad debt losses on cash.
3. Shortening credit terms to be allowed to customers or revising the discounts offered to them so it should not be profitable for them to use the ‘float’ to finance their own operations.
4. Determining whether customers can obtain finance elsewhere and then helping them in obtaining it.

5. Setting up procedures for a special handling of extremely large remittances or foreign remittances.

6.5 PRODUCTIVE UTILISATION OF CASH SURPLUS

Cash surplus is known as a fund, which is not needed for a company's current operations. Cash surplus has two definitions, first is - surplus cash means which exceeds a minimum cash balance which most companies prefer to keep on hand covering not only their immediate operating expenditures, but minor contingencies also. Second - surplus cash means money exceeding the funds held for these purposes, plus the compensating balances maintained in banks to pay for services and to ensure credit availability. However, a cash surplus is idle cash and, therefore, unproductive. This surplus may be deployed for greater benefit of the firm. Cash surplus should be utilized in the following ways:

1. If it is available permanently, it should be deployed profitably in the business in a planned phase of re-equipment, expansion etc.
2. If it is available for a short period, it may be invested in several short term investments. However, short term cash surpluses should not be used in speculative investments.
3. Short term surplus may be used for the benefit of getting discounts from suppliers by making prompt payment or by negotiating concessional prices with the suppliers.
4. If the cash surplus is permanent, it may be utilized for repayment of capital borrowed at higher rates of interest, for the extension of loans to the subsidiaries; for the investment of funds through mergers and acquisitions or for new plant facilities in order to earn a higher rate of return; for the purchase of own securities to be used in acquisitions,

stock option plans or other payments; for the investment of developments of a new product or for improvement of old ones; and for distribution to stock holders. It is not always necessary or desirable for a company or group of companies to build up a reserve or surplus cash funds in order to make a more effective use of money. The group might have already borrowed; it is therefore, far better and the most cost effective to reduce such borrowings than to place surplus cash funds in the money market.

6.6 DETERMINATION OF OPTIMUM CASH BALANCE

The firms need cash not only to purchase raw materials and pay wages, but also for payment of dividend, interest, taxes and countless other purposes. The financial manager should determine the appropriate amount of cash balance. The proper planning of cash enables a firm to use funds more profitably.

Today the emphasis is on the right amount of cash, at the right time, at the right place and at the right cost. For the determination of optimum cash balances, the enterprises mostly rely upon analytical techniques, past experiences and discretion power of management with regard to intangible factors. The analytical techniques comprise the use of cash forecasts and analysis of the purposes for which the cash is needed.

Cash management must aim to reduce the required level of cash but minimize the risk of being unable to discharge claims against the company as they arise. If a firm holds too short of cash balance its liquidity position will become weak, although the overall profitability will be high but the risk

of technical insolvency will increase. On the other hand, if a firm maintains too much of cash balance, it will have a sound liquidity position and less risk. But its overall profitability will be reduced. Therefore, as firm should maintain an optimal cash balance which is neither short nor large. It is that balance where the liquidity and the profitability goals meet and there is a trade off between risk and return.

To find out the optimum cash balance, the transaction cost and risk of too small a balance should be matched with the opportunity cost of too large a balance. If a firm maintains large cash balance its transaction cost would increase.

6.7 CONTROL OF CASH

There are five approaches for effective control of cash:

1. Exploitation of techniques of cash mobilization to reduce operating requirements of cash.
2. More efforts to increase the precision and reliability of cash flow forecasting.
3. Maximum efforts to define and quantify the liquidity reserve needs of the firm.
4. The development of alternative sources of liquidity.
5. Aggressive search for more productive uses of surplus money assets.

Some of the important techniques of controlling cash are cash budgeting, ratio analysis, linear programming, goal programming, simulation and portfolio management. Some of the more sophisticated models have been developed by Baumal, Miller and Orr, Tobilm and Archer. The first three

models are variations of inventory models and have certain limitations. Moreover, most firms would find it difficult to utilize them in day-to-day operations; nevertheless, they provide an insight into the problems of cash management. Archer, on the other hand, employs statistical techniques to measure both transaction and precautionary balances. His model is much more practical, hence recommended for most of the firms.

6.8 WHY CASH BALANCE IS KEPT?

In the specific area of cash management the first question tried to assess how much attention the executive has given to cash management. The results are presented in below table:

Table: - 6.1

Prime reasons for keeping cash in the business

(No. of units)

REASONS	E	P	C	T	F	MIS	TOTAL
For meeting daily obligations	24	04	12	08	12	08	68
To take advantage of market condition	00	02	08	00	04	08	22
Cash discount from suppliers	08	02	00	00	04	06	20
To meet contingencies	04	08	02	04	00	06	24
Other reasons	04	00	02	08	00	12	26
Total	40	16	24	20	20	40	160

From the above table it can be seen that 42.5% of the units are keeping cash to meet the daily requirement of the industries. 13.75% of the units kept cash for the years under study to take the advantage of the fluctuations in the prices of their products. 15% of the units kept the cash to avail of discount facility from the suppliers. The remaining 16.25% of the units could not attribute the prime reason for keeping cash.

The dominant emphasis upon the ability to meet daily obligation is understandable in small scale industries. The interesting emphasis upon cash for availing of discount facility shows the keenness of the businessmen to avoid the high cost of discount credit facility.

Industry-wise break up of the units generally confirm that cash is mainly kept to meet the daily needs. The units in chemical industry are different and 33% of them remain in readiness to take advantage of market conditions. This reason has not received any place in engineering, plastic and textile industries.

The second question was meant to find the priority which cash planning received in the units under study. Results are presented below:-

Table: - 6.2
Period of cash planning

(In units)

TIME	E	P	C	T	F	MIS	TOTAL
Daily	20	00	08	08	12	32	80
Weekly	08	04	00	00	08	00	20
Monthly	12	04	08	04	00	04	32
As & when	00	08	08	08	00	04	28
Total	40	16	24	20	20	40	160

The business showed keen awareness of the need to plan cash continuously. The keenness was so high that 50% of the units did the exercise on cash planning daily. They explained that they had to be some thing like a juggler and could not afford any laxity where cash planning was concerned. The difference is noticed in plastic industries where cash planning is not done at all on daily basis. 7.5% of the industries do not plan cash position on a regular basis but the task is performed as and when they feel its need. They were not clear when and how do they decide to undertake this exercise.

No reply could be drawn regarding the basis adopted for cash planning. None of the industries prepared cash budgets or cash flow statements. They went about mostly by what they said by a feeling. This contrasted with their awareness about and emphasis on daily cash planning. All that they did was to write down the payments to be made next day and to think about how they

will find the funds for payment. Their planning procedure was a simple scheme of assessing how much inflow of cash shall come next day and what pressing payments must be made and less pressing are deferred for the day after.

6.9 HOW CASH BALANCE REQUIRED IS DETERMINED?

The method behind maintenance of cash balance was enquired next. 50% of the industries adopted the line of least resistance in determining cash balance to be carried by the units. A rule of thumb was developed and they determined the size of cash as percentage of total investment in the business. The following table presents the practices adopted by the selected small scale industries of Gujarat state.

Table: - 6.3

Basis of determination of cash balance

BASIS	NO. OF UNITS	%
A fixed sum	40	25
A % of total investment	80	50
A % of wage & purchase bills	20	12.5
Any other	20	12.5
Total	160	100

This approach appears to have satisfied them for the simple reason that their cash position is seldom a serious position. The 25% of the units did not even care to decide on a percentage basis but kept a fixed sum as cash. Although

they commented on surplus cash lying on hand but such is their sense of insecurity that they maintained a fixed amount of cash balance religiously. Some of them proudly declared that this is the mark of their caution and capacity to have an upper hand in all situations. 12.5% of the industries relate the size of cash balance to their wage and purchase bills. The owners of the industries here felt very enlightened and pointed out this to be the best method of determination of cash balance in small scale industries. And another important thing is that most of the engineering industries prefer second method whereas most of the chemical industries prefer third method.

6.10 HOW IS CASH SHORTAGE MET WITH?

The following result gives the exact position of cash shortage met with the industries.

Table: - 6.4

Methods adopted to overcome cash shortage

METHODS	NO. OF UNITS	%
Emergency borrowing at a higher rate of interest	88	55
Losing the discount on early payment	16	10
Losing the business	16	10
Forced curtailment of production capacity	40	25
Total	160	100

From the above table it can be seen that the alternatives open to the businessmen are many in the event of shortage of cash. The enquiry sought information about the alternatives actually adopted by the businessmen. It was clear that shortage of cash led to emergency borrowings where finding the funds was top urgent, its cost was less important. They even pointed out that emergency borrowings was not always a sure way of securing funds. This reliance on the emergency borrowings exhibited lack of preparedness and anticipation. The enquiry brought out in a forceful manner the drastic handling of the situation by the businessmen under the grip of cash shortage. 25% business industries could not arrange for funds and were forced to curtail production. Others met the situation by helplessly losing the business or giving up the advantage of discount. The average picture is that the businessmen carried a very casual concept of cash shortage but paid a very high price handling the cash shortage. And the important note is that the industries under 'miscellaneous group' prefer 4th alternative whereas most of the engineering and plastic industries go for 1st alternatives.

6.11 JUDGING LIQUIDITY POSITION

The results obtained on the above position are given in the following table:-

Table: - 6.5
Liquidity position

TYPES	NO. OF UNITS	%
Judgment of liquidity of funds done	112	65
Judgment of liquidity of funds not done	48	35
Total	160	100

From the above table all the miscellaneous industries do not judge the liquidity of funds whereas all the engineering and textile units judge the liquidity of funds.

Table: - 6.6

Methods used for judging the liquidity of funds

METHODS	NO. OF UNITS	%
Ratio analysis	56	50
Cash flow statement	28	25
Any other methods	28	25
Total	112	100

From the above textile industries adopt cash flow statement methods whereas the engineering industries prefer ratio analysis.

Under the conditions remaining liquid should have been a matter of highest concern for small scale industries. The above table shows that 35% of the industries had not built up a warning system regarding their liquidity or availability of funds. 65% industries which said that they do keep a watch went by the simple ratio analysis. 25% of the industries had followed no method except “what they felt right”.

6.12 EVALUATION OF PERFORMANCE OF CASH MANAGEMENT

Cash is the most crucial component of the working capital of business industries. Cash, like blood stream in the human body, gives vitality and strength to a business enterprise. The steady and healthy circulation of cash throughout the entire business operation is the basis of business solvency. Cash is an obvious and inescapable input into company's operations and as such it has to be available in sufficient doses according to needs, on a continuing basis. Cash is also the major and much awaited output or result of the company's operations and there is the need for effective plan to deploy this liquid resource to utmost productive use.

Cash is the most important asset that a business should have because payments of bills have to be made in cash. Cash is what a strange commodity. A business wants to get hold of it in the shortest time possible but wants to keep the least possible quantity on hands. If cash is not available in sufficient quantity at the proper time, obligations can not be met in time and the company will become insolvent. Because of this, the aim of cash management factors should be taken into consideration for managing cash in proper time:

Now we attempt to evaluate the cash management performance in 160 units of Gujarat state for 5 years i.e. 2002-03 to 2006-07. To evaluate different aspects of cash management performance, the following ratios have been used:-

1. TO TEST THE ADEQUACY OF CASH

- Current ratio
- Quick ratio
- Net cash flows to current liabilities

2. TO ASSESS THE EFFECTIVE CONTROL OF CASH FLOWS

- Cash to current assets ratio
- Cash turnover in sales ratio
- Liquid funds to current liabilities

3. FOR PRODUCTIVE UTILIZATION OF SURPLUS CASH

- Marketable securities to current ratio

6.13 ADEQUACY OF CASH

In planning the management of cash, the two objectives of financial management – liquidity and profitability are kept in mind. Though the cash balance must be adequate to meet obligations in right time, a large cash reserve may be wasteful since these funds may be better employed, elsewhere. But the loss of liquidity also causes the problem of profitability of the firm. The industries may not only lose cash discounts but also fail to have better purchase terms from the suppliers.

One of the important jobs of the finance manager is to maintain sufficient liquidity to enable the firm to pay off its obligations when they fall due. To test an industries liquidity and solvency the commonly used ratios are current and quick ratios. Traditionally, 2:1 current ratio and 1:1 quick ratio are taken as satisfactory standards for the purpose. The former indicates the extent of the soundness of the current financial position of a firm and the

degree of safety provided to the creditors, the latter signifies the ability of a firm to settle its current obligations on a particular date. This ability of a industries is indicative of its strong liquid position.

Position of current ratio in selected small scale industries of Gujarat state is given below:

Table: - 6.7
Current ratio for 160 units

YEARS	E	P	C	T	F	MIS	TREND
2002-03	2.4	1.4	1.6	2.25	1.6	1.21	1.74
2003-04	2.0	1.1	1.2	1.95	1.00	1.30	1.43
2004-05	2.05	1.6	1.19	1.79	1.72	1.24	1.60
2005-06	2.6	0.7	1.08	1.82	1.11	1.19	1.42
2006-07	1.9	1.2	1.45	1.48	1.50	1.2	1.46
Average	2.19	1.2	1.30	1.86	1.39	1.23	

The current is found out by the following formula:-

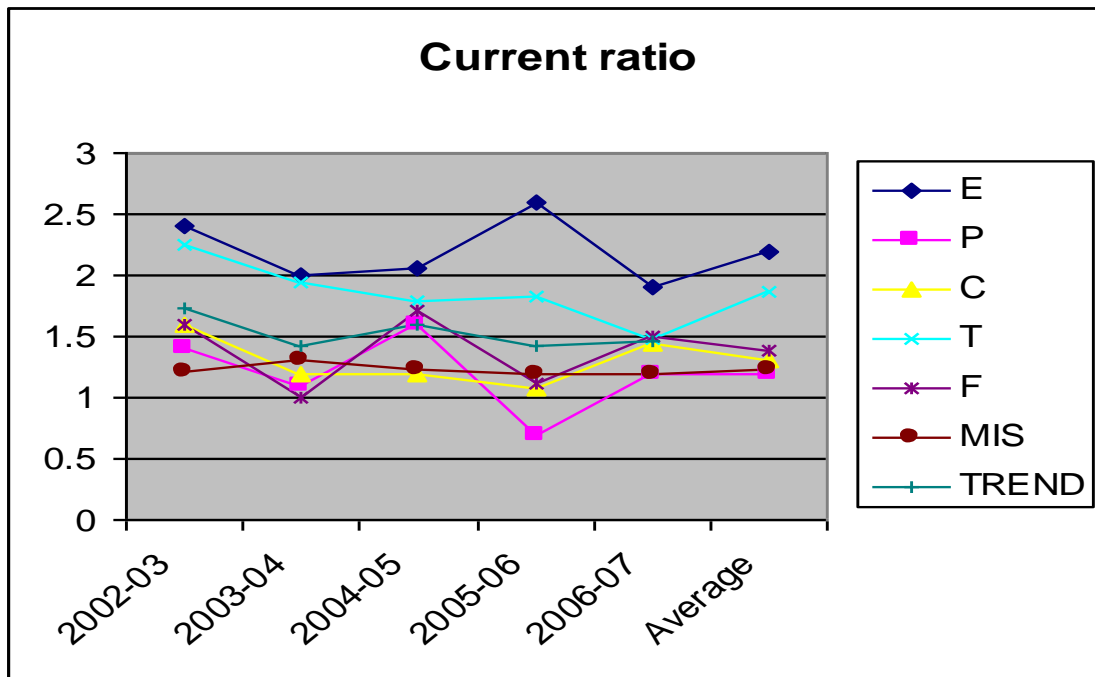
$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

The above table shows that the current ratio in all the years for all the industry groups taken together varies from 1.42 to 1.74. The trend of the industry is in a decreasing trend. And the average of the industries is also in a decreasing trend. This indicates a worsening solvency position. And the

industries are operating on high risk factor. Under pressure of payment of current liabilities, they will be weak and vulnerable.

In the engineering industries group the ratio exceeded the standard limit of 2 but showed a decreasing trend. In plastic industries the ratios was below 1:1. This means that the industry financed major portion of their current assets through current liabilities. The textile units showed the downward tendency of current over the years under study. The plastic industry showed lower current ratio. A high current ratio in engineering units indicates that some funds are lying idle. In short, the low current ratio in the industries shows that their liquid resources are below the standard norms.

Figure: - 6.1



Hypothesis

Ho: There would be no significant difference in the current ratio of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the current ratio of selected small scale industries of Gujarat state during the period of the study.

Table: - 6.7.1 ANOVA ANALYSIS
Current ratio

Source of Variation	SS	df	MS	F	F crit
Between Groups	4.075337	5	0.815067	11.44356	2.620654
Within Groups	1.7094	24	0.071225		
Total	5.784737	29			

The above table indicates the calculated value of 'F'. The calculated value of 'F' is 11.44 which is more than the table value of 'F'. The table value of 'F' at 5% level of significance is 2.620. It indicated that the null hypothesis is rejected and alternative hypothesis is accepted. So, it indicates that there is a significant difference in the current ratio of selected small scale industries of Gujarat state.

Position of quick ratio in selected small scale industries of Gujarat state is given below:

Table: - 6.8
Quick ratio for 160 units

YEARS	E	P	C	T	F	MIS	TREND
2002-03	0.60	0.69	0.94	1.76	0.88	0.64	0.92
2003-04	0.70	0.67	0.85	1.47	0.69	0.77	0.86
2004-05	0.55	0.75	0.73	1.30	1.07	0.69	0.85
2005-06	0.71	0.56	0.57	1.39	0.77	0.50	0.75
2006-07	0.59	0.53	0.84	1.14	1.00	0.60	0.78
Average	0.63	0.64	0.79	1.41	0.88	0.64	

The quick ratio is found out by the following formula:

$$\text{Quick ratio} = \frac{\text{Quick assets}}{\text{Current liabilities}}$$

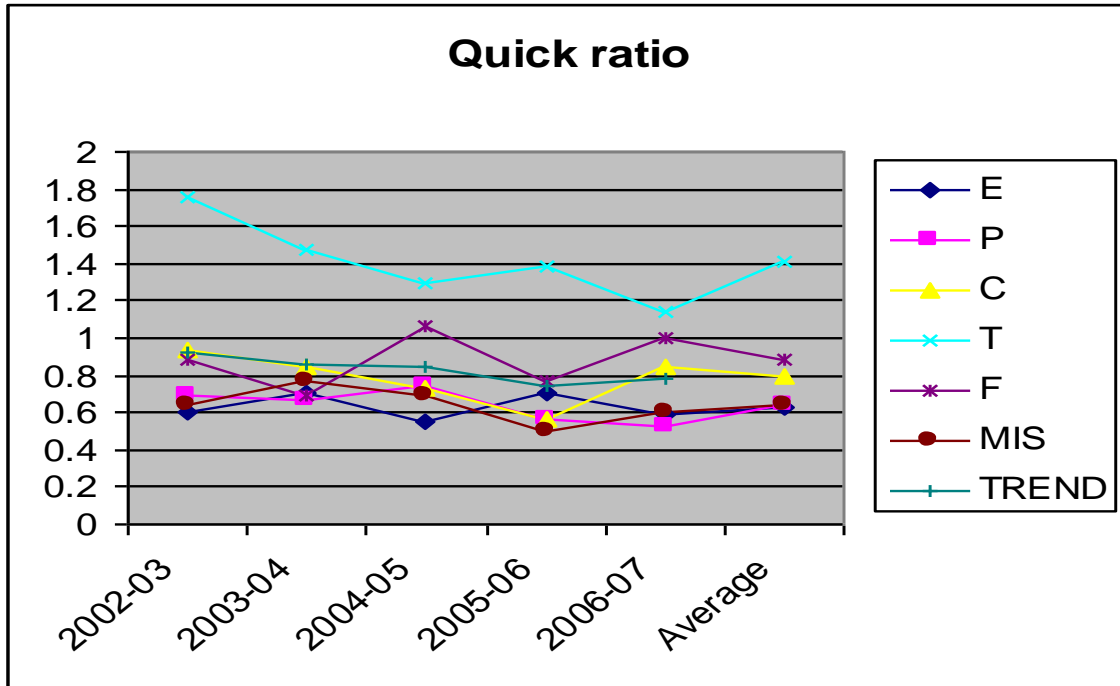
The above table reveals that the average ratio for the 5 years 2003 to 2007 range from 0.78 to 0.92 as shown in the above table. Here again the only industry which has above 1:1 Quick ratio is textile.

This shows that in the case of majority of industrial units the quick assets (cash, receivables and short term investments) are not adequate to liquidate current liabilities at particular point of time.

The current ratio was higher but the quick ratio is far below the normal 1:1 ratio, which shows that a large part of C.A. is blocked in inventories except

in the textile industries. This shows that a slight fall in the prices of inventories will further weaken their liquidity position.

Figure: - 6.2



Hypothesis

Ho: There would be no significant difference in the quick ratio of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the quick ratio of selected small scale industries of Gujarat state during the period of the study.

Table: - 6.8.1 ANOVA ANALYSIS

Quick ratio

Source of Variation	SS	df	MS	F	F crit
Between Groups	2.277737	5	0.455547	22.52026	2.620654
Within Groups	0.48548	24	0.020228		
Total	2.763217	29			

The above table indicates the calculated value of 'F'. The calculated value of 'F' is 22.52 which is more than the table value of 'F'. The table value of 'F' at 5% level of significance is 2.620. It indicated that the null hypothesis is rejected and alternative hypothesis is accepted. So, it indicates that there is a significant difference in the quick ratio of selected small scale industries of Gujarat state.

Position of net cash flows to current liabilities in selected small scale industries of Gujarat state is given below:

The above analysis shows that on the basis of the conventional approach, no industry except textile can be considered satisfactory liquid and solvent. Professor Walter has suggested that instead of matching current assets with current liabilities or quick assets with current liabilities, better results can be obtained by matching current obligations with net cash flows. Net cash flows means sales minus cost of sales plus non-cash charges. In this context, he has also suggested the computation of coverage of current liabilities ratio, which takes into account the turnover rate of current liabilities and margin of profit on sales. Coverage of current liabilities is the product of turnover of

current liabilities and profit margin. These computations can be called as tests of only technical liquidity and solvency. Although any standard has not been laid down to distinguish between liquid and non-liquid firms or solvent and insolvent firms.

$$\text{Ratio} = \frac{\text{Net cash flows}}{\text{Current liabilities}} \times 100$$

Table: - 6.9

Net cash flows to current liabilities ratio of 160 units

(In percentage)

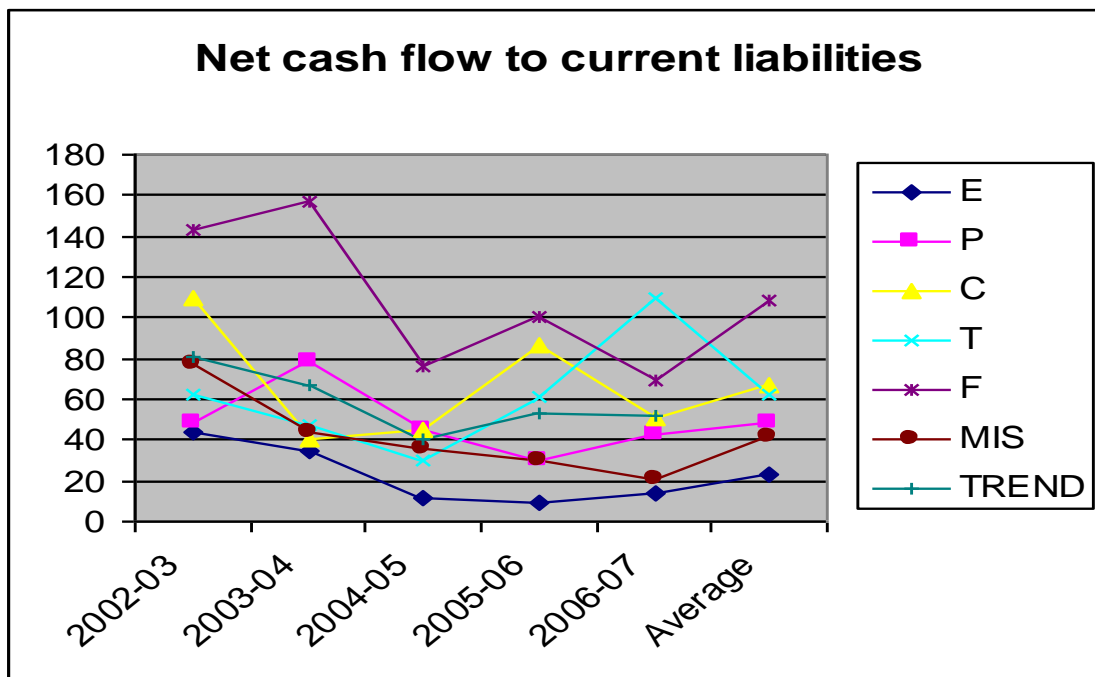
YEARS	E	P	C	T	F	MIS	TREND
2002-03	43.5	48.6	109.4	62.7	142.7	76.8	80.62
2003-04	34.6	78.3	40.6	46.9	156.8	43.3	66.75
2004-05	11.0	44.5	44.8	30.4	76.0	36.1	40.47
2005-06	9.6	29.7	86.7	60.8	99.9	30.3	52.83
2006-07	14.0	43.1	50.9	110.1	69.2	21.1	51.4
Average	22.54	48.84	66.48	62.18	108.92	41.52	

The above table shows that the average net cash flows to current liabilities ratio for the 5 year period varies between 40.47% to 80.62%. This shows that the net cash flow is not sufficient to pay off the current liabilities and a slight pressure from outsiders for payment puts the units in bad liquidity position.

Industry-wise analysis reveals that except in plastic and textile industries, in majority of industries net cash flows to current liabilities ratios shows a downward trend showing the bad liquidity position of the firms in these industries. A low ratio of net cash flows to current liabilities in engineering units prevails because a larger portion of current assets in the total assets inflates the share of current liabilities in the total working capital finance.

In most of the cases the net cash flows to current liabilities ratio is below 100%. Some financial analysts are of the view that a firm to be actually liquid and solvent should have 100% or more net cash flows to current liabilities ratio. But this view cannot be taken as correct. A firm which has even below 100% net cash flows to current liabilities ratio, may also be actually liquid and solvent because any positive net cash flows only provide added safety to current creditors. However, the higher the ratio the greater is the degree of liquidity and solvency of the firm.

Figure: - 6.3



Hypothesis

Ho: There would be no significant difference in the net cash flows to current liabilities ratio of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the net cash flows to current liabilities ratio of selected small scale industries of Gujarat state during the period of the study.

Table: - 6.9.1 ANOVA ANALYSIS
Net cash flows to current liabilities

Source of Variation	SS	df	MS	F	F crit
Between Groups	21470.56	5	4294.112	5.917378	2.620654
Within Groups	17416.28	24	725.6782		
Total	38886.83	29			

The above table indicates the calculated value of 'F'. The calculated value of 'F' is 5.91 which is more than the table value of 'F'. The table value of 'F' at 5% level of significance is 2.620. It indicated that the null hypothesis is rejected and alternative hypothesis is accepted. So, it indicates that there is a significant difference in the net cash flows to current liabilities ratio of selected small scale industries of Gujarat state.

6.14 TO ASSESS THE EFFECTIVE CONTROL OF CASH FLOWS

One of the major objectives of cash management from the stand point of increasing return on investment is to economize on the cash holding without impairing the overall liquidity requirements of the firms. This is possible by effecting tighter control over cash flows. The following important ratios indicate the achievements of the firms in this regard.

Cash to current assets ratio

Holding of unnecessary cash affects adversely the profitability of a concern, since idle cash as an asset is not only devoid of earning power, but on the contrary involves cost to be retained. Moreover, in an inflation ridden economy, cash loses purchasing power as well. The proportion of cash to total current assets directly affects the profitability of a firm. The lower is the proportion; the greater is the profitability of a firm. An upward trend reveals a slack control over such resources. The position of selected industries is presented in below table:

Formula:-

$$\text{Ratio} = \frac{\text{Cash}}{\text{Total current assets}} \times 100$$

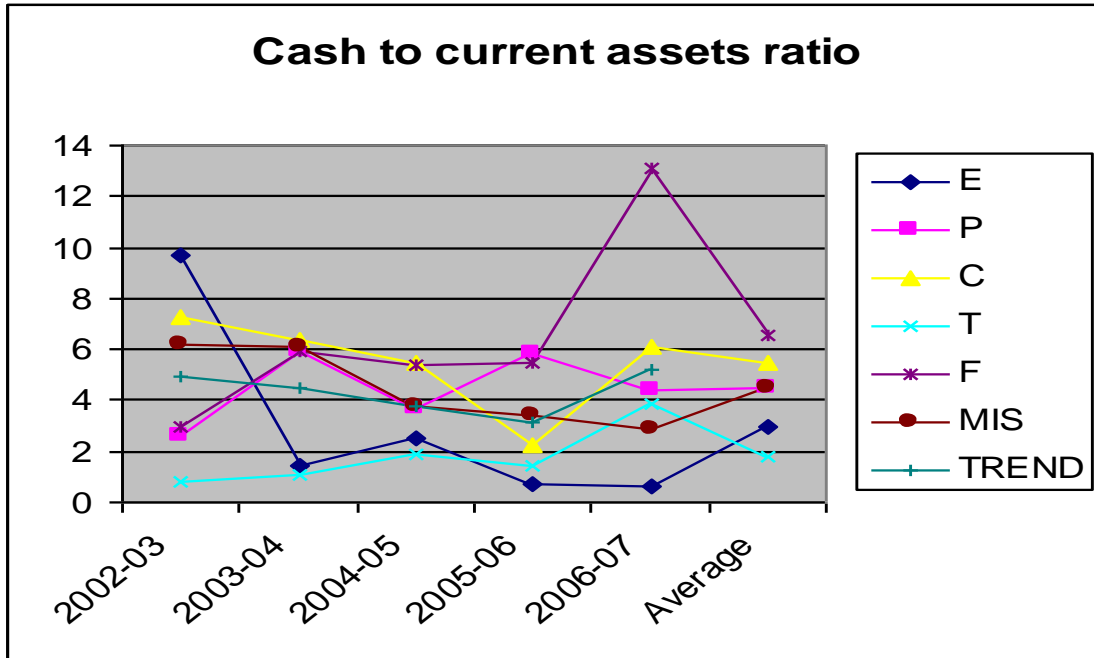
Table: - 6.10
Cash to current assets ratio of 160 units
(In percentage)

YEARS	E	P	C	T	F	MIS	TREND
2002-03	9.7	2.6	7.3	0.8	3.0	6.2	4.93
2003-04	1.4	5.9	6.4	1.1	5.9	6.1	4.47
2004-05	2.5	3.7	5.5	1.9	5.4	3.8	3.8
2005-06	0.7	5.8	2.2	1.4	5.5	3.4	3.17
2006-07	0.6	4.4	6.1	3.9	13.1	2.9	5.17
Average	2.98	4.48	5.5	1.82	6.58	4.48	

From the above table it can be seen that the average cash to current assets ratio is the lowest at 3.17% in 2005-06. All industries cash to current ratio registers a downward trend up to 2005-06. However, the ratio shown an upward trend in 2006-07 at 5.17%.

Industry-wise analysis reveals that engineering and textile industries had a lower ratio of cash to current assets as compared to all industries average in almost all the years under review. The furniture units hold the higher percentage of cash to current assets in all the years. A sharp increase in this ratio has been noticed in chemical, textile and furniture industries. The change in the ratio is also attributed to the credit squeeze resorted to by the R.B.I. from time to time.

Figure: - 6.4



Hypothesis

Ho: There would be no significant difference in the cash to current assets ratio of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the cash to current assets ratio of selected small scale industries of Gujarat state during the period of the study.

Table: - 6.10.1 ANOVA ANALYSIS

Cash to current assets ratio

Source of Variation	SS	df	MS	F	F crit
Between Groups	72.97867	5	14.59573	2.244346	2.620654
Within Groups	156.08	24	6.503333		
Total	229.0587	29			

The above table indicates the calculated value of 'F'. The calculated value of 'F' is 2.24 which is less than the table value of 'F'. The table value of 'F' at 5% level of significance is 2.620. It indicated that the null hypothesis is accepted and alternative hypothesis is rejected. So, it indicates that there is no significant difference in the cash to current assets ratio of selected small scale industries of Gujarat state.

Cash turnover in sales

Greater cash turnover in sales indicates the effective utilization of cash resources. If a business can turnover its cash large number of times, it can finance greater volume of sales with relatively lesser cash resources. This will increase the profitability of the concern. The position of selected industries is shown below:

The following formulas have been used:-

$$1. \text{ Turnover of cash} = \frac{\text{Sales or cost of goods sold}}{\text{Cash at the end}}$$

$$2. \text{ Turnover of cash} = \frac{\text{Value of production or COGS}}{\text{Cash balance}}$$

$$3. \text{ Cash in terms of No. of days} = \frac{365}{\text{Turnover of cash}}$$

Table: - 6.11

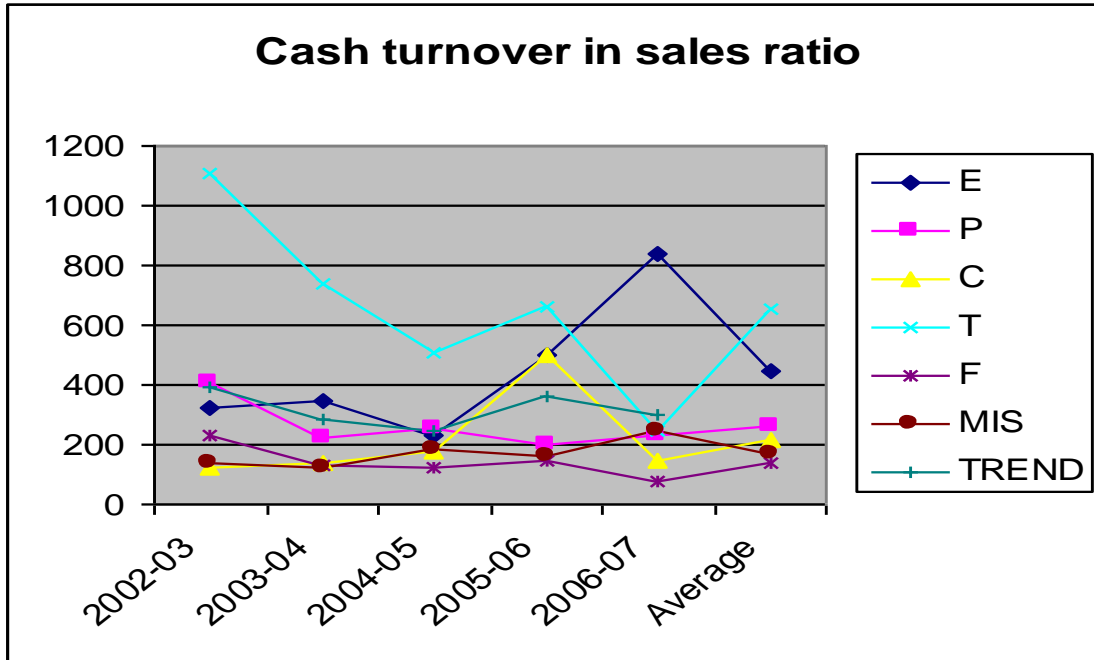
Cash turnover in sales ratio of 160 units

(In times)

YEARS	E	P	C	T	F	MIS	TREND
2002-03	321	409	124	1111	232	140	390
2003-04	350	223	140	735	127	120	283
2004-05	229	251	179	509	125	182	246
2005-06	500	201	498	663	146	160	361
2006-07	839	229	143	243	80	245	297
Average	448	263	217	652	142	169	

From the above table it can be seen that the average cash turnover in sales for 2006-07 varies between 80 times in furniture industries and 839 times in engineering industries. The all industry cash turn over registers decline in 2004-05 and in 2006-07. It comes down to 297 times in 2006-07 from 390 times in 2002-03. This shows that the units got a setback in cash turnover in the last year. And the industry-wise analysis reveals that 3 of the 6 industries cash turnover in sales ratio declines in 2006-07.

Figure: - 6.5



Hypothesis

Ho: There would be no significant difference in the cash turnover in sales ratio of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the cash turnover in sales ratio of selected small scale industries of Gujarat state during the period of the study.

Table: - 6.11.1 ANOVA ANALYSIS

Cash turnover in sales ratio

Source of Variation	SS	df	MS	F	F crit
Between Groups	974284.7	5	194856.9	5.957722	2.620654
Within Groups	784958.8	24	32706.62		
Total	1759243	29			

The above table indicates the calculated value of 'F'. The calculated value of 'F' is 5.95 which is more than the table value of 'F'. The table value of 'F' at 5% level of significance is 2.620. It indicated that the null hypothesis is rejected and alternative hypothesis is accepted. So, it indicates that there is a significant difference in the cash turnover in sales ratio of selected small scale industries of Gujarat state.

Liquid funds to current liabilities

Another way to look at the efforts of the units to control cash balance is to analyse the level of liquid funds in relation to current liabilities. The position is presented in below table:-

$$\text{Ratio} = \frac{\text{Cash} + \text{Bank Balance} + \text{Marketable Securities}}{\text{Current liabilities}} \times 100$$

Table: - 6.12

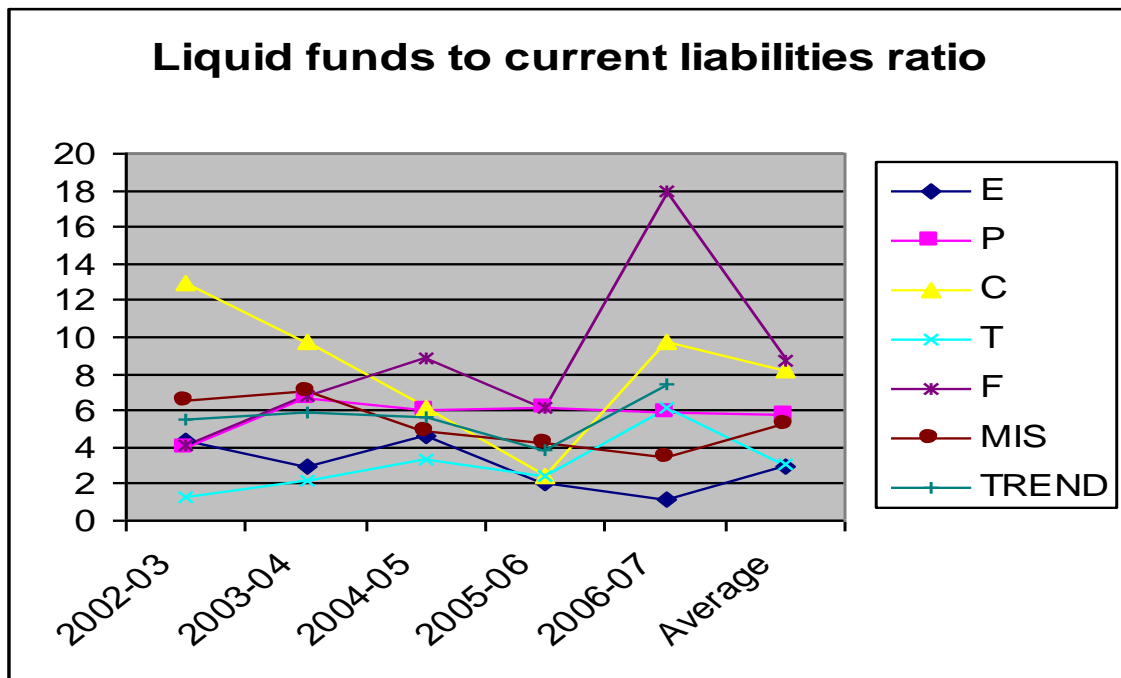
Liquid funds to current liabilities of 160 units

(In percentage)

YEARS	E	P	C	T	F	MIS	TREND
2002-03	4.3	4.0	12.9	1.3	4.1	6.6	5.53
2003-04	2.9	6.7	9.7	2.2	6.8	7.0	5.88
2004-05	4.6	6.0	6.2	3.3	8.9	4.9	5.65
2005-06	2.1	6.1	2.5	2.4	6.1	4.2	3.9
2006-07	1.1	5.9	9.8	6.2	17.9	3.5	7.4
Average	3	5.74	8.22	3.08	8.76	5.24	

From the above table shows that liquid assets as a percentage of current liabilities in 4 out of 6 industries are higher in 2003-04 than in 2002-03. A very sharp increase is noted in the case of furniture industries from 4.1 in 2002-03 to 8.9 in 2004-05 and 17.9 in 2006-07; in chemical industries from 2.5 in 2005-06 to 9.8 in 2006-07. The ratio shows a decline in 2005-06 in most of the industries. This decline can be ascribed to reduction in cash balances because of credit squeeze. And the trend analysis shows that there is a decreasing trend in the industries. But the overall average of the industries is increasing trend. So, in plastic, chemical, textile and furniture industries had the higher liquid funds to current liabilities.

Figure: - 6.6



Hypothesis

Ho: There would be no significant difference in the liquid funds to current liabilities ratio of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the liquid funds to current liabilities ratio of selected small scale industries of Gujarat state during the period of the study.

Table: - 6.12.1 ANOVA ANALYSIS
Liquid funds to current liabilities

Source of Variation	SS	df	MS	F	F crit
Between Groups	150.3867	5	30.07733	3.345147	2.620654
Within Groups	215.792	24	8.991333		
Total	366.1787	29			

The above table indicates the calculated value of 'F'. The calculated value of 'F' is 3.345 which is more than the table value of 'F'. The table value of 'F' at 5% level of significance is 2.620. It indicated that the null hypothesis is rejected and alternative hypothesis is accepted. So, it indicates that there is a significant difference in the liquid funds to current liabilities ratio of selected small scale industries of Gujarat state.

6.15 FOR PRODUCTIVE UTILIZATION OF SURPLUS CASH

Marketable securities to current ratio

The industries in Gujarat state do not invest surplus cash in marketable securities. They perhaps believe that it is neither their business nor it is in the interest of industries to purchase and sell the securities. The analysis of the financial data of the industries, however, reveals that they have some investment probable due to pressure of government bodies to do so.

6.16 REFERENCES

- Aggrawal N.K. Management of working capital, Sterling publishers (P) Ltd., New-Delhi, 1983.
- Aggrawal N.P. Analysis of financial statement, National publishing house, New-Delhi, 1981.
- Backman T.N. Credit and Collection management & Theory, Mc.Graw Hills, New York, 1962.
- Bhalla P.N. Cash management in S.T.D., Lok-udyog Vol. VI No.8. (Nov.1972)
- Chadda R.S. Inventory Management in India, Allied publishers, Bombay, 1971.
- Chawla S.K. Working capital management – A practical approach
- Greig, Cuthbert Commercial credit and accounts collection, The furniture records, London.
- Leslie R. Harward Working capital – its management and control, Mc Donald and Evans Ltd, London.
- Marting John Control of working capital.
- Mishra R.K. Working capital management, Somaiya publication (P) Ltd, Bombay.
- Norman E. Managing company cash.
- Pradhan R.S. Management of working capital.
- Rajan N. Material management in public enterprises.

CHAPTER – 7

CHAPTER 7

MANAGEMENT OF ACCOUNTS RECEIVABLES

- 7.1 Introduction**
- 7.2 Goals of receivables management**
- 7.3 Size of investment in account receivable**
- 7.4 Credit policy**
- 7.5 Types of sales**
- 7.6 Forms of credit sales**
- 7.7 Share of credit sales**
- 7.8 Reasons for credit sales**
- 7.9 Duration of credit sales**
- 7.10 Credit policy followed by the firm**
- 7.11 Cost benefit trade off**
- 7.12 Credit terms**
- 7.13 Types of customers and credit policy**
- 7.14 Credit standards**
- 7.15 Collection procedures**
- 7.16 Evaluation of credit risk**
- 7.17 Cash discount**
- 7.18 Realisation of dues**
- 7.19 Performance evaluation of receivable management**
 - Size of receivable**
 - Share of receivable to sales**
 - Average collection period**
 - Bad debts losses**
- 7.20 References**

7.1 INTRODUCTION

All firms by their nature are involved in marketing either goods or services. Only a part of sales is on cash basis and a large portion of sales involves the use of credit. A firm grants credit to protect its sales from the competitors and to attract the potential customers to its product by offering favourable terms. When a firm grants credit to its customer, that customer becomes a debtor to the firm and known as accounts receivables. A firm, therefore, carries receivables for its customers for some period, which depends upon the requirements of customers at one end and the credit sanctioning capacity of the firm on the other. The three characteristics of receivables, viz, element of risk, economic values and futurity. Explain the basis and the need for efficient management of receivables. Receivables management is also termed as credit management.

7.2 GOALS OF RECEIVABLES MANAGEMENT

Not a single firm can stand in competitive market without credit sales. Hence, it has become compulsory for every firm to manage its receivables. The purpose of credit management is neither to maximize sales, nor to minimize the risk of bad debt. If the only objective is to maximize sales, then the firm would sell on credit to all. On the contrary, if minimization of bad debt risk is the only purpose, then the firm would not sell on credit in such a way that sales are expanded to that extent to which risk remains out of an acceptable limit. Thus, to achieve the goal of maximizing the value, the firm should manage its trade credit:

1. To obtain optimum volume of sales;
2. To control the cost of credit and to keep it at minimum;
3. To maintain investment in debtors at optimum level.

According to S.E.Bolten, “The objective of receivables management is to promote sales and profits until that point is reached where the return on investment (in further finding of receivables) is less than the cost of funds raised to finance that additional credit (i.e. cost of capital)”. The purpose of any commercial enterprise is earning of profit. Credit in itself, is utilized to increase sales, but sales must return a profit. In other words, the basic objective of receivable management should be of maximizing the overall return on investment.

7.3 SIZE OF INVESTMENT IN ACCOUNT RECEIVABLE

The size of investment in accounts receivable is determined by a number of factors. Firstly, the percentage of credit sales to total sales affects the level of account receivables held. Although this factor certainly plays a major role in determining the investment in accounts receivable, but it is not in the control of the financial manager. In short, the nature of the business tends to determine the blend between credit sales and cash sales. For a grocery store, sales tend to be made exclusively on a cash basis. While for construction firms sales are primarily on credit. Thus, the nature of the business and not the decision of the financial manager tend to determine what proportion of sales should be on credit, or on cash.

Secondly, the level of sales is also a factor in determining the size of the investment in accounts receivable. Very simply, more is the sales, greater are the accounts receivable. At the time a firm experiences seasonal or permanent growth in sales, the level of investment in accounts receivable also increases. Thus, while the level of sales affects the size of the

investment in accounts receivable, it is not a decision variable for the financial manager.

The final determinants of the level of investment in accounts receivable are the credit and collection policies more specifically the terms of sales, the quality of customers, and collection efforts. The terms of sales specify the period during which the customer must pay and also the terms. The term can be like – is there a discount for early payment and if so; how much? The type of customer and credit policy also affect the level of investment in accounts receivable.

Collection and credit policy decisions may further affect level of investment in accounts receivables by causing changes in sales level and in the ratio of credit sales to total sales. However, the credit and collection policy variables are the only decisive variable under the control of financial manager.

7.4 CREDIT POLICY

Credit policy, involves factors determining the type of customer who is to qualify for trade credit. The policy decision of granting credit to a customer is based on either a liberal application or restricted application of a firm's overall credit standard.

The key variables in deciding to follow liberal or restrictive credit granting are clerical expenses, size of investment in receivables, bad debts expenses, and sales volume. A liberal granting policy increases sales volume but at the same time it increase clerical costs, bad debts expenses, collection expenses and carrying costs for accounts receivable. On the other hand, restrictive

credit policy reduces costs but at the same time sales volume also decreases. An approach suggested by Gitman, is that the marginal profit on sales must be compared with the cost of marginal investment in accounts receivables. Credit should be relaxed if marginal profits are greater than marginal costs; otherwise not.

A business enterprise should allow credit only to those customers who bear good credit risks. The classification of prospective customers should be according to their acceptability or non acceptability as credit risk requires a painstaking collection and analysis of all kinds of pertinent information bearing upon each customer's financial position. This process of credit investigation should be repeated with each credit extension to the acceptable grade of credit risks.

The 'character', 'capacity' and 'capital' are the three C's of factors of the credit applicant that form the very core of credit investigation. Character pertains to the integrity of the customer. Here the credit investigator should investigate the customer's inclination about making timely payments. Capacity has to do with managerial ability. The credit investigator should concentrate here on finding out whether the customer will be able to resale the goods bought on account within a reasonable profit so that he may have the means of making payments within the credit period granted. Capital is concerned with customer's financial position. Here the credit acceptor should prudently analyse and carefully calculate the liabilities of the customer and find out which of his liabilities would have priority over the obligation to the selling firm.

In determining whether or not credit should be granted to an individual customer, we are primarily interested in the customer's short run welfare. Some more recognized ratios which may be calculated for evaluating the credit worthiness of an applicant are the ratio of current assets to current liabilities, ratio of net and gross profit to sales, ratio of net profit to net worth or total assets and the ratio of quick asset to current liabilities. Credit rating services, in particular Dunn and Bradstreet, provide information's on the financial status, operations and payment story for most firms. Other possible sources of information would include credit bureaus, trade associations, chambers of commerce, competitors, bank references, public financial statements and of course, the firm's past relationship with the customer.

7.5 TYPES OF SALES

The following table gives the information relating to the types of sales made in the small scale industries.

Table: - 7.1

Types of sales done in the units

SALES	NO. OF UNITS	%
Only cash sales	12	7.5
Only credit sales	32	20
Both cash & credit	116	72.5
Total	112	100

From the above table most of the industries (72.5%) follow the commonly accepted practice of selling on cash and credit both. The special feature was

that 20% of the industries sold only on credit. Most of these small industries were found to be in textile, chemical and plastic industries, 7.5% of the industries had cash sales only. These were mainly the engineering goods manufacture. This was particularly noticed in case of textile where high competition forced the manufacturers to depend on credit facilities as a major attraction to buyers.

7.6 FORMS OF CREDIT SALES

The credit sale can be on open account or the written document may follow after the sale. The position is shown in below table:-

Table: - 7.2
Forms of credit sales

FORM	NO. OF UNITS	%
Open account	52	35
Bills receivables	96	65
Total	148	100

The above table helps to understand the nature of operations in these industries. Credit sales on acceptance were adopted by 65% of the industries. The practice of interest, however, was found in open account credit sales (35%). Open accounts represent the power and pressure which the buyers can exercise by virtue of their bulk purchases and/on market power. These accounts generally were found to be on-going arrangements. A different type of open account was also in vogue. The two parties in the same industrial area had open account arrangement for all their mutual exchanges. In the last

category, the parties supply the raw material to the engineering industries and after some process they sell the goods to the same parties and the account is settled on open account basis.

7.7 SHARE OF CREDIT SALES

The position of share of credit sales is brief in the below table:-

Table: - 7.3

Share of credit sales to total sales

% OF CR.SALES TO TOTAL SALES	NO. OF UNITS	%
No credit	12	7.5
0 to 20	32	20
20 to 40	36	22.5
40 to 60	40	25
60 to 80	28	17.5
80 to 100	12	7.5
Total	160	100

The above table reveals that credit sales form 40% of the total sales of the industries. Even though the percentage of credit sale is not high, the need for its proper management is enormous in view of limited resources of the industries. Handling of receivables, therefore, becomes a major area of concern. And most of the textile and chemical industries are selling their goods on credit and they are put in last two categories.

7.8 REASONS FOR CREDIT SALES

Generally any businessman would like to sell his goods in cash only. Therefore, it becomes necessary to ascertain the reasons for making credit sales. The results of our study on this point are given in below table:-

Table: - 7.4
Reasons for credit sales

REASONS	NO. OF UNITS	%
Tradition of the market	40	25
Promotion of sales	64	40
Need of the friends	16	10
Accommodation of special customer	20	12.5
Any other reason	20	12.5
Total	160	100

From the above table credit as a sales promotion device was accepted by 40% of the industries. The reason why this percentage was not even higher appeared to be that most of the procedures supplied to high demand market. Whatever they produced was sold. A noteworthy thing was granting credit as obligation to friends. This was prevalent mainly in plastic units where mostly the merchants have extended themselves in manufacturing as a new arm of their activities. And there is a tradition to sell the goods on credit in textile and chemical industries. Most of the plastic industries fall in the third category. Engineering and miscellaneous industries sell goods on credit because of promotion of sales.

7.9 DURATION OF CREDIT SALES

The credit period extended by the industries is presented in the following table:-

Table: - 7.5

Credit period extended by the units

PERIODS	E	P	C	T	F	MIS	TOTAL
Cash	04	00	00	00	00	08	12
Up to 1 week	08	04	04	00	08	08	32
1 to 3 weeks	20	08	00	04	08	00	40
3 to 5 weeks	00	04	08	12	00	08	32
More than 5 weeks	08	00	12	04	04	16	44
Total	40	16	24	20	20	40	160

The above table shows that a wide variation exists in the credit period extended by firms in various industry groups. 27.5% of the industries extended credit beyond five weeks to the customers. 50% of the chemical units granted credit for more than 5 weeks. Three-fourths of the industries did not allow credit for more than 5 weeks to the customers. Yet the furniture units allowed credit only for 3 weeks.

7.10 CREDIT POLICY FOLLOWED BY THE FIRMS

The credit policy of the various industries has been given in the following table:-

Table: - 7.6

Credit policy followed by the firms

POLICY	E	P	C	T	F	MIS	TOTAL
An independent credit policy	20	12	08	08	12	28	88
The same credit policy	20	04	16	12	08	12	72
Total	40	16	24	20	20	40	160

From the above table it can be seen that more than half of the industries indicated that they have developed a pattern of credit policy suited to their own needs. The remaining industries adopted the credit policy followed by other competing concerns in the industry. They gave strong impression that terms of credit did not form a topic of special enquiry. Many of them did not have any knowledge of the terms of credit other competing concerns are offering. The respondents were either too sure of themselves, even complacent or they failed to appreciate the need to know about what the other competitors are doing in this regard.

7.11 COST BENEFIT TRADE OFF

The determination of optimum investment in receivables involves a trade off between costs and benefits. The major considerations in costs are liquidity and opportunity costs. Liquidity consideration concerns with the possibility of receivables being collected in time and at their full value. As the firm's policy becomes liberal, the chances of bad debts increases and collection period gets extended. This creates a problem of liquidity. Loose credit policy also involves large investment in receivables and that adds to opportunity costs. But profitability is also expected to improve when credit policy is

relaxed. Liberal policy tends to expand sales and the increased revenue results in increased profits. The optimum credit policy will be determined by the trade off between liquidity and profitability.

It is facts that the firm has less liquidity when it relaxes its credit policy. But profitability increases as the credit policy becomes more and more liberal. The optimum credit policy should be at a point where there is a trade off between liquidity and profitability.

7.12 CREDIT TERMS

The credit term is another aspect of receivables management, which covers three aspects: cash discount, cash discount period and credit period. Changes in any of the firm's credit terms may have an effect on its overall profitability. The terms of credit should be determined in the light of needs of a firm and the established practices of the industry in this regard.

To reduce credit period and to increase flow of funds through credit sales, the sales may be offered to buyers at some cash discount as a percentage of selling price. However, the management of a business enterprise should always take note of the point that cash discount as a percentage of invoice prices must not be so high as to have an uneconomic bearing on the financial position of a concern. It should also be seen in this context that the terms of sales include net credit period also, so that cash discount may continue to retain its significance and must be prevented from being treated by the buyers just like quantity discount. To make cash discount an effective tool of credit control, a firm should also see that it is allowed to only those customers who make payments at due date. When a firm initiates or increases cash discount, the sales volume also increases, and also the

average collection period, but cost of carrying accounts receivable and bad debts expenses decreases. The decrease in average collection period and in bad debts expenses result in increased cash discount is a decrease profit margin per unit. Decreasing or eliminating cash discount would have negative effects.

When the cash discount period is increased, there is a positive effect on profits. Many customers, who were not in a position to avail cash discount facility in the past, will now take it, thereby reducing the average collection period. The negative effect on profit is the resulting slower average collection period because people who were already taking cash discount will be able to still take it and pay later. If discount period is shortened the effects would be the opposite.

Changes in credit period also affect the firm's profitability. The quantum of receivables outstanding at any point of time will vary according to the credit period granted to customers. The period of credit for each individual customer should therefore, be worked out after considering his financial position. In general, the free credit period allowed "to pay for the goods purchased on accounts tends to be tailored in relation to the period required for the business. In turn, to resale the goods and to collect payments for them". In addition to this, character of commodity, quantity involved in transaction and the difference in the economic status of customers may also influence credit period. Increase in credit period results in increase in sales. But both average collection period and the bad debts expenses are likely to increase. Thus, the net effect on profits may be negative. A decrease in credit period may have the opposite effect on profits.

In determining the best combination of the three variables the management's decision is again based on the risk return trade off. An optimum solution is achieved at a point where the resulting marginal cost and marginal gain from a decision are equal.

7.13 TYPES OF CUSTOMERS AND CREDIT POLICY

The following tables give the position on this point:-

Table: - 7.7
Terms of credit

TYPE OF TERMS	NO. OF UNITS	%
Soft	40	25
Moderate	100	62.5
Strict	20	12.5
Total	160	100

The engineering and furniture group prefer moderate where miscellaneous industries prefer strict policies. And the textile industries adopt soft policy.

Table: - 7.8
Types of credit policy for customer

BASIS	NO. OF UNITS	%
Same credit policy to all customer	100	62.5
Diff. credit policies for Govt. and Non-Govt. customer	60	37.5
Total	160	100

Most of the engineering and chemical industries follow different credit policy for Govt/Non-Govt.

Table: - 7.9
System of policy for customer

TYPE OF SYSTEM	NO. OF UNITS	%
Same policy to all customer	120	75
Some special policy to special customer	40	25
Total	160	100

From the above table plastic and miscellaneous industries are following the second alternatives.

Table: - 7.10
Changes in the credit policies

DEGREE OF CHANGES	NO. OF UNITS	%
Always	20	12.5
Sometime	100	62.5
Never	40	25
Total	160	100

From the above table the textile industries from time to time change the credit policies but furniture and miscellaneous industries do not prefer to change it.

Even a mention of dealing with any level of govt. organization, brought bad taste with the respondents. 62.5% of the industries insisted on same credit policy for govt and non-govt customers which meant that they did not care much about the govt. customers for a variety of reasons. But 37.5% of the units particularly of engineering and chemical had created different credit policies regarding their govt and non-govt. customers. In engineering they had to sell a part of their product for which raw material licences were issued to them by the government. The chemical industries, however, had so much of margin that they went in for bulk purchase orders from government agencies.

It is generally accepted that credit policy is essentially a situational response and changes from time to time. In our sample no clear picture emerged about the practices except that credit policy is more a matter of adjustment with individual customers. The changes were more marked in textile industries.

7.14 CREDIT STANDARDS

A pivotal standard in the credit policy of a firm is: what should be applied in accepting or rejecting an account for granting credit? A firm has a wide range of choice in this respect. At one end of the spectrum, it may decide not to extend credit to any customer, however, strong his credit rating may be, at the other end, the firm may decide to grant credit to all customers irrespective of their credit rating.

In general, liberal credit standards tend to push sales up by attracting more customers. This is, however, accompanied by a higher incidence of bad debt loss, a large investment in receivables, and a high cost of collection. Stiff credit standards have opposite effects. They tend to depress sales, reduce the incidence of bad debt loss, decrease the investment in receivables, and lower collection cost.

The extent to which credit standards can be liberalized; collection may have a little effect on bad debt losses. However, bad debt losses may significantly decrease as a result of additional collection expenditures. After reaching a certain point further expenditures on collection work may not prove as effective as earlier in reducing bad debt losses.

A firm has to be very cautious in taking steps to collect from the slow paying customers. If a firm is strict in its collection policy with the permanent customers, who are temporarily slow payers due to the economic conditions, they will get offended and may shift to competitors. The firm may lose its permanent business. On the contrary, if a firm is lenient in collection receivables would increase and profitability would reduce. The firm should compare the costs and benefits with an optimum collection policy. The optimum collection policy will maximize the profitability and will be consistent with the objective of maximizing the value of the firm.

In forming collection policies for slow accounts, therefore, the financial manager should attempt to evaluate the risk of potential losses in sales in addition to estimate the actual expenses of collection.

7.15 COLLECTION PROCEDURE

A variety of collection procedures can be utilized by the firm in its efforts to collect on delinquent account. The initial efforts should be very slow and become stricter as the account persists in remaining delinquent.

In order to collect the slow paying accounts, the firm should follow collection procedures in a clear cut sequence. For example:

When the normal credit period granted to a customer is over and he has not made the payment, a polite letter reminding him that the account is overdue, should be sent. If the receivables still remain uncollected, letter that are progressively strong worded are sent. This may be followed by telephone, telegram or the firm's representative's visit. If the payment is still due, the firm may proceed to legal action. Before taking the legal action, the financial

condition of the customer should be examined. If financial condition of the customer is very weak, legal actions against him simply help to cause bankruptcy. This would make the chances of getting any payment from the customer. Under such a situation, it is better to be patient or accept reduced payment in settlement of account.

Professor Albert F. Chapin suggests for the establishment of a proper collection follow up system, the use of the ledger plan or 'card tickets system'. The card tickets system is made up of a card of each delinquent, the amount, terms, due date of past due account in question, and the collection action so far taken together with its details. Of late, the use of computers has also come in vogue for the routine purpose of credit management.

It is a general practice to offer cash discounts to customers for the prompt payment of firm's dues. Cash discount is a cost to the firm for facilitating faster recovery. The customers, who have funds, would avail this offer, as this would amount to lesser cost to them. Some customers fail to pay within the specific discount period, yet they may make payment after deducting the amount of discount. Such cases must be identified and necessary action should be taken to recover the full amount.

7.16 EVALUATION OF CREDIT RISK

The evaluation of credit risk is generally understood as the risk arising from non-payment. Personal knowledge of the party and the judgment of the businessmen played the major part in risk evaluation as is given in the following table:-

Table: - 7.11
Evaluation of credit risk

METHODS	NO. OF UNITS	%
Bank reference	20	12.5
Past experience	100	62.5
Sales representative	20	12.5
Any other method	20	12.5
Total	160	100

From the above table it can be seen that 62.5% of the industries judge the credit worthiness of the customers on the basis of their past experience. The respondents appeared to be unhappy with bank as a source of reference and put greater weightage on the advice of their sales representatives. Similarly, enquiry from friends and associates in business helped them to form their judgment. All this made the evaluation of particular credit risk a matter of personal judgment which seemed to satisfy the businessmen who were interviewed. Some of them mentioned about the need of independent credit rating system in India. And all the engineering and chemical industries evaluate their customers' ability to pay through past experience. The textile industries adopt the method suggested by the sales representatives.

7.17 CASH DISCOUNT

The following tables give the position on this point:-

Table: - 7.12
Allowance for cash discount

RESPONSES	NO. OF UNITS	%
Yes	80	50
No	80	50
Total	160	100

Most of the engineering industries allow cash discount. The furniture and miscellaneous industries do not allow such a concession. But most of the parties do not avail this facility. This cost of keeping the debt due may be more than 40% a year.

The cash discount has not been a popular incentive to encourage timely payment. Almost all the industries made provision for cash discount and at the sale time they told about their experience that cash discount is hardly availed of by the customers. Delay in payments appears to be the common practice and a little awareness is shown about the high cost of the credit when cash discount is not availed of.

Table: - 7.13
Legal action against the defaulters

PERIOD OF ACTION	NO. OF UNITS	%
Always	08	05
Sometime	16	10
Never	136	85
Total	160	100

Above table shows that most of the industries do not prefer to go to court of law, instead they stopped supply to such industries. Only textile industries have gone to law court.

The industries seldom went into courts of law. Accepting the credit as bad debts was more acceptable and the industries stopped dealing with such parties. As the litigation is very costly and justice is usually very much delayed in India.

Table: - 7.14
Penal interest charges

RATE OF INTEREST	NO. OF UNITS	%
No interest	48	30
0-6	72	45
6-10	20	12.5
10 and above	20	12.5
Total	160	100

Although they insist that the payment should be made in time, yet they cannot charge interest because the industries may lose the party. Only some engineering and chemical industries do charge the interest on outstanding dues.

Charging penal interest rate has held little appeal to these industries. As a routine practice they mention it but hardly ever they insist on penal interest rate for the fear of losing business.

7.18 REALISATION OF DUES

The following table shows the position regarding the realization dues with the small scale industries of Gujarat state.

Table: - 7.15
Realization of overdue accounts

PERIOD OF COLLECTION	NO. OF UNITS	%
Within the period allowed	40	25
Overdue by 1 month	88	55
Overdue by 2 months	24	15
Overdue by more than 2 months	08	05
Total	160	100

From the above table it can be found that the realization of payment on credit sale has shown almost habitual default. 75% of the industries experienced 1 to 2 months delay. Only 25% of the industries received the

payment within the allowed period. There was a sense of helplessness about it because these industries could hardly do anything to persuade their customers to pay on time.

7.19 PERFORMANCE EVALUATION OF RECEIVABLE MANAGEMENT

After the discussion of theory of receivables management, it is but natural to go to practical side. The basic objective of receivables management is to maximize the return on investment in this aspect. If financial executives try to keep the receivables investment low, they will maintain adequate cash fund for current operations and expanding credit sales to take advantage of profit opportunities. Policies which stress cut short credit terms, strict credit standards and highly aggressive policy of collection may work to minimize bad debts losses and holding of funds in receivables. This policy may well restrict sales and profit margin and rate of return on total investment may be lower than that achievable with high level of sales receivables and profits. On the other hand, lenient credit policy may increase receivables and bad debts without compensating increase in sales and profits. Therefore, objective of receivables management is to achieve a balance which results in the combination of sales and profits that maximize the over all return on the investment. To achieve this objective the fact of close cooperation of financial executives with sales executives can hardly be over-emphasised. For this purpose we have to analyse the receivable of the firm. The following criteria are employed to evaluate the performance of receivables management in the industry:

1. Measurement of the size of receivables
2. Evaluation of the composition of receivables
3. Checking of the effective utilization of funds invested in receivables

Size of receivables

The following table shows the size of receivables in small scale industries of Gujarat state.

Table: - 7.16
Size of receivables in 160 units

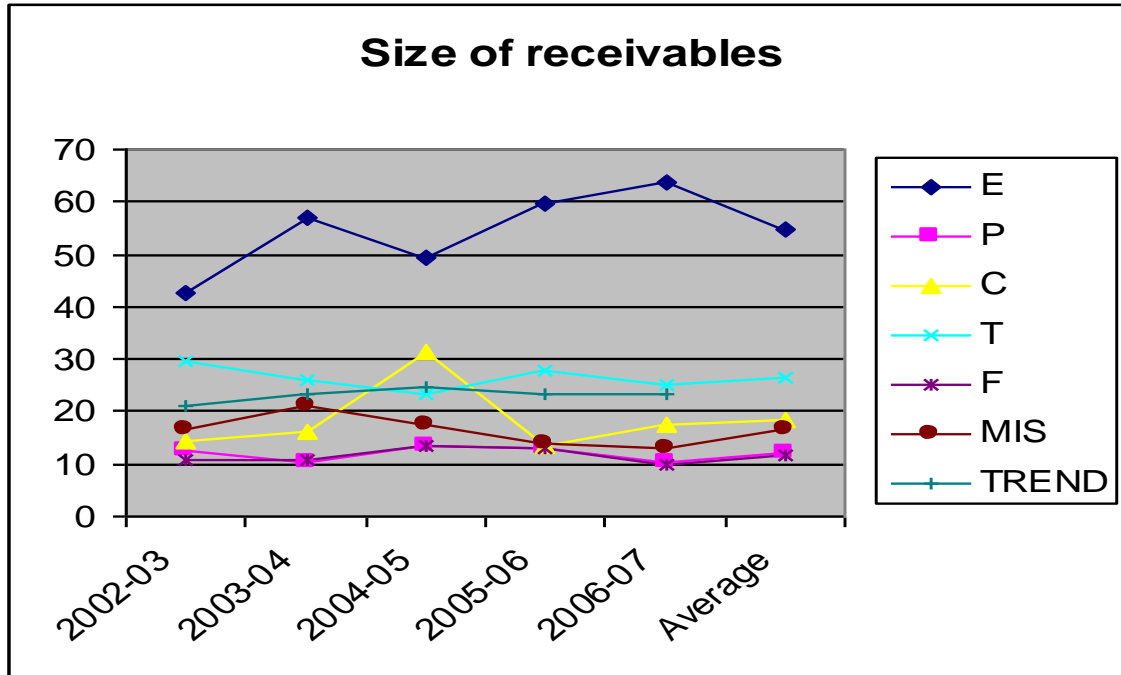
(Rs. In lakhs)

YEARS	E	P	C	T	F	MIS	TREND
2002-03	42.84	12.75	14.14	29.65	10.74	16.59	21.12
2003-04	56.78	10.54	16.12	26.01	10.81	20.94	23.53
2004-05	49.30	13.63	31.62	23.39	13.63	17.65	24.87
2005-06	59.84	12.85	13.26	27.74	13.19	13.94	23.47
2006-07	63.89	10.13	17.61	25.33	9.86	13.19	23.34
Average	54.53	11.98	18.55	26.42	11.65	16.46	

It is clear from the above tables that except in 2004-05, the increase in the size of receivables in all the year was 12.56% approximately. Individually, there had been a decreasing tendency of receivables in textiles and miscellaneous industries. There was an upward trend in receivables in case of engineering and chemical industries as compared to 2002-03. The plastic industries showed the highest decline in 2006-07 in receivables of 23.5%. The highest increase of receivables was noticed in 2005-06 in case of

engineering industries. And the overall trend of the industries is in an increasing trend. But the average of all the industries is in a decline trend.

Figure: - 7.1



Hypothesis

Ho: There would be no significant difference in the size of receivables of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the size of receivables of selected small scale industries of Gujarat state during the period of the study.

Table: - 7.16.1 ANOVA ANALYSIS
Size of receivables

Source of Variation	SS	df	MS	F	F crit
Between Groups	6591.72	5	1318.344	53.46625	2.620654
Within Groups	591.7799	24	24.6575		
Total	7183.5	29			

The above table indicates the calculated value of 'F'. The calculated value of 'F' is 53.46 which is more than the table value of 'F'. The table value of 'F' at 5% level of significance is 2.620. It indicated that the null hypothesis is rejected and alternative hypothesis is accepted. So, it indicates that there is a significant difference in the size of receivables of selected small scale industries of Gujarat state.

Share of receivables to sales

The position on this point is presented in the following table:

Table: - 7.17

Total receivables to credit sales in 160 units

(In percentage)

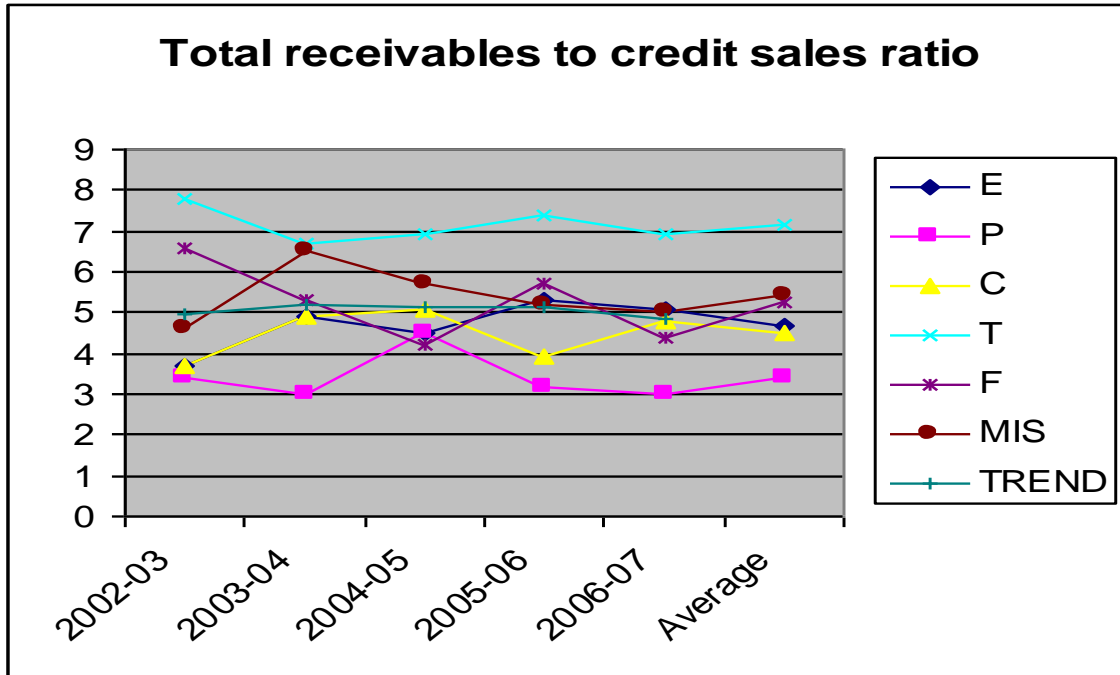
YEARS	E	P	C	T	F	MIS	TREND
2002-03	3.7	3.4	3.7	7.8	6.6	4.6	4.97
2003-04	4.9	3.0	4.9	6.7	5.3	6.5	5.22
2004-05	4.5	4.5	5.1	6.9	4.2	5.7	5.15
2005-06	5.3	3.2	3.9	7.4	5.7	5.2	5.12
2006-07	5.1	3.0	4.8	6.9	4.4	5.0	4.87
Average	4.7	3.42	4.48	7.14	5.24	5.4	

The following formula has been used for finding out:-

$$\frac{\text{Receivables}}{\text{Total credit sales}} \times 100$$

From the above table it can be seen that about 5% of the total sales was kept in receivables in small scale industries, the share decline in 2006-07. The trend was towards increase after 2002-03. Individually, the investment in receivables was higher in textile, furniture and miscellaneous industries. The share of receivables was lower in engineering, plastic, and chemical industries as compared to general average. The holding of receivables to annual sales was highest in textile industries in 2005-06. There exists a wide variation between sales and receivables. There is no correlation positive or negative between the changes in sales and receivables.

Figure: - 7.2



Hypothesis

Ho: There would be no significant difference in the total receivables to credit sales of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the total receivables to credit sales of selected small scale industries of Gujarat state during the period of the study.

Figure: - 7.17.1 ANOVA ANALYSIS

Total receivables to credit sales

Source of Variation	SS	df	MS	F	F crit
Between Groups	38.14967	5	7.629933	15.81333	2.620654
Within Groups	11.58	24	0.4825		
Total	49.72967	29			

The above table indicates the calculated value of 'F'. The calculated value of 'F' is 15.81 which is more than the table value of 'F'. The table value of 'F' at 5% level of significance is 2.620. It indicated that the null hypothesis is rejected and alternative hypothesis is accepted. So, it indicates that there is a significant difference in the total receivables to credit sales of selected small scale industries of Gujarat state.

Average collection period

Average collection period is a significant measure of collection activity and the quality of accounts receivable. A high collection period indicates slow collection process and low quality of trade credit. An old account causes heavy collection expenses and increases the possibility of more bad debt losses. The majority of firms in various industry groups reported that they did not grant credit for more than 30 days. The actual average collection period has been shown as under:-

Table: - 7.18

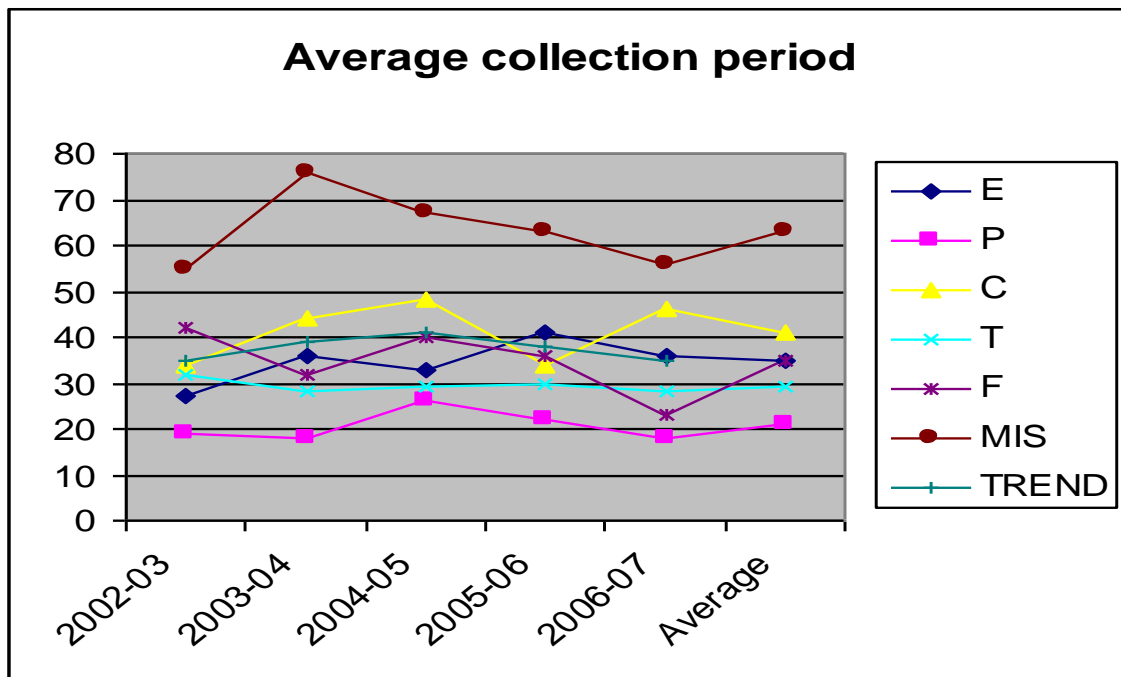
Average collection period in 160 units

(In days)

YEARS	E	P	C	T	F	MIS	TREND
2002-03	27	19	34	32	42	55	35
2003-04	36	18	44	28	32	76	39
2004-05	33	26	48	29	40	67	41
2005-06	41	22	34	30	36	63	38
2006-07	36	18	46	28	23	56	35
Average	35	21	41	29	35	63	

From the above table it can be seen that the average collection period for 2003-04 and 2004-05 is in an increasing trend but after this point it is in a decreasing trend in the year 2006-07. An interesting feature is that the plastic, textiles and furniture industries improved their position in collecting the debts. The sad state of affairs was seen in chemical and miscellaneous industries because the average collection period increased. The plastic industries always collected the dues within the credit period allowed. And the average of collection period in all industries is in increasing trend.

Figure: - 7.3



Hypothesis

Ho: There would be no significant difference in the average collection period of selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the average collection period of selected small scale industries of Gujarat state during the period of the study.

Table: - 7.18.1 ANOVA ANALYSIS
Average collection period

Source of Variation	SS	df	MS	F	F crit
Between Groups	5261.5	5	1052.3	29.06906	2.620654
Within Groups	868.8	24	36.2		
Total	6130.3	29			

The above table indicates the calculated value of 'F'. The calculated value of 'F' is 29.06 which is more than the table value of 'F'. The table value of 'F' at 5% level of significance is 2.620. It indicated that the null hypothesis is rejected and alternative hypothesis is accepted. So, it indicates that there is a significant difference in the average collection period of selected small scale industries of Gujarat state.

Bad debts losses

The ratio of bad debts to receivables shows the extent to which management has been successful in keeping the bad debts losses down to a minimum level. A firm having high bad debts losses may be the one which has either deficient credit granting policy or loose collection policy.

Table: - 7.19

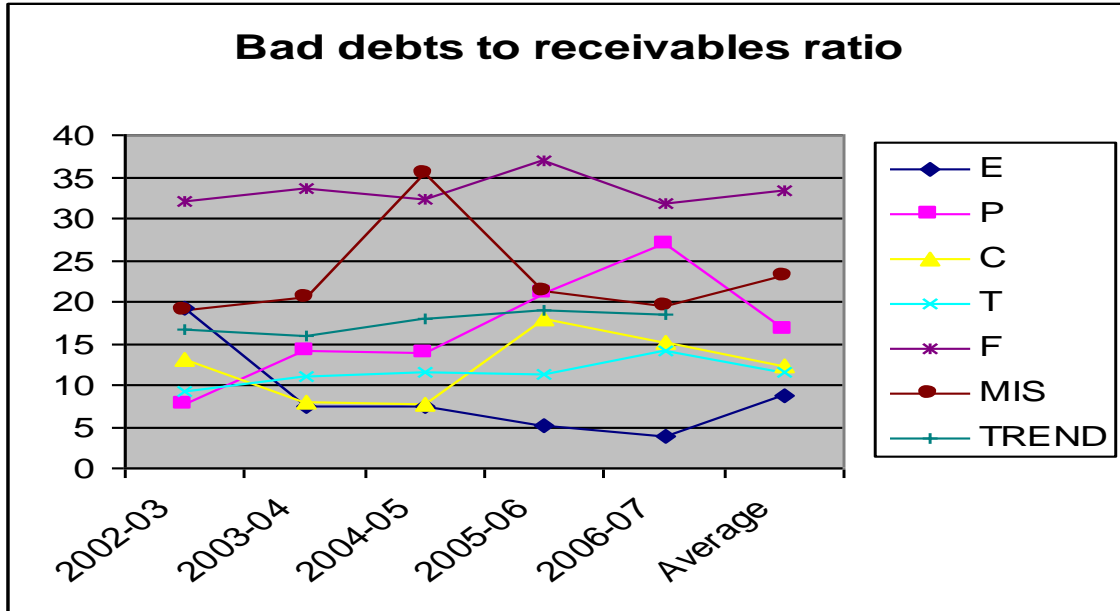
Ratio of bad debts to receivables in 160 units

(In percentage)

YEARS	E	P	C	T	F	MIS	TREND
2002-03	19.2	7.6	13.1	9.3	32.0	19.0	16.7
2003-04	7.5	14.2	7.9	11.0	33.7	20.5	15.8
2004-05	7.4	13.8	7.7	11.6	32.4	35.3	18.03
2005-06	5.2	21.0	17.9	11.4	36.8	21.3	18.93
2006-07	3.9	26.9	15.1	14.1	31.8	19.5	18.55
Average	8.64	16.7	12.34	11.48	33.34	23.12	

The above table shows that bad debt losses range between 15.8% to 18.93% of receivables outstanding over the five year period. The lowest ratio 15.8% was found in 2003-04 and the highest ratio 18.93% in the year 2005-06. Individually, the ratio of bad debts to receivables was highest in furniture and miscellaneous industries. It is appreciable that the ratio of bad debts to receivables came down from 19.2 to 3.9% in engineering industries during the period of the study. The ratio of bad debts to receivables increased from 7.6 to 26.9% in plastic industries in 5 years. And the ratio of bad debt to receivables is increased in chemical and textiles industries during the 5 years. The real impact of bad debts losses on profitability can be gauged by relating them to sales. Higher the bad debts to sales ratio, the lower the margin of profit on sales.

Figure: - 7.4



Hypothesis

Ho: There would be no significant difference in the ratio of bad debts to receivables in selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the ratio of bad debts to receivables in selected small scale industries of Gujarat state during the period of the study.

Table: - 7.19.1 ANOVA ANALYSIS

Bad debts to receivables

Source of Variation	SS	df	MS	F	F crit
Between Groups	2122.158	5	424.4315	15.28033	2.620654
Within Groups	666.632	24	27.77633		
Total	2788.79	29			

The above table indicates the calculated value of 'F'. The calculated value of 'F' is 15.28 which is more than the table value of 'F'. The table value of 'F' at 5% level of significance is 2.620. It indicated that the null hypothesis is rejected and alternative hypothesis is accepted. So, it indicates that there is a significant difference in the ratio of bad debts to receivables in selected small scale industries of Gujarat state.

7.20 REFERENCES

- Aggrawal N.K. Management of working capital, Sterling publishers (P) Ltd., New-Delhi, 1983.
- Aggrawal N.P. Analysis of financial statement, National publishing house, New-Delhi, 1981.
- Backman T.N. Credit and Collection management & Theory, Mc.Graw Hills, New York, 1962.
- Bhalla P.N. Cash management in S.T.D., Lok-udyog Vol. VI No.8. (Nov.1972)
- Chadda R.S. Inventory Management in India, Allied publishers, Bombay, 1971.
- Chawla S.K. Working capital management – A practical approach
- Greig, Cuthbert Commercial credit and accounts collection, The furniture records, London.
- Leslie R. Harward Working capital – its management and control, Mc Donald and evans Ltd, London.
- Marting John Control of working capital.
- Mishra R.K. Working capital management, Somaiya publication (P) Ltd, Bombay.
- Norman E. Managing company cash.
- Pradhan R.S. Management of working capital.
- Rajan N. Material management in public enterprises.

CHAPTER – 8

CHAPTER 8
INVENTORY MANAGEMENT PRACTICES

8.1 Introduction

8.2 Significance

8.3 Objectives

8.4 Purpose of holding inventory

8.5 Inventory control

8.6 Managing investment in inventory

Investment in raw materials

Investment in WIP inventory

Investment in finished goods inventory

8.7 Measuring the performance of inventory management

8.8 Maximum level of inventory

8.9 Minimum level of inventory

8.10 Review of inventory position

8.11 Ordering system for inventory purchase

8.12 Lead time taken for inventory purchase

8.13 Inventory control personnel

8.14 Size of inventory

8.15 References

8.1 INTRODUCTION

For the finance manager the literary meaning of the word 'Inventory' is stock of goods. Inventory denotes the value of raw materials, consumables, spares, work-in-process, finished goods and scrap in which a company's funds have been invested. He considers inventory as locked up capital. On the other hand side inventory is needed in plenty for the user departments. To satisfy both sides inventory is to be controlled.

Financial manager exercises control over inventory. Gopalan and Sandhily are of the opinion that uncontrolled inventory may become an organisation's cancer.

Inventories include tangible property held:

1. For sale in the ordinary course of business;
2. In the process of production for such sale;
3. For consumption in the production of goods or services for sale, including maintenances, supplies and consumables other than machinery spares.

The director of commercial audit classifies the total inventory of the public enterprises into the following two groups:

1. Raw materials, stores and spares (including in transit) loose tools, jigs and fixtures; and
2. Stock (finished and semi finished goods).

N.Rajan classifies inventories relating to the public enterprises into the following four groups:

1. Raw materials, components, tools, spares;
2. Work in progress;
3. Finished goods; and
4. Other miscellaneous goods.

Managing working capital is synonymous with controlling inventories. Good inventory management is good finance management. Even when funds are plentiful, the finance officer should be prepared to participate actively and gainfully in the formation of inventory policies designed to speed up turnover and maximize return on investment.

Inventory management may be defined as the sum total of those activities which are necessary for the acquisition, storage sale and disposal or use of materials. It is a subject which demands the attention of the top level management and influences the decisions of the planning and executive personnel.

An inventory is a list or schedule of articles comprise in an estate describing each article separately and precisely so as to show what the estate consists of. It is a well recognized asset hence gradually assuming importance as asset management.

8.2 SIGNIFICANCE

In trading or distributive firms, major inventories are finished goods. In manufacturing firms, all the types of inventories (raw materials, work-in-progress, finished goods, and stock-in-transit) are quite important.

Raw materials, components, stores and spares, work-in-progress constitute a major part of current asset especially in heavy engineering industries. Finished goods form a sizable percentage also in trading organisations and consumer oriented industries. In industries like sugar, jute, textile, electrical goods, basic industrial chemical, rubber and rubber products, material consumption is more than 60 percent of the value of production. Generally investment in inventories forms substantial portion of the total assets employed. Short term borrowings from banks are largely affected by inventories. While materials affect the costs of goods sold, short term borrowings for inventories affect the interest charges. Both the material costs and interest charges can be reduced with better inventory planning and control.

8.3 OBJECTIVES

In context of inventory management, the firm is faced with problems of meeting two conflicting needs:

1. To maintain a large size of inventory for efficient and smooth production and sales operation,
2. To maintain a minimum investment in inventories to maximize profitability.

Both excessive and inadequate inventories are not desirable. There are two danger points within which the firm has to operate. The objective of inventory management should be to determine and maintain the optimum level of inventory investment. The optimum level of inventory lies between the two danger points of excessive and inadequate inventories.

The aim of inventory management, thus, should be to avoid excessive and inadequate level of inventories and to maintain sufficient inventory for the smooth production and sales operations. Efforts should be made to place an order at the right time with source to acquire the right quantity of the right quality at the right price. An effective inventory management should be able-

1. To ensure a continuous supply of materials to facilitate uninterrupted production,
2. To maintain sufficient stocks of raw materials in periods of short supply and anticipated price changes,
3. To maintain sufficient finished goods as inventory for smooth sales operations and efficient customer service,
4. To minimize the carrying costs and time, and
5. To control investment in inventories and keep it at an optimum level.

8.4 PURPOSE OF HOLDING INVENTORY

By holding inventories, a firm gets certain benefits, and these benefits are due to effective separation of different functions; purchasing, storing, producing and selling. Good planning and control can be achieved only by making clear separation of these functions.

For example, if a firm wants to hold adequate raw material, purchasing function becomes important. If production process is time taking, multi-stage, and subject to uncertainty, then inventories for production become far important. If the raw materials are available on a seasonal basis and customer's demand is spread throughout the year, the firm must have plenty stock of finished goods. When a firm is working in a highly competitive

selling situation, holding of finished goods becomes a critical factor for success. Inventories are held to provide cushion so that purchasing, production, and sales functions can be proceeded at their own optimum pace. In brief, holding of inventories has many purposes. The ultimate purpose is to increase the value of the firm. The different purposes of holding inventories are explained as under.

Losses of sales

Firms hold inventories to make goods available for sales. If customers need goods immediately, the firm should be able to supply. Otherwise, the customers will buy from some other firm and these firms will loss sales. Proper management of inventory means quick service and prompt delivery, particularly in a competitive situation. If goods are out of stock then sales will be lost. The purpose of avoiding losses is related to holding of finished goods inventory.

Quantity discount

Quantity discount is available if goods are purchased in large quantities. It is just like a concession in price. If a firm purchase from suppliers who offer quantity discount on bulk purchases, the firm can reduce its cost of production. Quantity discount reduces the cost of raw materials and other like inputs. As long as the cost of carrying the inventory is less than the discount, it is possible to avail discount.

Order costs

It is assumed that the order costs per order are fixed at least in the short run, i.e. during an accounting year. But in practice a part of the order cost may be

variable. The less the number of orders, the less the total order costs. To reduce the order costs, the number of orders should be reduced, this is done by purchasing larger quantities per order.

The purpose of reducing order costs is associated with the holding of raw materials and other like inputs.

Efficient production runs

Inventories are held to achieve efficient production runs. In the case of process industry, or assembly industry materials and parts move from one process to another, out put of one process becomes the input of the subsequent process. If sufficient inventory of output of one process, to feed the input requirement of the subsequent process is not held, the operating cost per unit increases due to non-utilisation or less utilization of production capacity of the subsequent process. This decreases the profitability. The purpose of efficient production runs is associated with the holding of raw materials and work-in-process.

Lower prices

Raw materials, spares and other components may be purchased in bulk to take the advantage of a special offer at low prices or a temporary recession in prices. Similarly if it is anticipated that there will be large price increase in future, bulk purchases may be made at the current market prices to take the advantage of low cost in future.

In both the case of bulk purchase the purpose is to reduce the cost of materials input, and thereby increasing or maintaining the profitability.

However, this is feasible only when carrying cost of inventories do not exceed the benefit arising from lower prices.

The purpose of lower prices is associated with holding of raw materials, spares and other supplies.

Safety stock

Provision of safety stocks of raw materials, work-in-process, and finished products is an important aspect of inventory management. The principal purpose is to protect the firm from the risk associated with shut down, non-performance of sales contract, and a failure of supplies of raw materials. Some of the reasons of shut down may be industrial disputes, machine breakdown in one unit or in one process. By holding safety stock, some protection is provided against the whole factory becoming idle.

It may be noted that the risks involved in no-provision of safety stock ultimately affect the profitability and goodwill of the firm.

Specific customer order

If the specific order of the customer is not supplied due to stock out of ancillary or supporting components, there is the risk of annoying customers, erosion of goodwill and image. Such risk is not limited to loss of one order, but it may multiply and continue for a long period. It may adversely affect the profitability of the firm.

Seasonal sales requirements

One of the purposes of holding inventories is to protect the firm against the risks involved in not matching the stock of goods with the seasonal sales requirements. Failure to meet seasonal sales requirements affects profitability via incurrence of costs and losses.

All the aforementioned purposes of holding inventories can be grouped into the following three categories:

1. Transaction motive
2. Precautionary motive
3. Speculative motive

Inventories kept transaction motive help smooth production and sales. Inventories held with precautionary motive protect the firm against the risks of uncertainty about demand, supply and other related factors. Inventories held with speculative motive benefit the firm due to the price fluctuations and changes in demand and supply.

8.5 INVENTORY CONTROL

Why do we want to control inventory? Typical answers to this question may be: to provide customer service in the face of sales and production fluctuations, to take action against expected increase in sales; to handle production variation; to manufacture goods in economic production runs to promote flexibility in plant scheduling, to promote more flexible raw materials price; to take advantage of a favourable raw material price, to take advantage of distribution costs; to provide buffer for over runs or mis-runs; to keep storage equipment operational; to allow for errors in measuring and

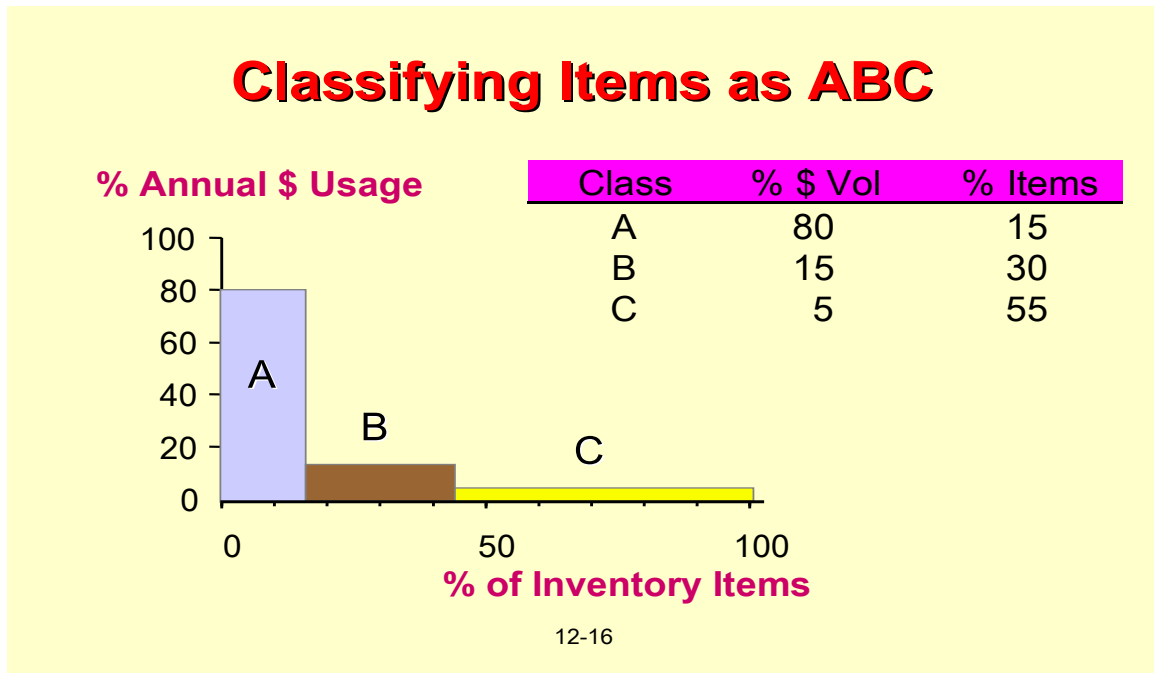
recording production and sales, to protect against price and cost changes, to minimize costs and maximize profits; to avoid running out of stock; to keep inventory within the available storage capacity; to control capital investment; to maximize sales or share of market. More often than not there will be two or more answers to this question. Many of these answers are overlapping too.

Various systems have been developed by business concerns to control their inventory. The ultimate objective of inventory control programme is to provide maximum customer service at a minimum cost. Some of inventory control systems are discussed below:

ABC Analysis

Where there are many items in the inventory it becomes essential to have a value item analysis (popularly known as ABC or Always Better Control Analysis) which attempts to relate how the inventory value is concentrated among the individual items. This analysis is made by classifying the items into three categories A,B, and C; A being the most important and being the least. The classification is based on value, usage rate and criticality of the item. All these criteria may be given specified weightages after classification, the items are ranked by their values and then the cumulative percentages of total value against the percentage of items are noted.

Figure: - 8.1



A detailed analysis of inventory may indicate in above figure that only 15% of the items account for 85% of the value; another 15% of the value and the remaining 80% items account for 10% of the value. The importance of this tool lies in the fact that it directs attention to the key items. The term ABC means the high value items are considered in the A category, medium value in the B category and low value in the C category. Different control mechanisms have to be devised for each category.

R.S.Chadda provides the following useful guidelines for selective control.

Particulars	'A' Items	'B' Items	'C' Items
Control	Tight	Moderate	Loose
Requirement	Exact	Exact	Estimated
Check	Close	Some	Little
Expediting	Regular	Some	No

Minimax system

This is one of the oldest methods and is still widely in use. For each type of inventory a maximum level is set above which demand presumably will not exceed as well as a minimum level is also set representing a margin of safety required to prevent out of stock condition. The minimum level also governs the ordering point. An order of sufficient size is placed to bring inventory to the maximum point when the minimum level is reached.

Two bin system

In this system, the stock of each item is separated into two piles, bins or groups. In the first bin a sufficient supply is kept to meet current demand over a designated period of time, in the second bin, safety stock is available to meet the demand during the lead time necessary to fill up the order. When the first bin stock is exhausted and more requirements occur, the stock in the second bin is used to cover those requirements.

Order cycling system

In this system periodic reviews are made to each item of inventory and orders are placed to restore stock to a prescribed supply level. The frequency of review generally depends upon the critical nature of the item. For instance, the critical items may require relatively short review cycles. On the other hand, the lower cost non-critical items are given longer review cycles since stock-outs would be less costly. At each review date the required amount is ordered to bring the inventory to the predetermined supply level.

Statistical inventory control systems

A number of firms with widely spread distribution system find the use of mathematical models and electronic computers to work out distribution patterns, inventory locations and levels that best reconcile considerations of customer service, manufacturing and distribution cost, and inventory turnover. Thus mathematical approaches have been developed to help inventory management decisions. In the United States, more operational research efforts have been devoted in controlling inventories to any other problem area in business and industry.

8.6 MANAGING INVESTMENT IN INVENTORY

Inventory of raw materials, processed goods and finished products serve ‘a buffer’ or ‘change absorbing’ function. The general functions of inventory management are (i) to minimize investments in inventory, and (ii) to meet the demand for different types of inventory efficiently and adequately. Functions of inventory management involve (a) taking such decisions and actions which minimize the direct and indirect costs associated with holding of inventories; (b) taking such decisions and actions which maximize the sum total of different benefits from holding of inventories. The major decisions faced by the management of a firm relate to the following questions:

1. How much to order?
2. When to order?
3. What safety stocks to keep?
4. What stock-out probabilities and levels are acceptable?

Basic major inventory levels of raw materials, work-in-process and finished products are examined below:

1. INVESTMENT IN RAW MATERIALS

All manufacturing firms have to carry inventory of raw materials which include stores, spares, suppliers, sub-assemblies and purchased components. The investment in the inventory increases with purchases and goes down as material components, stores, etc. are issued for conversion into the production process and are taken up in work-in-process inventory.

The level of raw material inventory is influenced by the following considerations:

1. Safety stocks
2. Determining economic order quantity
3. Determining the re-order point
4. Balancing of costs and risks

Safety stocks

They serve a cost reducing function by minimizing risk of production due to 'out of stock'. A decision required as to the likely cost inflating or income looking consequences of running out of material stocks. Management must consider the probabilities of running out of stock, the size of inventory in relation to delays in production or delivery of orders and the relation of the cost of carrying inventory to the cost of being out of stock.

Procurement lead time and conditions of supply determine the level of safety stocks. The time gap between the date of sending an order and the date of

getting it delivered is called 'lead' time. Attention has to be given to the speed and reliability with which supply can be expected. A firm may carry small stock of an item in raw material inventory, if its supplier is nearby and customarily carries sizeable stocks on hand. On the other hand, a key component is made available on a 'made to order' basis from a far-off manufacture that have heavy backing of orders, larger inventory of this item is essential. Supplies of some seasonal raw materials, (available at only certain times of the year) require a heavy accumulation of inventory. Similarly threats from events like industry-wide strike among the suppliers of a particular item of raw material may also affect inventory levels.

The predictability of production needs affects the inventory levels which is set in terms of anticipated usage in production. Once levels are set in these terms, fluctuations in anticipated and actual usage are responsible for many of the changes in inventory investment. If it is difficult to plan productions accurately, unexpected fluctuations are absorbed to a considerable extent by safety stocks. It may be mistake not to use safety stocks for this purpose. If there is a random increase in the rate of use of some items, the safety stock of that item can be allowed to go down rather than to place rush orders to replenish the inventory.

The cost of being out of stock may be the cost of closing the production line. In some process industries such as oil refinery and steel mills, this cost may be very high. The cost of emergency purchase orders should also be considered. Management should not push investment in safety beyond the point where the added cost of carrying inventory exceeds the savings gained by avoiding delays in following orders. But it is difficult as time consuming

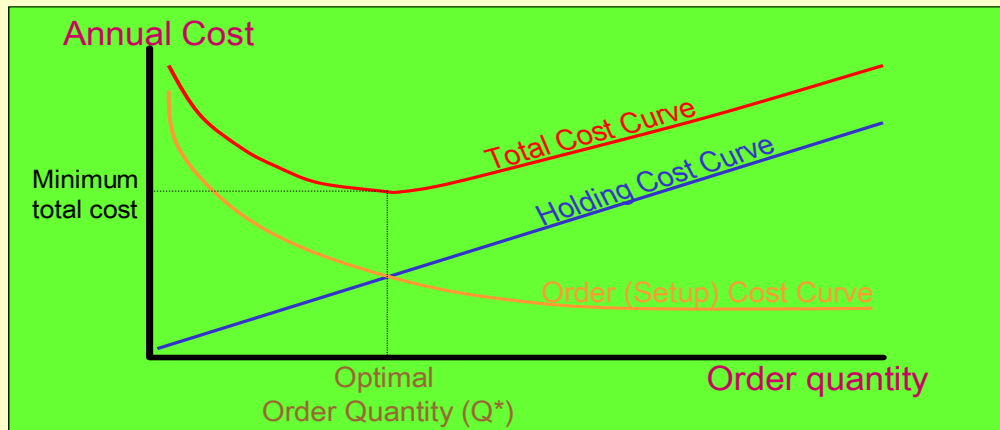
to estimate this point. Therefore, efforts should be directed to those inventory items which account for a significant Rs. Value of the total inventory, coming under a category, and also to those which are especially critical to the maintenance of an even flow of production and sales.

Determining economic order quantity

The economic order quantity (EOQ) means the size of order that will result in the lowest total of order cost and carrying cost for an item of inventory. There is an optimum point between the number and frequency of ordering and carrying of inventory. Frequency of ordering affects ordering costs. Carrying (holding) of inventory affects carrying cost. At the optimum point, the marginal cost of ordering is just equal to the marginal carrying cost. Thus, economic order quantity is that order quantity where marginal cost of ordering is equal to marginal carrying cost. At this the total of these two costs is the lowest. Thus, the use of EOQ model helps in minimizing a cost function.

The EOQ involves a trade off between ordering costs and carrying costs. If the quantity or size of each order is large, the number of the total orders will be small and also the total ordering costs will be less. But large size of orders, increase the average stocks of inventories and as a result, the carrying cost also increases. The relationship between ordering costs and carrying costs for trade off purpose is explained in below figure:

Figure: - 8.2



12-29

The EOQ can be determined by the use of the following formula:

$$EOQ = 2FU/PC$$

Where EOQ is economic order quantity (in units), U is estimated annual usage of the item (in units), F is cost of handling an order expressed as rupee per order (fixed cost). P is cost price per unit and C is cost of carrying inventory stated as a percentage of the average inventory value (variable cost).

It is not possible to determine EOQ for each item of inventory; EOQ may be computed for items which are relatively small in number but account for a very large percentage of total inventory value, i.e. 'A' category items. Even for these items, the use of EOQ does not provide sufficiently close control.

Management must give constant attention to the rate of use, procurement lead time and safety stocks. With high value items the size and timing of each purchase order is a separate decision.

The above formula of EOQ is based on the following assumptions:

1. Demand is known

Although it is difficult to predict accurately the firm's level of sales for individual item, the marketing manager must provide sales forecast. Using past data and future plans, a reasonably accurate prediction of demand can often be made. This is expressed in units sold per year.

2. Cost of running out of goods are ignored

Cost associated with shortages, delays or lost sales are not considered. These costs are considered in the determination of safety level in the reorder point system.

3. Safety stock level is not considered

The safety stock level is the minimum level of inventory as firm wishes to hold on as a protection against running out. Since the firm must always be above this level, the EOQ formula need not consider the cost of maintaining the safety stock level.

4. Purchasing price per unit is constant

The purchasing price of inventory is assumed as fixed irrespective of the order size. If any quantity discount is available, which is often the case, price per unit is influenced by the order quantity. This violates the applicability of the EOQ formula. However, the EOQ formula can still be used as a starting

point for analyzing the problem. To determine the optimal order size when quantity discounts are available.

Determining the re-order point

The re-order point is computed to know the point of time when the order should be placed so that the firm does not face a situation of stock out. Re-order gives the answer in terms of units of inventory. With the help of order point, an order is placed as soon as inventory stock is reduced to a particular quantity. According to James C. Van Horne, “The optimal order points the level of inventory at which we should order the economic order quantity of additional stock”.

For computing the re-order point, the data and information, the following are required:

1. Lead time
2. Usage rate, and
3. Safety stock

Lead time is the time gap between the date of sending an order and the date of getting the delivery of the goods. Usage rate is the average daily consumption of raw materials or the average daily sale of finished goods. Safety stock is the minimum quantity of inventory which a firm decides to always keep protecting itself against the risks and losses of stoppage in production and sales due to non-availability of inventory. Under such situation, the re-order point is simply that inventory level which will be maintained for consumption during the lead time.

The formula of re-order point is:

Re-order point = Time x Average usage

Balancing of costs and risks

In the determination of the optimum inventory level, the cost of carrying raw material inventory is of major significance. This includes the cost of storage facilities, property, insurance, loss of value through physical deterioration and cost of obsolescenes. A figure for interest on investment should also be included in this estimate of costs. In many firms financial resources are limited and the problem of raising funds becomes so that the need to minimize investment is given the dominant consideration inventory policies. Often an unexpected rise in prices of certain items of raw material may increase investment to maintain a given volume of inventory.

And the following table shows the extent and percentage of raw material to aggregate inventory in 160 selected small scale industries of Gujarat state.

Table: - 8.1

Extent of raw material to aggregate inventory in 160 units

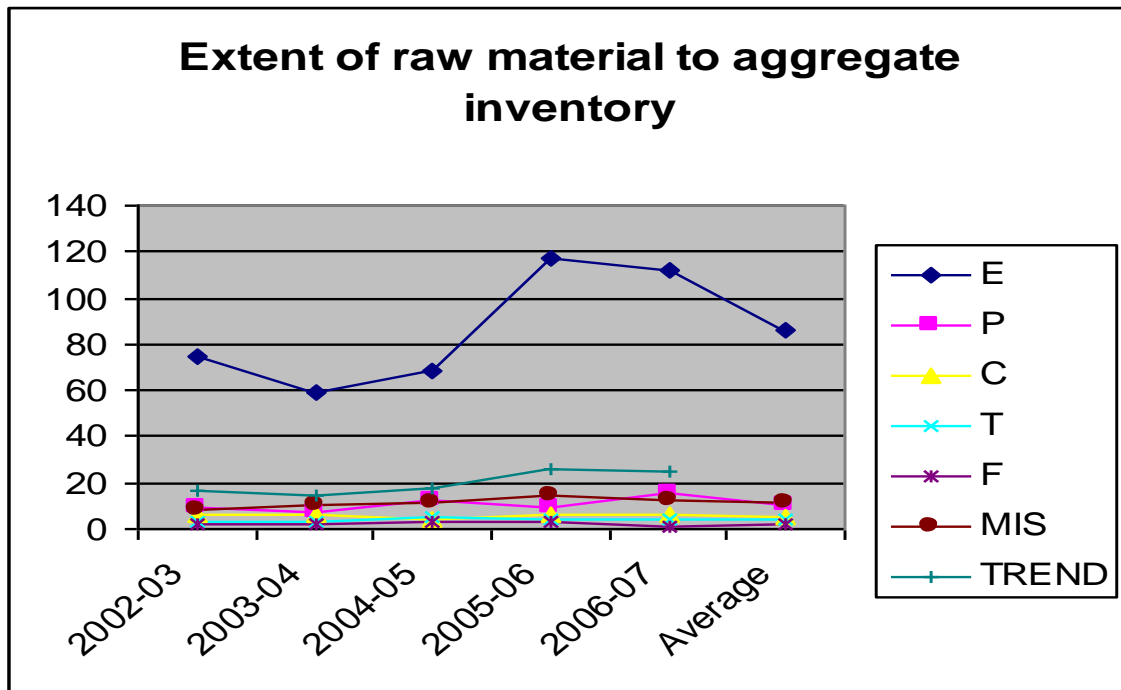
(In lakhs)

YEARS	E	P	C	T	F	MIS	TREND
2002-03	74.73	9.38	5.88	2.65	1.63	7.82	17.02
2003-04	59.57	6.90	6.15	3.23	2.41	10.74	14.83
2004-05	68.14	12.17	4.49	5.51	2.79	11.15	17.38
2005-06	117.1	9.08	5.95	3.84	2.65	14.11	25.46
2006-07	112.03	15.98	5.71	3.77	1.33	12.92	25.29
Average	86.31	10.70	5.64	3.80	2.16	11.35	

It is clear from the above table that for all the years under study, the industries kept a significant share of raw material to aggregate inventory. The maximum trend of raw materials was kept in 2005-06 which was 25.46 of total inventory. There was an increasing trend, except in 2006-07 because the industries could not purchase many raw materials due to non-availability. Individually, the share of raw materials kept in engineering and plastic industries was higher. These industries deal with the precious material. And the share of raw material to aggregate inventory was lowest in case of textile and furniture industries. Because their raw materials were being procured from indigenous sources. Again between chemical and textiles such percentage had been lower in textile since the main raw materials required for this industry come from the neighbouring districts. And the average was highest in case of engineering industries.

In order to develop an idea about raw material inventory servicing the need for raw material, it is interesting to note that the value of these industries maintained in their inventory had close connection with the value of raw material consumption.

Figure: - 8.3



Hypothesis

Ho: There would be no significant difference in the extent of raw material to aggregate inventory in selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the extent of raw material to aggregate inventory in selected small scale industries of Gujarat state during the period of the study.

Table: - 8.1.1 ANOVA ANALYSIS
Extent of raw material to aggregate inventory

Source of Variation	SS	df	MS	F	F crit
Between Groups	26729.08	5	5345.815	44.72548	2.620654
Within Groups	2868.601	24	119.5251		
Total	29597.68	29			

The above table indicates the calculated value of 'F'. The calculated value of 'F' is 44.72 which is more than the table value of 'F'. The table value of 'F' at 5% level of significance is 2.620. It indicated that the null hypothesis is rejected and alternative hypothesis is accepted. So, it indicates that there is a significant difference in the extent of raw material to aggregate inventory in selected small scale industries of Gujarat state.

2. INVESTMENT IN WORK-IN-PROGRESS INVENTORY

This inventory comprises the goods in the process of manufacture. It includes the cost of raw materials transferred to the work-in-progress account plus charges for wages and other direct costs of manufacture together with an allocation of overhead cost. The length of complete productive process determines the value of this inventory at a given time. In case of ship building business, production and assembly of the complicated parts will extend over many months as against bottling plant processing aerated water. Thus, technological considerations largely dictate the length of time required for the production process. But management policies also have significant influence on the investment in processed goods inventory.

Sometimes, actions that speed up the production process may increase output without proportionately increasing the in-process inventory. For example, second and third shifts may be added to increase production without a proportionate increase in inventory. The firm having poor production scheduling and control faces problems and delays in moving jobs through the plant and as a result find much larger amounts tied up in processed inventory. Other factors which influence investment in processed goods inventory are: volume of production, price levels of raw materials used, wages, and other items that come into production costs. In planning the outflow of each item to support this inventory, it is necessary to determine which of the anticipated expenses will require payment and to provide for these payments according to the time schedule.

And the size of semi-finished goods has been shown in the below table:-

Table: - 8.2

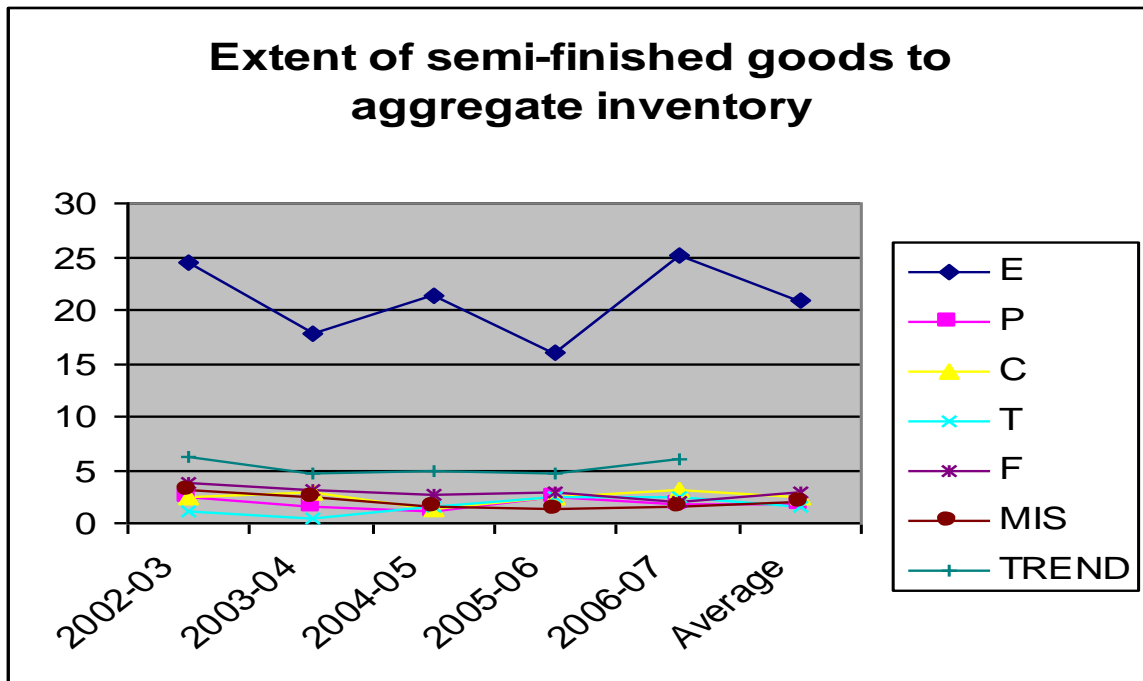
Extent of semi-finished goods to aggregate inventory in 160 units

(In lakhs)

YEARS	E	P	C	T	F	MIS	TREND
2002-03	24.34	2.45	2.52	1.09	3.81	3.06	6.21
2003-04	17.68	1.50	2.86	0.50	3.03	2.55	4.69
2004-05	21.42	1.19	1.29	1.63	2.65	1.50	4.95
2005-06	15.98	2.38	2.55	2.52	2.89	1.29	4.60
2006-07	25.16	1.87	3.13	2.38	1.94	1.46	5.99
Average	20.92	1.88	2.47	1.62	2.86	1.97	

From the above table the share of semi-finished product was significant on case of chemical and furniture industries. The engineering, plastic and miscellaneous industries tried to bring it down in all the years under survey. And the over trend of the industries is in a decreasing trend. But the average of the industries is very high in case of engineering industries. Because its require more semi-finished goods in case of production.

Figure: - 8.4



Hypothesis

Ho: There would be no significant difference in the extent of semi-finished goods to aggregate inventory in selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the extent of semi-finished goods to aggregate inventory in selected small scale industries of Gujarat state during the period of the study.

Table: - 8.2.1 ANOVA ANALYSIS
Extent of semi-finished goods to aggregate inventory

Source of Variation	SS	df	MS	F	F crit
Between Groups	1470.501	5	294.1001	93.8329	2.620654
Within Groups	75.22312	24	3.134297		
Total	1545.724	29			

The above table indicates the calculated value of 'F'. The calculated value of 'F' is 93.83 which is more than the table value of 'F'. The table value of 'F' at 5% level of significance is 2.620. It indicated that the null hypothesis is rejected and alternative hypothesis is accepted. So, it indicates that there is a significant difference in the extent of semi-finished to aggregate inventory in selected small scale industries of Gujarat state.

3. INVESTMENT IN FINISHED GOODS INVENTORY

Finished goods inventories are built up with additions from the production line and are reduced with sales. The business firms may find it advantageous to maintain high level of finished goods whose demand is uneven, small or seasonal. Inventory of such finished goods enables management to have longer production run and more even and efficient production scheduling. Inventories of finished goods are also carried due to the seasonal supply of vital raw materials because demand for such finished goods is spread throughout the year. This is mostly true in agro based industries like canned goods, sugar, cotton textiles, jute, tea, etc. Inventories of finished goods may be influenced by sales consideration. The widely spread distribution system in some companies may require maintenance of inventory at a high level.

Industries in seasonal business often try to force merchants to share the inventory burden.

Inventory of finished products, as seen earlier, varies inversely with sales. If sales fall below expectations and production cannot be cut back immediately, unsold goods pile up. If sales decline is short lived and expected to pick up in the near, production may give maximum return on investment. In case the declining trend of sales persists then action may be taken to cut back drastic production and to bring inventories in line with reduced sales prospects. Otherwise the manufacturers will experience severe cash stringency even leading to business failure. This critical relationship of sales forecasting to effective inventory management can hardly be over emphasised. Increasing efforts are being made by management to improve their services to customers according to their intentions such as to react promptly to shifts in demand.

Finished goods represent goods in stock ready for sale and distribution. It should be, however, remembered that the finished goods must not remain in stock for a long period in the case of jobbing concern which produces only after getting an order. The manufacturing industries should minimize investments in this component of inventory, for they have to finance also their trade debtors. The following table shows the extent of finished goods to aggregate inventory in 160 industries of Gujarat state.

Table: - 8.3

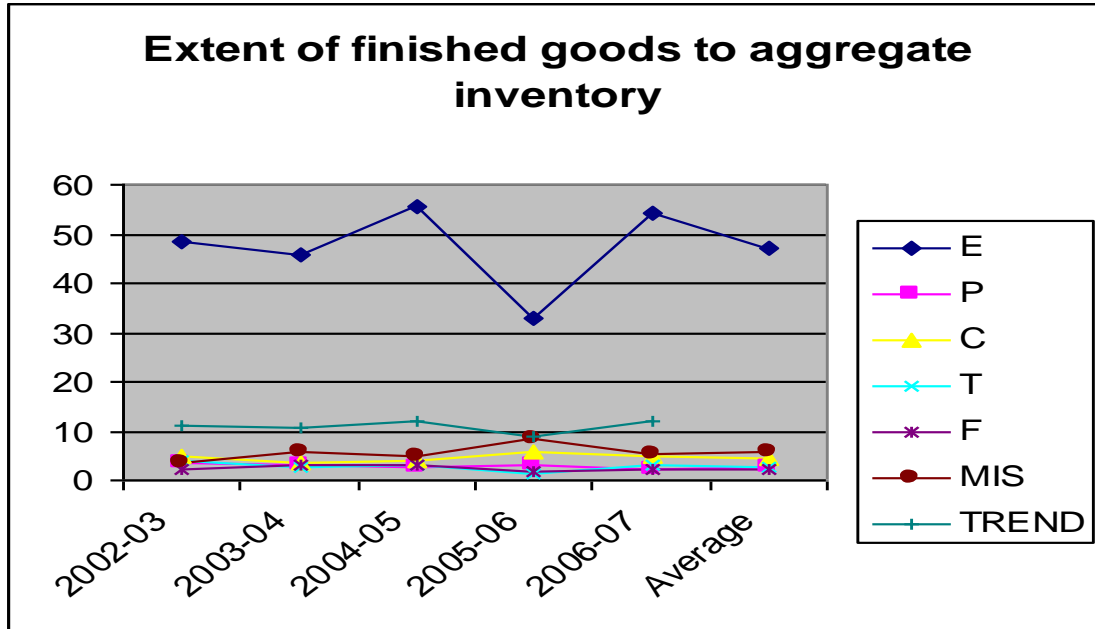
Extent of finished goods to aggregate inventory in 160 units

(In lakhs)

YEARS	E	P	C	T	F	MIS	TREND
2002-03	48.28	3.50	4.90	4.01	2.38	3.77	11.1
2003-04	45.56	2.99	3.43	2.52	3.06	5.78	10.6
2004-05	55.42	2.55	3.81	3.16	2.99	4.69	12.1
2005-06	32.985	2.89	5.95	1.53	1.63	8.33	8.9
2006-07	54.06	2.07	4.79	2.99	2.14	5.54	11.9
Average	47.26	2.80	4.58	2.84	2.44	5.62	

Above table shows that both the magnitude and extent of finished goods to inventory were found the highest in the chemical and engineering industries. The decreasing was remarkable in the plastic industries. And we show that the overall trend is in a increasing trend from 11.1 to 11.9 in 2006-07. And the average of the industries is highest in case of engineering and lowest in case of furniture industries.

Figure: - 8.5



Hypothesis

Ho: There would be no significant difference in the extent of finished goods to aggregate inventory in selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the extent of finished goods to aggregate inventory in selected small scale industries of Gujarat state during the period of the study.

ANOVA ANALYSIS

Extent of finished goods to aggregate inventory

Source of Variation	SS	df	MS	F	F crit
Between Groups	7960.411	5	1592.082	111.7211	2.620654
Within Groups	342.0123	24	14.25051		
Total	8302.423	29			

The above table indicates the calculated value of 'F'. The calculated value of 'F' is 111.72 which is more than the table value of 'F'. The table value of 'F' at 5% level of significance is 2.620. It indicated that the null hypothesis is rejected and alternative hypothesis is accepted. So, it indicates that there is a significant difference in the extent of finished goods to aggregate inventory in selected small scale industries of Gujarat state.

8.7 MEASURING THE PERFORMANCE OF INVENTORY MANAGEMENT

Measuring management performance in the area of inventory management is very significant. Measurement of performance on a single item basis is easier but on an aggregate basis, complications arise because aggregate measurements often have questionable character unless individual items have related demand and supply characteristics and are controlled by similar systems. Aggregate measurements also have the disadvantage of averaging extremes.

8.8 MAXIMUM LEVEL OF INVENTORY

The idea that the businessmen need to consciously determine the maximum level of inventory to be carried by the business failed to click with most of the businessmen. And this information is presented in the below table:-

Table:- 8.4
Determination of maximum level of inventory

RESPONSES	NO. OF UNITS	%
Yes	112	70
No	48	30
Total	160	100

Most of them had one tale of suffering namely, their hardship in securing enough supply of raw material to maintain a desired level of stock. Their conception of maximum level appeared to be to secure as much raw material as they could. Thus, there was no conscious determination of maximum level of inventory. Another thing which emerges was that small units considered inventory in terms of raw material and supplies with special emphasis on those items which they could not secure on trade enquiry from open market. The stocks going into work-in-progress and the stock of finished goods seldom enter into our discussion. Any mention of these made the businessmen brush them aside as insignificant.

And the basis of maximum level of inventory is given below:-

Table:- 8.5
Basis for maximum level of inventory determination

BASES	NO. OF UNITS	%
Inventory purchase is the best use of funds	16	10
Storage space	08	05
Carrying cost of inventory	24	15
Supply condition	80	50
Price changes	24	15
Future plan for production	08	05
Total	160	100

During the course of interview the owners of the industries reported that 50% of them determined the maximum level of inventory on the basis of availability of the supply of the raw material. The pressure created by uncertain and irregular supply condition of the material forced the businessmen to give this highest consideration. They were ready to suffer the burden of carrying cost, storage space and other disadvantages in order to store up inventories at a level which will meet the hazards of supply condition. They are aware that this consumes much of their working capital but they see no way out.

An interesting finding was that only 10% of the businessmen indicated that inventories purchase was the best use of funds. This shows that the belief

that small businessmen are essentially speculators and use their inventory to take advantage of price fluctuations is not established. Only 5% of the industries determined the maximum level of inventory in view of their future plan of increasing the production volume.

8.9 MINIMUM LEVEL OF INVENTORY

The following table shows the basis adopted for determining minimum inventory in the selected small scale industries of Gujarat state.

Table:- 8.6
Basis for minimum level of inventory determination

BASES	NO. OF UNITS	%
Consumption for a fixed period	80	50
Consumption during procurement time	60	37.5
Consumption during procurement time and safety stock	20	12.5
Total	160	100

From the above table it can be seen that the much better awareness in small scale industries in organizing the minimum level of inventory. They could indicate clear basis of determining the minimum level to be maintained. The primary purpose was that production must not suffer for this reason. 50% of the industries used the consumption for a fixed period of production as a basis for determining minimum level of inventory. A noteworthy feature was that procurement time as a basis for minimum stock was adopted only in

those industries whose materials were either imported or could be procured, through the long govt. channel. Strangely enough, the industries which based their calculations on consumption for a fixed period of production did not care to consider procurement time as a relevant factor. They were confident about their ability to secure what they needed somehow from some where. Only 12.5% were really cautious and calculating in their inventory management. They used as their basis the consumption during procurement time and safety stock.

8.10 REVIEW OF INVENTORY POSITION

Nothing is static in the business world. This famous dictum is true in respect of inventory policies. For an efficient and effective management of inventories, it is essential to review periodically the level of inventory and to effect changes in the light of the review:-

Table:- 8.7

Period of inventory review report

PERIOD OF REPORT	NO. OF UNITS	%
Daily	32	20
Weekly	32	20
Monthly	40	25
Quarterly	12	7.5
Yearly	08	05
As and when	00	00
Necessary	36	22.5
Total	160	100

The above table shows that the businessmen gave high importance to review of inventory position in regular reports with all their limitations of manpower and methods, the major part of owners prepared a detailed review within a month. They indicated that if they had the resources they would like to prepare the review reports even for a shorter duration. Their desire to keep a regular check on this vital area appears to be keen and sincere. 5% of the industries reviewed it on yearly basis.

There exists a wide variation among the industries with regard to the review period of inventory levels. For better inventory control it is desirable that review of inventory levels, particularly of important items, should take place regularly at shorter intervals so that necessary corrective steps are taken in time.

8.11 ORDERING SYSTEM FOR INVENTORY PURCHASE

The success of any inventory programme by large depends upon the practices and procedure followed by the purchasing department in an industries. Two basic problems of inventory control are: (i) when to order; (ii) how much to order. To solve these problems many formulate and models have been developed. Decisions regarding these two problems are very much affected by the costs associated with the procurement of stock. The ordering system must strike a balance between these two costs so that the total inventory costs are the minimum.

Table: - 8.8
Ordering system of inventory purchase

ORDERING SYSTEM	NO. OF UNITS	%
Fixed order quantity system	24	15
Fixed period order system	32	20
Single order system	24	15
Fixed order quantity system & fixed period order system	32	20
According to the need	48	30
Total	160	100

From the above table it can be seen that 15% of the industries placed the order for their need according to fixed order quantity system. 20% of the total industries placed the order on the basis of fixed period order system. In their ordering system the elements of capacity and convenience can be clearly seen. The high level of use made of the fixed period order system was mainly for saving the work and the difficulty of handling occasional orders. The administrative work and managerial attention both were minimized. Those who adopted the ordering according to need were 30% of the industries. This adoption was mainly the result of the constraints on money resources. The ordering was postponed till the pressure for need made it unavoidable. And the fixed period and fixed order system are the most popular systems. It is due to the fact that 'EOQ' system presumes that the material is freely available in any quantity at all the times, whereas in most of the cases it is not so.

For an effective control of inventories, the management should be kept posted with the latest stock position of different items. This is usually done by preparing periodic inventory reports.

Table: - 8.9
Inventory control system

CONTROL DONE	NO. OF UNITS	%
Stores and purchase dept.	40	25
Production dept.	80	50
Both the dept.	40	25
Total	160	100

Most of the engineering and chemical industries do the control over inventory through the production department. And in 50% of the industries inventory control is exercised at production centre. In these small scale industries production department played the key role in inventory control. The general ideas put forward at the interviews was that the users of material are the best controllers of the material. Purchase and store department was not an active and separately designed activity. In places, it did not exist as separate entity. In more enlightened industries, the management had organized it separately. 25% of industries projected themselves as most modern by insisting that production and purchase stores departments both were involved in inventory control. But the nature and manner of this involvement could not be made clear.

8.12 'LEAD TIME' TAKEN FOR RECEIVING THE MATERIAL

The industries require some time to process the order placed. Time is also taken by the supplier to execute the order. This period is called 'lead time'. There are sometimes fluctuations in the lead time and/or in the consumption rate. If no provision is made for these variations, stockouts may take place causing disruption in the production schedule of the industries.

Table: - 8.10

Lead time taken in the purchase of material

TIME TAKEN	INDIAN RAW MATERIAL		FOREIGN RAW MATERIAL	
	NO.	%	NO.	%
Within a week	20	12.5	-	-
Within a month	80	50	-	-
More than a month	60	37.5	20	100
Total	160	100	20	100

From the above table half of the industries got their supplies within a month in case of indigenous goods. The chemical industries revealed that they got the supply within a week. The industries could not separate the administrative time and delivery time taken for receiving the supplies. Only miscellaneous and engineering industries are using foreign raw material. All chemical and textile industries are using Indian raw material. In chemical industries the raw material is available within a day or two days.

8.13 INVENTORY CONTROL PERSONNEL

The results on this point are given in the below table:-

Table: - 8.11

Authority who exercise control over inventory

AUTHORITY	NO. OF UNITS	%
Self (owner)	40	25
Accountant	40	25
Manager	80	50
Total	160	100

In all the plastic industries the control over the inventory is done by the proprietor or partners themselves. In most of the engineering industries the control is exercised by the manager. Most of the industries 50% had entrusted this task to the manager. In plastic and chemical industries even if they had the managers, this work was done by the businessman himself. On the other hand, in engineering industries, the managers looked after it even though the owners were technical people. The reason indicated was the complex nature of inventory items and their large number made it necessary for the manager to provide continuing control and supervision.

8.14 SIZE OF INVENTORY

The following table shows the size of inventory holding by the small scale industries of Gujarat state:-

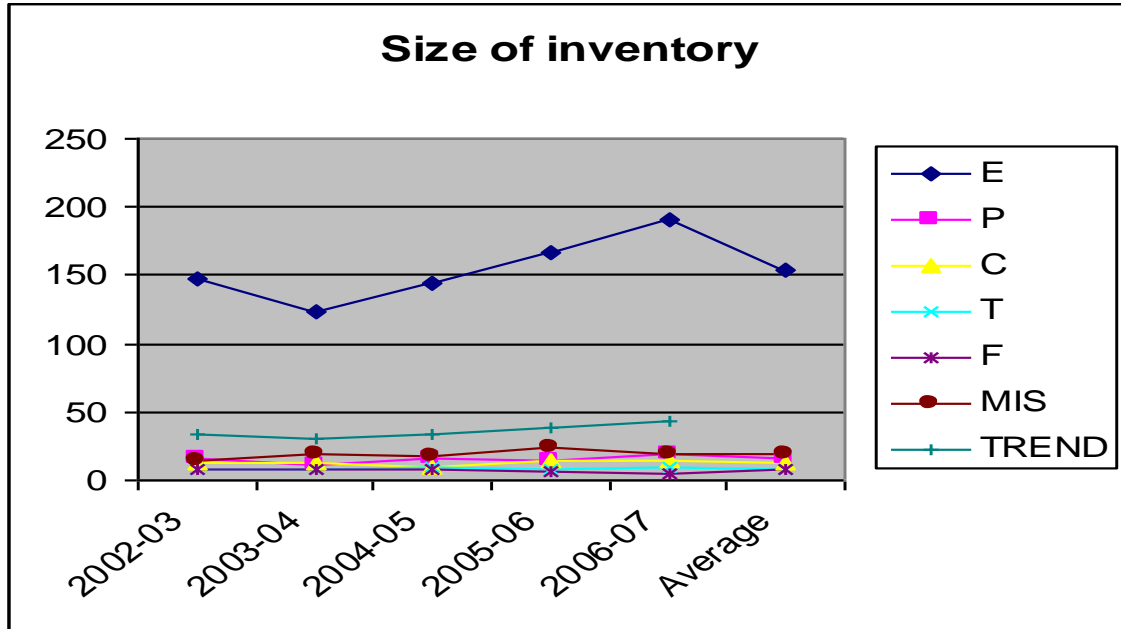
Table: - 8.12
Size of inventory in 160 units

(Rs. In lakhs)

YEARS	E	P	C	T	F	MIS	TREND
2002-03	147.36	15.33	13.29	7.75	7.82	14.65	34.37
2003-04	122.81	11.39	12.44	7.24	8.5	19.07	30.24
2004-05	144.98	15.91	9.59	10.30	8.43	17.34	34.42
2005-06	166.06	14.35	14.45	7.89	7.17	23.73	38.94
2006-07	191.25	19.92	13.63	9.15	5.41	19.92	43.21
Average	154.49	15.38	12.68	8.47	7.47	18.94	

It is evident from the above table that the size of inventory for all the industries taken together during all the years of study had a rising trend except in 2003-04. Individually, the size of inventory increased in engineering, textiles and miscellaneous industries. The trend of increase is not visible in chemical and furniture industries in the beginning, although in the later years these industries showed an increasing tendency. The increase was significant in miscellaneous industries in 2005-06. Looking to the total inventory the engineering industries account for the highest share. And the trend of the industries is an increasing trend. This shows that the industries operated with high amount of inventory.

Figure: - 8.6



Hypothesis

Ho: There would be no significant difference in the size of inventory in selected small scale industries of Gujarat state during the period of the study.

H1: There would be significant difference in the size of inventory in selected small scale industries of Gujarat state during the period of the study.

Table: - 8.12.1 ANOVA ANALYSIS

Size of inventory

Source of Variation	SS	df	MS	F	F crit
Between Groups	84361.54	5	16872.31	147.8161	2.620654
Within Groups	2739.454	24	114.1439		
Total	87100.99	29			

The above table indicates the calculated value of 'F'. The calculated value of 'F' is 147.81 which is more than the table value of 'F'. The table value of 'F' at 5% level of significance is 2.620. It indicated that the null hypothesis is rejected and alternative hypothesis is accepted. So, it indicates that there is a significant difference in the size of inventory in selected small scale industries of Gujarat state.

8.15 REFERENCES

- Aggrawal N.K. Management of working capital, Sterling publishers (P) Ltd., New-Delhi, 1983.
- Aggrawal N.P. Analysis of financial statement, National publishing house, New-Delhi, 1981.
- Backman T.N. Credit and Collection management & Theory, Mc.Graw Hills, New York, 1962.
- Bhalla P.N. Cash management in S.T.D., Lok-udyog Vol. VI No.8. (Nov.1972)
- Chadda R.S. Inventory Management in India, Allied publishers, Bombay, 1971.
- Chawla S.K. Working capital management – A practical approach
- Greig, Cuthbert Commercial credit and accounts collection, The furniture records, London.
- Leslie R. Harward Working capital – its management and control, Mc Donald and evans Ltd, London.
- Marting John Control of working capital.
- Mishra R.K. Working capital management, Somaiya publication (P) Ltd, Bombay.
- Norman E. Managing company cash.
- Pradhan R.S. Management of working capital.
- Rajan N. Material management in public enterprises.

CHAPTER – 9

CHAPTER 9
COMPARATIVE PERFORMANCE ANALYSIS OF
SELECTED SMALL SCALE INDUSTRIES OF GUJARAT
STATE

9.1 Introduction

9.2 Correlation matrix of engineering industries

9.3 Correlation matrix of plastic industries

9.4 Correlation matrix of chemical industries

9.5 Correlation matrix of textile industries

9.6 Correlation matrix of furniture industries

9.7 Correlation matrix of miscellaneous industries

9.8 References

9.1 INTRODUCTION

All statically techniques which simultaneously analyses more than two variables can be categories as ‘multivariate techniques’ or multivariable analyze it is a collection of methods for analyzing data in which a number of observation are available for each object. These techniques take account of the various relationships among variable. This is a powerful tool to analyze data represented in terms of many variables. These techniques are largely empirical and deal with the reality. They possess the ability to analyze complex data. Accordingly in most of the applied and behavioral researches, researcher generally resort to multivariate analyze techniques for realistic results. Besides being a tool for analyzing the data, multivariate techniques also help in various types of decision making.

Such factor loadings represent the correlation between the particular variables and the factor and are usually place in a matrix of correlation between the variable and the factor. When there are two or more than two independent variables present in the data, the analysis concerning relationship is known as multiple correlations. And the table generates is called multiple correlation matrix. Thus the researcher has first generates the correlation matrix

9.2 CORRELATION MATRIX OF ENGINEERING INDUSTRIES

Here, Table shows the correlation matrix of the 19 ratios of various variables of the firm engineering industries. Ratios have been calculated from the data for the period of study 2003-2007. From the table, relation between the various ratios and the degree of relation between them can be found out here.

Table:- 9.1
Correlation between the ratios of engineering industries

	Turnover of C.A.	Rate of return on C.A.	Inv. To W.C.	Rec. to W.C.	Cash to W.C.	G.P. on C.E.	N.P. to N.W	Current	Quick	N.C.F to C.L.	Cash to Current	Cash turnover in cash	L.F. to C.L.	T.R. to Cr. sales	Avg. Coll. Period	B.D. to Rec.	R.M. to A.Inv.	Semi-to A. Inv.	Finished to A. Inv.	
Turnover of C.A.	1																			
Rate of return on C.A.	-0.11	1																		
Inv. To W.C.	0.19	-0.19	1																	
Rec. to W.C.	-0.27	-0.26	-0.01	1																
Cash to W.C.	0.38	0.02	-0.73	0.27	1															
G.P. on C.E.	0.92	-0.14	0.17	-0.59	0.20	1														
N.P. to N.W	-0.32	0.87	0.21	-0.22	-0.44	-0.31	1													
Current	0.35	-0.65	0.04	-0.55	-0.09	0.61	-0.64	1												
Quick	0.11	-0.92	0.52	0.40	-0.24	0.06	-0.66	0.43	1											
N.C.F to C.L.	0.94	0.02	0.34	-0.06	0.31	0.76	-0.13	0.05	0.10	1										
Cash to Current	0.87	0.25	-0.04	-0.63	0.34	0.92	-0.03	0.34	-0.33	0.75	1									
Cash turnover in cash	-0.52	0.22	0.66	-0.10	-0.94	-0.41	0.67	-0.24	0.04	-0.36	-0.45	1								
L.F. to C.L.	0.54	0.14	-0.72	-0.16	0.91	0.49	-0.36	0.14	-0.41	0.39	0.65	-0.92	1							
T.R. to Cr. sales	-0.79	-0.41	0.25	0.50	-0.54	-0.77	-0.04	-0.12	0.51	-0.70	-0.96	0.56	-0.79	1						
Avg. Coll. Period	-0.70	-0.59	0.19	0.44	-0.47	-0.65	-0.25	0.10	0.62	-0.69	-0.90	0.42	-0.69	0.97	1					
B.D. to Rec.	0.93	0.14	-0.01	-0.54	0.39	0.94	-0.14	0.36	-0.22	0.81	0.99	-0.51	0.67	-0.94	-0.87	1				
R.M. to A.Inv.	-0.53	-0.14	0.41	-0.41	-0.90	-0.24	0.26	0.33	0.18	-0.60	-0.39	0.78	-0.76	0.58	0.58	-0.46	1			
Semii-to A. Inv.	0.12	0.93	0.06	-0.51	-0.15	0.16	0.86	-0.42	-0.82	0.22	0.47	0.30	0.08	-0.53	-0.69	0.37	-0.01	1		
Finished to A. Inv.	-0.11	0.94	-0.33	0.03	0.28	-0.24	0.74	-0.79	-0.87	0.06	0.16	0.02	0.27	-0.39	-0.57	0.09	-0.40	0.78	1	

The above table exhibits that the turnover of current assets highly with positive relation with gross profit on capital employed, cash to current assets and bad debt to receivables ratio. And the gross profit to capital employed also highly correlated with current ratio, cash to current ratio and bad debt to receivables ratio also. And net cash flow to current liabilities also highly positive correlated with the bad debt to receivables ratio.

And the rate of return on current assets is negatively correlated with the quick ratios. Raw material, semi-finished goods and finished goods has very close relation with total current ratio, quick ratio and average collection period of the debtors.

9.3 CORRELATION MATRIX OF PLASTICS INDUSTRIES

Here, Table shows the correlation matrix of the 19 ratios of various variables of the firm plastics industries. Ratios have been calculated from the data for the period of study 2003-2007. From the table, relation between the various ratios and the degree of relation between them can be found out here.

Table:- 9.2
Correlation between the ratios of plastics industries

	Turnover of C.A.	Rate of return on C.A.	Inv. To W.C.	Rec. to W.C.	Cash to W.C.	G.P. on C.E.	N.P. to N.W	Current	Quick	N.C.F to C.L.	Cash to Current	Cash turnover in cash	L.F. to C.L.	T.R. to Cr. sales	Avg. Coll. Period	B.D. to Rec.	R.M. to A.Inv.	Semi-to A. Inv.	Finished to A. Inv.	
Turnover of C.A.	1																			
Rate of return on C.A.	-0.73	1																		
Inv. To W.C.	0.69	-0.07	1																	
Rec. to W.C.	0.86	-0.30	0.95	1																
Cash to W.C.	0.81	-0.21	0.97	0.98	1															
G.P. on C.E.	-0.18	-0.53	-0.67	-0.58	-0.66	1														
N.P. to N.W	-0.79	0.98	-0.16	-0.39	-0.28	-0.44	1													
Current	-0.73	0.23	-0.95	-0.90	-0.94	0.48	0.26	1												
Quick	-0.06	-0.33	-0.66	-0.42	-0.52	0.41	-0.34	0.73	1											
N.C.F to C.L.	0.15	-0.57	-0.41	-0.28	-0.21	0.50	-0.43	0.20	0.39	1										
Cash to Current	0.65	-0.16	0.74	0.73	0.85	-0.61	-0.15	-0.78	-0.45	0.21	1									
Cash turnover in cash	-0.24	-0.35	-0.59	-0.51	-0.66	0.87	-0.34	0.52	0.44	0.04	-0.85	1								
L.F. to C.L.	0.27	0.17	0.40	0.38	0.54	-0.69	0.19	-0.38	-0.20	0.27	0.85	-0.94	1							
T.R. to Cr. sales	-0.34	0.31	-0.45	-0.33	-0.41	-0.13	0.23	0.68	0.73	-0.23	-0.47	0.14	-0.09	1						
Avg. Coll. Period	-0.06	0.34	-0.01	0.09	0.01	-0.50	0.21	0.30	0.48	-0.45	-0.15	-0.17	0.13	0.90	1					
B.D. to Rec.	-0.19	0.68	0.51	0.25	0.41	-0.69	0.70	-0.49	-0.85	-0.38	0.50	-0.73	0.52	-0.38	-0.15	1				
R.M. to A.Inv.	-0.87	0.94	-0.24	-0.50	-0.41	-0.24	0.97	0.32	-0.36	-0.47	-0.34	-0.12	-0.05	0.15	0.08	0.62	1			
Semii-to A. Inv.	0.32	-0.28	0.45	0.39	0.28	0.21	-0.34	-0.50	-0.48	-0.46	-0.13	0.42	-0.61	-0.51	-0.39	-0.01	-0.16	1		
Finished to A. Inv.	0.56	-0.88	-0.04	0.18	0.02	0.61	-0.92	-0.03	0.44	0.24	-0.23	0.66	-0.55	-0.06	-0.13	-0.84	-0.81	0.47	1	

The above table shows that the turnover of current assets highly with positive relation with receivables to working capital and cash to working capital. And the net profit to net worth highly correlated with raw material to aggregate inventory and bad debt to receivables.

And the raw material to aggregate inventory is negatively correlated with the finished goods to aggregate inventory. And all others ratios have a closely positive or negative correlation with each other. Because this ratios is not directly affected with another position of the industries.

9.4 CORRELATION MATRIX OF CHEMICAL INDUSTRIES

Here, Table shows the correlation matrix of the 19 ratios of various variables of the firm chemical industries. Ratios have been calculated from the data for the period of study 2003-2007. From the table, relation between the various ratios and the degree of relation between them can be found out here.

Table:- 9.3
Correlation between the ratios of chemicals industries

	Turnover of C.A.	Rate of return on C.A.	Inv. To W.C.	Rec. to W.C.	Cash to W.C.	G.P. on C.E.	N.P. to N.W	Current	Quick	N.C.F to C.L.	Cash to Current	Cash turnover in cash	L.F. to C.L.	T.R. to Cr. sales	Avg. Coll. Period	B.D. to Rec.	R.M. to A.Inv.	Semi-to A. Inv.	Finished to A. Inv.	
Turnover of C.A.	1																			
Rate of return on C.A.	-0.23	1																		
Inv. To W.C.	-0.14	-0.32	1																	
Rec. to W.C.	-0.29	0.04	0.92	1																
Cash to W.C.	-0.37	0.79	0.06	0.45	1															
G.P. on C.E.	0.75	0.45	-0.46	-0.37	0.11	1														
N.P. to N.W	-0.23	0.96	-0.41	-0.10	0.59	0.46	1													
Current	0.54	-0.18	-0.75	-0.80	-0.27	0.43	-0.20	1												
Quick	0.36	0.23	-0.97	-0.94	-0.16	0.59	0.31	0.84	1											
N.C.F to C.L.	0.88	-0.63	0.16	-0.10	-0.56	0.35	-0.65	0.43	0.06	1										
Cash to Current	0.27	0.43	-0.97	-0.84	0.07	0.63	0.48	0.76	0.97	-0.09	1									
Cash turnover in cash	-0.07	-0.55	0.96	0.76	-0.23	-0.52	-0.57	-0.66	-0.91	0.30	-0.97	1								
L.F. to C.L.	0.41	0.14	-0.95	-0.95	-0.23	0.58	0.22	0.87	1.00	0.14	0.95	-0.87	1							
T.R. to Cr. sales	-0.80	0.74	-0.25	0.08	0.70	-0.21	0.71	-0.31	0.04	-0.97	0.22	-0.42	-0.05	1						
Avg. Coll. Period	-0.75	0.72	-0.33	0.01	0.73	-0.19	0.65	-0.15	0.13	-0.92	0.31	-0.51	0.05	0.98	1					
B.D. to Rec.	0.14	-0.97	0.46	0.15	-0.60	-0.54	-0.99	0.10	-0.38	0.59	-0.55	0.64	-0.30	-0.68	-0.63	1				
R.M. to A.Inv.	0.21	-0.64	-0.13	-0.50	-0.97	-0.14	-0.40	0.16	0.19	0.34	-0.02	0.15	0.24	-0.50	-0.56	0.44	1			
Semi-to A. Inv.	-0.09	-0.64	-0.31	-0.60	-0.84	-0.39	-0.44	0.31	0.29	0.11	0.10	-0.04	0.34	-0.25	-0.25	0.48	0.88	1		
Finished to A. Inv.	0.29	-0.91	0.59	0.30	-0.51	-0.40	-0.97	0.03	-0.47	0.71	-0.63	0.73	-0.39	-0.77	-0.74	0.96	0.31	0.26	1	

From the above table it can be seen that the current ratio and quick ratios have a highly correlation with the net cash to current assets, long fund to current liabilities and cash to current assets also. But they have a highly negatively correlation with the other sides also. So, there is a minor change between the other ratios of the chemical industries.

And other important point noted in the chemical industries is that there is a less chances of bad debt in the finished good or inventory because here both are highly positive correlated with each other. And there is a negatively correlated with the average collection period of the debtors. Then, cash to inventory also negatively sign, receivables to working capital also highly negative with the current and quick ratio. So, the profitability and liquidity of the industries can be maintained during this period.

9.5 CORRELATION MATRIX OF TEXTILE INDUSTRIES

Here, Table shows the correlation matrix of the 19 ratios of various variables of the firm chemical industries. Ratios have been calculated from the data for the period of study 2003-2007. From the table, relation between the various ratios and the degree of relation between them can be found out here.

Table:- 9.4
Correlation between the ratios of textiles industries

	Turnover of C.A.	Rate of return on C.A.	Inv. To W.C.	Rec. to W.C.	Cash to W.C.	G.P. on C.E.	N.P. to N.W	Current	Quick	N.C.F to C.L.	Cash to Current	Cash turnover in cash	L.F. to C.L.	T.R. to Cr. sales	Avg. Coll. Period	B.D. to Rec.	R.M. to A.Inv.	Semi-to A. Inv.	Finished to A. Inv.	
Turnover of C.A.	1																			
Rate of return on C.A.	-0.09	1																		
Inv. To W.C.	-0.29	-0.89	1																	
Rec. to W.C.	0.03	-0.78	0.71	1																
Cash to W.C.	0.07	-0.82	0.85	0.88	1															
G.P. on C.E.	0.25	0.88	-0.82	-0.81	-0.66	1														
N.P. to N.W	-0.77	-0.23	0.35	0.17	-0.07	-0.62	1													
Current	0.09	0.95	-0.93	-0.90	-0.90	0.92	-0.31	1												
Quick	0.11	0.98	-0.94	-0.83	-0.83	0.94	-0.38	0.99	1											
N.C.F to C.L.	0.16	-0.33	0.40	0.74	0.79	-0.23	-0.36	-0.52	-0.37	1										
Cash to Current	-0.02	-0.82	0.90	0.84	0.99	-0.67	-0.01	-0.90	-0.85	0.74	1									
Cash turnover in cash	0.07	0.98	-0.95	-0.84	-0.87	0.91	-0.31	0.99	1.00	-0.42	-0.89	1								
L.F. to C.L.	0.02	-0.87	0.91	0.84	0.99	-0.71	0.00	-0.93	-0.88	0.70	1.00	-0.92	1							
T.R. to Cr. sales	-0.46	0.83	-0.53	-0.42	-0.45	0.61	-0.03	0.63	0.70	0.05	-0.44	0.70	-0.52	1						
Avg. Coll. Period	-0.44	0.91	-0.61	-0.63	-0.61	0.72	-0.05	0.76	0.80	-0.16	-0.59	0.80	-0.66	0.97	1					
B.D. to Rec.	0.02	-0.94	0.90	0.92	0.95	-0.84	0.15	-0.99	-0.95	0.62	0.95	-0.97	0.97	-0.61	-0.76	1				
R.M. to A.Inv.	-0.53	-0.58	0.69	0.13	0.21	-0.64	0.71	-0.51	-0.63	-0.37	0.31	-0.59	0.35	-0.47	-0.39	0.39	1			
Semii-to A. Inv.	-0.67	-0.42	0.66	0.70	0.58	-0.69	0.60	-0.66	-0.61	0.51	0.61	-0.59	0.57	0.12	-0.06	0.61	0.35	1		
Finished to A. Inv.	0.12	0.34	-0.13	-0.51	-0.07	0.67	-0.64	0.39	0.41	0.04	-0.02	0.34	-0.05	0.28	0.39	-0.30	-0.17	-0.43	1	

From the above table it can also be found that current ratio and quick ratio both have a highly positive correlated with cash turnover ratio. So in the textile industries turnover of cash is going very fast comparing to other industries. But there are more chances of bad debt in the current and quick assets ratio.

And the current asset is negatively correlated with the net profit and net worth of the industries. So, if we maintained the huge current assets in the business then the profit of the company is also decrease and than and then the rate of return on investment is also decreased. So this effect is directly goes to the share price of the company or industries.

9.6 CORRELATION MATRIX OF FURNITURE INDUSTRIES

Here, Table shows the correlation matrix of the 19 ratios of various variables of the firm furniture industries. Ratios have been calculated from the data for the period of study 2003-2007. From the table, relation between the various ratios and the degree of relation between them can be found out here.

Table:- 9.5
Correlation between the ratios of furniture industries

	Turnover of C.A.	Rate of return on C.A.	Inv. To W.C.	Rec. to W.C.	Cash to W.C.	G.P. on C.E.	N.P. to N.W	Current	Quick	N.C.F to C.L.	Cash to Current	Cash turnover in cash	L.F. to C.L.	T.R. to Cr. sales	Avg. Coll. Period	B.D. to Rec.	R.M. to A.Inv.	Semi-to A. Inv.	Finished to A. Inv.	
Turnover of C.A.	1																			
Rate of return on C.A.	0.84	1																		
Inv. To W.C.	0.24	0.00	1																	
Rec. to W.C.	0.34	0.25	0.95	1																
Cash to W.C.	0.79	0.59	0.77	0.84	1															
G.P. on C.E.	0.05	0.11	0.36	0.38	0.19	1														
N.P. to N.W	0.77	0.99	0.03	0.30	0.58	0.08	1													
Current	-0.35	0.04	-0.95	-0.83	-0.78	-0.27	0.05	1												
Quick	-0.06	0.28	-0.89	-0.74	-0.53	-0.53	0.29	0.92	1											
N.C.F to C.L.	-0.46	-0.73	0.44	0.20	-0.12	0.51	-0.76	-0.49	-0.77	1										
Cash to Current	0.84	0.66	-0.24	-0.18	0.38	-0.34	0.56	0.03	0.34	-0.61	1									
Cash turnover in cash	-0.66	-0.44	0.00	-0.02	-0.46	0.70	-0.41	0.16	-0.24	0.60	-0.82	1								
L.F. to C.L.	0.71	0.62	-0.43	-0.36	0.20	-0.46	0.53	0.23	0.53	-0.70	0.98	-0.81	1							
T.R. to Cr. sales	-0.31	-0.26	0.35	0.31	-0.05	0.93	-0.26	-0.24	-0.58	0.73	-0.64	0.88	-0.73	1						
Avg. Coll. Period	-0.87	-0.54	-0.04	-0.01	-0.54	0.22	-0.42	0.28	-0.01	0.33	-0.94	0.79	-0.85	0.50	1					
B.D. to Rec.	0.26	0.26	0.89	0.98	0.78	0.31	0.34	-0.72	-0.62	0.10	-0.26	0.00	-0.40	0.25	0.11	1				
R.M. to A.Inv.	-0.36	-0.30	0.46	0.48	0.15	-0.37	-0.15	-0.28	-0.20	0.02	-0.50	-0.06	-0.49	-0.17	0.47	0.59	1			
Semi-to A. Inv.	-0.73	-0.64	0.19	0.09	-0.40	0.63	-0.60	-0.05	-0.44	0.79	-0.90	0.95	-0.91	0.87	0.79	0.09	0.11	1		
Finished to A. Inv.	-0.62	-0.83	-0.29	-0.52	-0.61	-0.61	-0.83	0.16	0.11	0.31	-0.21	-0.06	-0.11	-0.31	0.18	-0.51	0.25	0.11	1	

We know that the working capital requirement in the furniture industries is always low comparing to other industries because this type of industries is generally based on order of the customers. So from the above table it can be seen that raw material to inventory, semi-finished goods to inventory and finished good to inventory is very highly correlated with each other because this type of industries based on order or requirement but in this company bad debt chances generally higher comparing to other industries.

And the position of current ratio and quick ratio is highly correlated with each other i.e. 0.92. So it is benefited from the point of view of the industries.

9.7 CORRELATION MATRIX OF MISCELLANEOUS INDUSTRIES

Here, Table shows the correlation matrix of the 19 ratios of various variables of the firm miscellaneous industries. Ratios have been calculated from the data for the period of study 2003-2007. From the table, relation between the various ratios and the degree of relation between them can be found out here.

Table:- 9.6
Correlation between the ratios of miscellaneous industries

	Turnover of C.A.	Rate of return on C.A.	Inv. To W.C.	Rec. to W.C.	Cash to W.C.	G.P. on C.E.	N.P. to N.W	Current	Quick	N.C.F to C.L.	Cash to Current	Cash turnover in cash	L.F. to C.L.	T.R. to Cr. sales	Avg. Coll. Period	B.D. to Rec.	R.M. to A.Inv.	Semi-to A. Inv.	Finished to A. Inv.	
Turnover of C.A.	1																			
Rate of return on C.A.	0.33	1																		
Inv. To W.C.	0.30	-0.63	1																	
Rec. to W.C.	0.74	-0.17	0.81	1																
Cash to W.C.	0.75	-0.07	0.79	0.99	1															
G.P. on C.E.	0.37	0.98	-0.48	-0.01	0.09	1														
N.P. to N.W	0.22	0.99	-0.67	-0.27	-0.16	0.96	1													
Current	0.24	0.95	-0.70	-0.20	-0.14	0.94	0.92	1												
Quick	0.54	0.85	-0.55	0.04	0.07	0.83	0.78	0.92	1											
N.C.F to C.L.	0.78	0.17	0.62	0.93	0.97	0.34	0.08	0.11	0.27	1										
Cash to Current	0.71	0.67	0.14	0.59	0.68	0.79	0.61	0.59	0.62	0.84	1									
Cash turnover in cash	-0.22	-0.55	-0.10	-0.37	-0.46	-0.72	-0.54	-0.54	-0.39	-0.64	-0.83	1								
L.F. to C.L.	0.64	0.73	0.02	0.50	0.59	0.85	0.67	0.69	0.70	0.78	0.98	-0.87	1							
T.R. to Cr. sales	-0.22	0.80	-0.87	-0.57	-0.51	0.75	0.82	0.89	0.69	-0.28	0.23	-0.39	0.37	1						
Avg. Coll. Period	-0.26	0.76	-0.76	-0.48	-0.42	0.75	0.78	0.87	0.62	-0.19	0.29	-0.53	0.44	0.98	1					
B.D. to Rec.	-0.23	-0.15	-0.25	-0.11	-0.23	-0.14	-0.21	0.17	0.24	-0.21	-0.28	0.11	-0.15	0.29	0.31	1				
R.M. to A.Inv.	-0.93	-0.33	-0.38	-0.85	-0.86	-0.44	-0.21	-0.31	-0.56	-0.92	-0.83	0.49	-0.79	0.13	0.10	0.05	1			
Semii-to A. Inv.	0.86	0.53	0.30	0.72	0.79	0.64	0.46	0.41	0.53	0.90	0.95	-0.65	0.89	-0.02	0.02	-0.40	-0.90	1		
Finished to A. Inv.	-0.90	-0.19	-0.19	-0.65	-0.60	-0.20	-0.05	-0.22	-0.58	-0.61	-0.48	0.01	-0.44	0.17	0.23	-0.19	0.85	-0.61	1	

The above table exhibits that credit sale ratio are highly positive correlated with the average collection period of the customer so in the miscellaneous industries the collection is made at a high level. And again it shows that with the help of this the bad debt losses is also very low comparing to other industries i.e. 0.11. And gross profit on capital employed to rate of return on current assets is also highly correlated with each other.

But the current liabilities are negatively correlated with the all other ratio of the inventory i.e. raw material inventory and finished goods to inventory.

From the above analysis it is conclude that the engineering, textile, plastic and furniture company are highly correlated with each industries but the miscellaneous and chemical industries are very less correlated with each industries.

9.8 REFERENCES

- D K Bhattacharya - Research Methodology – Excel Books – 1st Edition (2005) Pg. 165
- P.P.Arya, Yesh Pal – Research Methodology in Management – Theory and Case Studies – Edition 2002 Pg. 75
- C. R. Kothari - Research Methodology - Wishwa Prakashan – (1998) Pg. 324

CHAPTER – 10

CHAPTER 10
SUMMARY, FINDINGS AND SUGGESTIONS

Six Leading industries have been undertaken for the study for the period of 2003 to 2007. Primary and secondary database has been used for the study. The study has divided into ten chapters.

First chapter contains the introduction to working capital management. Second chapter deals with the nature and growth of the small scale industries in Gujarat state. Third chapter presents the existing review of literature. Fourth chapter contains the research methodology of the study in which its significance, objectives, limitation of the study, list of hypothesis etc. are given. Fifth, sixth, seventh and eighth chapters represent the comparison of around 19 ratios of all the industries. Their Anova test has been done to see whether they have significant difference in the trend of ratio. It is tested with the table value at 5% significance level. Ninth chapter consists of correlation matrix of ratios of 19 variables of each industries and correlation of one ratio with another ratio has been studied. The last chapter concludes with the findings, summary and some suggestions. Thus, the researcher has tried to fulfill the objectives of the research study.

- The total selected small scale industries of Gujarat state were found to have correct concept of working capital components. The position regarding conceptual clarity about working capital in the selected industries appear to be highly satisfactory. Step may be taken to encourage the use of standard accounting classification regarding components of working capital through educational process in the form of extension work.

- The selected small scale industries subscribe to the gross working capital concept and consider current liabilities as a source of working finance.
- 80% of the selected small scale industries were found to have total centralized of working capital management authority with proprietors and partners. 15% of the selected industries delegated this authority to a very limited extent to their industries managers. The main reason stated for centralization of this function is not financial but the need to maintain secrecy.
- 75% of the selected industries were found to determine working capital requirements on the basis of production and sales. All the selected industries belonging to chemical industries were found to adopt this practice. But selected industries to plastic industries were not found to have adopted this basis. Only 12.5% of the selected industries were not determining their working capital requirements. So there is a good degree of awareness among the selected small scale industries of Gujarat state.
- Size of working capital were determined in different ways, 50% units of each industry group estimate the size of working capital the basis of production or sales. 21 units out of 160 units estimate their size of working capital on the basis of fixed capital. The method adopted by these units' shows their belief that there is a positive correlation between fixed capital and working capital. 14% of the units do not adopt any formal method for estimating the size of working capital.
- The turnover of current assets found to have Industry-wise analysis shows that the rate of turnover of current assets has increased in

- textile and furniture units during period. The engineering, plastic and chemical units showed a declining trend. The rate shown by the engineering was the lowest. High turnover rate of current assets over the period under study. The trend has decreased from 9.69 to 9.04 in 2006-07. efficiency of utilization of current assets may be increased wither by increasing sales, or reducing quantum of working capital, or by adopting both the ways as the situation permits in a particular case.
- As far as the profitability of the current asset is concerned in selected small scale industries were found to have improved their performance during the period of study. The rate of increase was significant in 2003-04 as compared to 2002-03. The rate of net profit on current assets in 2005-06 was low because of higher amount of current assets and higher payments to labourers. These facts were gathered at the time of personnal interview with the entrepreneurs. The cost of raw material was lower in 2005-06 which could increase the net profit on current assets. And the overall trend of the industry was increased from 10.39 to 13.74 in the year 2005-06. And the overall performance in furniture units was better because the average of the furniture units is 19.77 which is higher than other units.
 - The percentage of inventory to working capital has been found in excess of normal limit of 75%. Suggested that inventory management should be substantially improved and excess inventories should be slashed down. Industry-wise, the percentage were 140.25% for engineering, 498.33% for plastic, 513% for chemical, 388.75% for furniture and 490.35% for miscellaneous units during the said period. The textile units were in comfortable position by having only 71.95% funds blocked in inventory. The inference is clear that investment in

inventories need better planning and tighter control for the purpose of improving the management of working capital. And the selected small scale industries were also found to have a high portion of working capital blocked in receivables.

- As far as percentage of cash to working capital management is concerned, the share of cash was low in the units except plastic, furniture, chemical, and miscellaneous categories. Industry-wise this percentage was 2.58 for engineering, 25.12 for plastic, 26.77 for chemical, 4.6 for textile, 39.99 for furniture and 33 for miscellaneous units. And the units i.e. plastic, chemical and furniture had the higher percentage than the yearly average. And the average of the industries is in an increasing level and there is a mixed trend in the industries.
- Periodic review of working capital position was found that 50% of the units under survey reviewed the working capital position every week and 13% of the units did not find it necessary to review the working capital position at all. This shows that the management of these units is quite vigilant about the better utilization of working capital. Because budget is not prepared and the manpower is very limited with the industries.
- With the utilization of methods of assessment of working capital many of the industries follow the proper method of assessment. About 2/3 of the total units do not have any particular method of working assessment. Either they do not know about the technique or they are not following the methods formally. Only chemical industries do not use the method of fund flow statement. And textile industries do not use the ratio analysis. So, other industries have used both the methods for assessment of working capital.

- Control aspect has received greater attention than planning in the field of working capital management in the selected small scale industries.
- We found that 25% of the units were not at all worried about the working capital shortage either in cash or in inventory. No definite reaction could be secured on discussion but it is strongly indicated that units owned by people who were essentially merchants and/or money lenders felt very secure, in their working capital position.
- 80% of the industries would not allow the production to be disturbed. Similarly, 75% of the industries were clear that they will not borrow at higher rate of interest to make up the shortage. Either they could not or they did not like to tell what they will do if these two alternatives are eliminated. Supplier's credit as a source of fund appeared to be quite attractive because 50% of the industries were thinking to delay payments to creditors for meeting working capital shortage.
- Size of working finance has been found to be positively correlated to the size of the industries and its expansion plans. It has been found that to be lower in terms of proportion of sales and cost of production. This means that the bigger the size of the company working, the larger had been the size of working finance.
- So far as a source of working capital finance is concerned, commercial banks contributed about 1/3rd of the total finance with a marginally declining trend. Plastic, chemical and miscellaneous industries were heavily dependent on bank finance whereas engineering and textile industries were less dependent on bank finance.

- Beginning of the years the rate of gross profit on capital employed was encouraging and it came to 11% in 2005-06. Individually, the rate of gross profit in capital employed was very much higher in chemical, textile, furniture, and miscellaneous industries. The margin of gross profit on capital employed was lower in engineering and plastic units.
- The rate of net profit to net worth found to have exceeded very much in plastic, chemical, furniture and miscellaneous industries. There is low rate of net profit to net worth in textile and engineering industries. And also the average of the industries is low in engineering and textile. So, the various reasons can be assigned to such state of affairs i.e. the lack of initial thought, over capitalization, under utilization of the capacity created, high cost of induction and inadequate earning power.
- The share of funds procured from friends and relatives has been found to be closely linked with the background of the entrepreneur. Where merchants and money lenders are owners of small scale industries and the share of such funds is high. But in non-trading the share of such funds is lower.
- For working capital needs the owners have to raise it themselves. Two things emerge as significant in this regard. One is the rate of relatives and friends. Their contribution is significant in industries where merchants and money lenders have projected themselves into manufacturing activities for example plastic, chemical and furniture industries. In the industries where non-trading classes are prominently active the contribution of relatives and friends had sharply declined. Second thing was the contribution of bank funds this was significant and exceeded the financing of own funds in almost all the four major

grounds of the industries i.e. engineering, plastic, chemical, and textile. The fact is strongly brought forward that institution financing is the mainstay of financing of working capital.

- More interesting perhaps were the units who functioned without trade credit. 12.5% of the units did business on cash. These units revealed that they would like to have credit but forced to function on cash basis for the simple reason that their credit standing was poor. And most of the engineering industries purchase on both the methods whereas most of the textile and chemical industries purchase on credit and plastic units purchase on cash only.
- For each unit the suppliers do not allow one type of credit period but there are many types of credit period for each unit. They handled each transaction and each party as a separate case. The same unit may receive one credit period from the supplier and a different credit period in another transaction from the same supplier. The period of credit normally favoured was up to 15 days or more than 30 days.
- Cash discount facility to motivate early payment by the purchaser was found to exist in 75% of the selected small scale industries of Gujarat state. Rate of cash discount was also found to be varying from 2% to even above 5%. It is worth noting that 25% of the selected industries had no practice to offer cash discount. Very few industries could take benefit of cash discount due to tight liquidity position.
- 12.5% of the suppliers did not charge penal interest on over due account. The small units were forced by the shortage of funds at their command to pay penal interest generally up to 18% to their suppliers. Most of them commented that on the one hand they had to suffer the

penal interest; on the hand they could not charge penal interest from their customers, mainly due to competition.

- The main purpose is that 42.5% of the units are keeping cash to meet the daily requirement of the industries. 13.75% of the units kept cash for the years under study to take the advantage of the fluctuations in the prices of their products. 15% of the units kept the cash to avail of discount facility from the suppliers. The remaining 16.25% of the units could not attribute the prime reason for keeping cash. The dominant emphasis upon the ability to meet daily obligation is understandable in small scale industries. The interesting emphasis upon cash for availing of discount facility shows the keenness of the businessmen to avoid the high cost of discount credit facility.
- The 25% of the units did not even care to decide on a percentage basis but kept a fixed sum as cash. Although they commented on surplus cash lying on hand but such is their sense of insecurity that they maintained a fixed amount of cash balance religiously. Some of them proudly declared that this is the mark of their caution and capacity to have an upper hand in all situations. 12.5% of the industries relate the size of cash balance to their wage and purchase bills.
- 35% of the selected industries were found to have exercised no judgment of liquidity. 50% of the others were found to have used liquidity control measures, have made use of certain ratios for this purpose. Cash flow statement was prepared by 25% of such industries.
- The selected industries were found that current ratio much below the standard and that too with a declining trend. In the engineering industries group the ratio exceeded the standard limit of 2 but showed a decreasing trend. In plastic industries the ratios was below 1:1. This

means that the industry financed major portion of their current assets through current liabilities. The textile units showed the downward tendency of current over the years under study. The plastic industry showed lower current ratio. A high current ratio in engineering units indicates that some funds are lying idle. In short, the low current ratio in the industries shows that their liquid resources are below the standard norms.

- Quick ratio shows that in the case of majority of industrial units the quick assets (cash, receivables and short term investments) are not adequate to liquidate current liabilities at particular point of time. The current ratio was higher but the quick ratio is far below the normal 1:1 ratio, which shows that a large part of C.A. is blocked in inventories except in the textile industries. This shows that a slight fall in the prices of inventories will further weaken their liquidity position.
- Over all cash to total current assets ratio has been found lower. Industry-wise analysis reveals that engineering and textile industries had a lower ratio of cash to current assets as compared to all industries average in almost all the years under review. The furniture units hold the higher percentage of cash to current assets in all the years. A sharp increase in this ratio has been noticed in chemical, textile and furniture industries. The change in the ratio is also attributed to the credit squeeze resorted to by the R.B.I. from time to time.
- Percentages of current liabilities in 4 out of 6 industries are higher in 2003-04 than in 2002-03. A very sharp increase is noted in the case of furniture industries from 4.1 in 2002-03 to 8.9 in 2004-05 and 17.9 in 2006-07; in chemical industries from 2.5 in 2005-06 to 9.8 in 2006-07. The ratio shows a decline in 2005-06 in most of the industries.

This decline can be ascribed to reduction in cash balances because of credit squeeze. And the trend analysis shows that there is a decreasing trend in the industries. But the overall average of the industries is increasing trend. So, in plastic, chemical, textile and furniture industries had the higher liquid funds to current liabilities.

- Most of the industries (72.5%) follow the commonly accepted practice of selling on cash and credit both. The special feature was that 20% of the industries sold only on credit. Most of these small industries were found to be in textile, chemical and plastic industries, 7.5% of the industries had cash sales only. These were mainly the engineering goods manufacture. This was particularly noticed in case of textile where high competition forced the manufacturers to depend on credit facilities as a major attraction to buyers.
- Credit sales on acceptance were adopted by 65% of the industries. The practice of interest, however, was found in open account credit sales (35%). Open accounts represent the power and pressure which the buyers can exercise by virtue of their bulk purchases and/on market power. These accounts generally were found to be on-going arrangements. A different type of open account was also in vogue. The two parties in the same industrial area had open account arrangement for all their mutual exchanges. In the last category, the parties supply the raw material to the engineering industries and after some process they sell the goods to the same parties and the account is settled on open account basis.
- Credit sales form 40% of the total sales of the industries. Even though the percentage of credit sale is not high, the need for its proper management is enormous in view of limited resources of the

industries. Handling of receivables, therefore, becomes a major area of concern. And most of the textile and chemical industries are selling their goods on credit and they are put in last two categories. Because of why this percentage was not even higher appeared to be that most of the procedures supplied to high demand market. Whatever they produced was sold. A noteworthy thing was granting credit as obligation to friends. This was prevalent mainly in plastic units where mostly the merchants have extended themselves in manufacturing as a new arm of their activities. And there is a tradition to sell the goods on credit in textile and chemical industries. Most of the plastic industries fall in the third category. Engineering and miscellaneous industries sell goods on credit because of promotion of sales.

- The credit period extended by the industries wide variation exists in the credit period extended by firms in various industry groups. 27.5% of the industries extended credit beyond five weeks to the customers. 50% of the chemical units granted credit for more than 5 weeks. Three-fourths of the industries did not allow credit for more than 5 weeks to the customers. Yet the furniture units allowed credit only for 3 weeks.
- 62.5% of the industries insisted on same credit policy for govt and non-govt customers which meant that they did not care much about the govt. customers for a variety of reasons. But 37.5% of the units particularly of engineering and chemical had created different credit policies regarding their govt and non-govt. customers. In engineering they had to sell a part of their product for which raw material licences were issued to them by the government. The chemical industries,

- however, had so much of margin that they went in for bulk purchase orders from government agencies.
- 62.5% of the industries judge the credit worthiness of the customers on the basis of their past experience. The respondents appeared to be unhappy with bank as a source of reference and put greater weightage on the advice of their sales representatives. Similarly, enquiry from friends and associates in business helped them to form their judgment. All this made the evaluation of particular credit risk a matter of personal judgment which seemed to satisfy the businessmen who were interviewed. Some of them mentioned about the need of independent credit rating system in India. And all the engineering and chemical industries evaluate their customers' ability to pay through past experience. The textile industries adopt the method suggested by the sales representatives. Most of the engineering industries allow cash discount. The furniture and miscellaneous industries do not allow such a concession. But most of the parties do not avail this facility. This cost of keeping the debt due may be more than 40% a year. Most of the industries do not prefer to go to court of law; instead they stopped supply to such industries. Only textile industries have gone to law court.
 - Average collection period for 2003-04 and 2004-05 is in an increasing trend but after this point it is in a decreasing trend in the year 2006-07. An interesting feature is that the plastic, textiles and furniture industries improved their position in collecting the debts. The sad state of affairs was seen in chemical and miscellaneous industries because the average collection period increased. The plastic industries

- always collected the dues within the credit period allowed. And the average of collection period in all industries is in increasing trend.
- Bad debt losses range between 15.8% to 18.93% of receivables outstanding over the five year period. The lowest ratio 15.8% was found in 2003-04 and the highest ratio 18.93% in the year 2005-06. Individually, the ratio of bad debts to receivables was highest in furniture and miscellaneous industries. It is appreciable that the ratio of bad debts to receivables came down from 19.2 to 3.9% in engineering industries during the period of the study. The ratio of bad debts to receivables increased from 7.6 to 26.9% in plastic industries in 5 years. And the ratio of bad debt to receivables is increased in chemical and textiles industries during the 5 years. The real impact of bad debts losses on profitability can be gauged by relating them to sales. Higher the bad debts to sales ratio, the lower the margin of profit on sales.
 - In all the plastic industries the control over the inventory is done by the proprietor or partners themselves. In most of the engineering industries the control is exercised by the manager. Most of the industries 50% had entrusted this task to the manager. In plastic and chemical industries even if they had the managers, this work was done by the businessman himself. On the other hand, in engineering industries, the managers looked after it even though the owners were technical people. The reason indicated was the complex nature of inventory items and their large number made it necessary for the manager to provide continuing control and supervision.
 - The size of inventory for all the industries taken together during all the years of study had a rising trend except in 2003-04. Individually,

the size of inventory increased in engineering, textiles and miscellaneous industries. The trend of increase is not visible in chemical and furniture industries in the beginning, although in the later years these industries showed an increasing tendency. The increase was significant in miscellaneous industries in 2005-06. Looking to the total inventory the engineering industries account for the highest share. And the trend of the industries is an increasing trend. This shows that the industries operated with high amount of inventory.

There are some suggestions derived from the doing the analytical study of financial performance of the sampled industries.

- 1 Textile industries should improve utilization of gross fixed assets to generate cost efficiency in the production unit.
- 2 Engineering and plastic industries should regain their efficiency of better utilization of net fixed assets.
- 3 Chemical industries should find out the reason that why current asset utilization has decreased over the period of study.
- 4 Each company should try to maintain the liquidity level. Thus they should revise their liquidity policy.
- 5 Furniture industries are having very high debt so it should decrease its debt level.

6 Miscellaneous industries should increase their debt so that owners of the unit get the benefits.

7 Plastic, chemical and textile industries are enjoying a long credit period. But it may harm them in future. So, it should reduce availing of credit period.

BIBLIOGRAPHY

- Aggrawal N.K. Management of working capital, Sterling publishers (P) Ltd., New-Delhi, 1983.
- Aggrawal N.P. Analysis of financial statement, National publishing house, New-Delhi, 1981.
- Backman T.N. Credit and Collection management & Theory, Mc.Graw Hills, New York, 1962.
- Bhalla P.N. Cash management in S.T.D., Lok-udyog Vol. VI No.8. (Nov.1972)
- Chadda R.S. Inventory Management in India, Allied publishers, Bombay, 1971.
- Chawla S.K. Working capital management – A practical approach
- C.R.Kothari Research Methodology.
- Greig, Cuthbert Commercial credit and accounts collection, The furniture records, London.
- Leslie R. Harward Working capital – its management and control, Mc Donald and evans Ltd, London.
- Marting John Control of working capital.
- Mishra R.K. Working capital management, Somaiya publication (P) Ltd, Bombay.
- Norman E. Managing company cash.
- Pradhan R.S. Management of working capital.
- Rajan N. Material management in public enterprises.

QUESTIONNAIRES

WORKING CAPITAL MANAGEMENT IN SELECTED SMALL SCALE INDUSTRIES OF GUJARAT STATE

A. IDENTIFICATION

1. Place of establishment
2. Year of establishment
3. Nature of organization
Sole-proprietor/partnership/private limited
4. Nature of business
Manufacturing/processing/service

B. ORGANISATION

1. Do you make distinction between recording of transaction (accounting) and best use of funds (Finance).
Yes/no
2. Who looks after the functions?
 - a. Accounting
 - b. Finance decisions
Self/accountant/manager
3. The following functions are looked after:
 - a. Billing and Recording
 - b. Credit appraisal
 - c. Audit
 - d. Hundies and Receivables
Self/accountant/manager
4. The following decisions are taken by:
 - a. Borrowing
 - b. Determination of funds requirement
 - c. Expansion and Diversification
 - d. Selection of new line of business

C. WORKING CAPITAL - GENERAL

1. You include under working capital:
Cash/Bills and Hundies/Investments/Inventories/All of them
2. The working capital management in your concern is looked after:
Self/accountant/manager

3. The size of working capital is determined by:
 - a. Past experience
 - b. Some rule of thumb
 - c. Projection based on production
 - d. Any other

4. You determine the size of working capital as:
 - a. A percentage of fixed capital
 - b. A percentage of sales
 - c. A percentage of production
 - d. Any other

5. You assess the working capital position of the firm through:
 - a. Cash flow statement
 - b. Fund flow statement
 - c. Any other

6. Review and/or reports on working capital position are prepared.
Daily/weekly/monthly/any other period

7. You control working capital through.
 - a. Cash and bank balance report
 - b. Periodical production/sales budget report
 - c. Periodical working capital reports
 - d. Any other

8. The shortage of working capital is felt in the area of:
 - a. Cash
 - b. Inventories
Always/seasonal/never

9. The shortage of working capital affects the concern, in:
 - a. Payment of higher interest
 - b. Delay of payment of creditors
 - c. Dislocation of production
Yes/no

10. The allocation of working capital fund is done for various components:
 - a. Production estimate
 - b. Fixed sum for any components
 - c. Fixed percentage to any item

11. The sources of working capital are.
 - a. Own capital
 - b. Short term bank loans
 - c. Friends and relatives

- d. Trade credit
V. Dependable/dependable/net reliable

D. Cash Management

12. The reason for keeping cash in your concern is: (Please give rank)

- a. For meeting daily obligations
- b. To take advantages of favourable market condition
- c. To secure cash discount from suppliers
- d. To meet contingencies

13. Cash planning is done in your concern.

Daily/weekly/monthly

14. The cash planning is done on the basis of:

- a. Cash budget
- b. Cash flow statement
- c. Any other

15. The cash balance to be maintained is determined as:

- a. A fixed sum
- b. A percentage of total investment
- c. A percentage of production
- d. A percentage of wage bill and purchases
- e. Any other

16. The cash shortage in your concern is felt:

Very frequently/frequently/occasionally/never

17. In the event if cash shortage your concern resorts to (adopts):

- a. Emergency borrowing at a higher rate of interest
- b. Losing the discount on early payment
- c. Losing the business
- d. Forced curtailment of production

18.

- The liquidity (availability) of funds is judged in your concern from time to time.
Yes/No
- The method used are:
 - a. Ratio analysis
 - b. Cash flow statement

E. INVENTORY MANAGEMENT

19.

- The maximum level of inventory or safety is determined in your concern:
Yes/No
- The basis for minimum level of inventory in your concern is:
 - a. Consumption for a fixed period of production
 - b. Consumption during procurement time
 - c. Consumption during procurement time and safety stock
 - d. Any other

20. The maximum level of inventory is determined on the basis of: (Please give ranks)

- a. Inventory purchase is the best use of funds
- b. Storage space available
- c. Carrying cost of inventory (Insurance. Interest and rent)
- d. Supply condition of material
- e. Price fluctuation
- f. Future plan for production
- g. Any other

21. The inventory review report in your concern is prepared:

Daily/weekly/monthly/quarterly/yearly/as and when necessary

22. The ordering system followed are:

- a. Fixed order quantity system – EOQ
- b. Fixed period order system
- c. Single order system
- d. Fixed order quantity system and fixed period order system
- e. Orders according to the need of the concern

23. The inventory control is done by:

Stores and purchase department/production department/both

24. The minimum time taken in the purchase of material in your concern – Indian raw material/Foreign raw material

- a. Administrative time at your place
- b. Delivery time taken by the supplier

25. Who looks after inventory control?

Self/accountant/manager

F. MANAGEMENT OF RECEIVABLES

26.

- The sales in your concern are:
Cash sales only/ Credit sales generally avoided/Both cash and credit sales.
- The form of credit sales is: Open account/Acceptances.
- The credit sale as percentage of total sales in your concern:
- The credit sales is accepted in your concern because:
 - i. Traditions of the market demand it.
 - ii. Promotion of sale under competition needs it.
 - iii. Friends demand it as an obligation.
 - iv. Special customers have to be accommodated.
 - v. Any other.
- The average duration of credit.....to.....days period is:
- Percentage of credit sales treated as bad debts.

27.

- Your terms of credit are different from other competing concerns: Yes/No
- The same credit policy is followed for Govt. and non-Govt customers in your concern:
- You follow some specific credit policy to some selective customers. Yes/No
- The credit policy is changed in your concern. Always/Sometime/Never

28. The evaluation of a particular credit risk is done:

- a. By arranging for bank references.
- b. By past experience with the party.
- c. On the advice of sales representative.
- d. Any other e.g. Friends.

29.

- The cash discount is allowed for prompt payment in your concern: Yes/No
- If the payment is not received in time do you go to law court?
Always/Sometime/Never
- You charge penal interest. Yes/No
- You stop supply. Yes/No

30. Credit decision are taken in your concern by: Self/Accountant/Manager

31.

- The payment of sales made on credit last year was realized us under:
Percentage

Amount : No. of parties

(i) Within the period allowed

Late: Overdue by 1 month

---do--- by 2 months.

---do--- by more than 2 months.

- The payment of your dues is generally delayed by the: Never/Always/Frequently
- (i) Private firms.
- (ii) Govt. departments.

G. SOURCES OF WORKING CAPITAL BANK CREDIT:

32. The bank loan secured in your concern is in the form of:

Overdraft/Cash credit/Hypothecation of inventories/Pledge of stock

33. The bank finance received by you is based on: the quality of the proposal/financial strength of the concern/any other

34. Do you borrow from more than one bank? Yes/No

35. The relative share of the following sources of funds in your concern: In percentage

a. Own funds.

b. Bank funds.

c. Relatives and friends.

H. COST OF BORROWINGS

36. The rate of interest charged by: In Rate

a. Short term bank finance.

b. Friends and relatives.

I. TRADE CREDIT

37. The method for purchase of goods in your concern is:

On credit only/Through bank only/On both methods

38. The credit purchases are in the form of: Open account/Trade bills acceptance.

39. The credit period allowed by the suppliers is: %

 Suppliers : Value

Up to 15 days.
 15-30 days.
 More than 1 month.

40. The suppliers allow extra discount if the payment is made on the spot. Yes/No
 a. Rate of discount _____

41. The discount received by your concern for the timely payment of bills is:

Percentage	Percentage of suppliers
-----	-----
Up to 3	
-----	-----
3-5	
-----	-----
5 and above	
-----	-----

42. You avail this discount facility. Always/In some cases/Never.

43. The suppliers charge penal interest on overdue accounts. Yes/No
 a. Rate of interest. _____

J. MISCELLANEOUS

44. The investment in your concern is made in:
 Govt.Securities/Non-Govt.Securities/No investment

45. The period of your investment is: Up to one year/More than one year

46. You advance money to the following:

a. Suppliers of raw material	Yes/No
b. Workers	Yes/No

47. The practice of advance is adopted:

- To ensure regular supply of raw material.
- To discourage workers from shifting to other units.
- As a practice in the industry.