

MANAGEMENT OF WORKING CAPITAL AT ECIL, HYDERABAD



DR. N. JYOTHI

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PREFACE

Finance is one of the basic foundations for all kinds of economic activities. It is the master key that provides access to the entire source for being employed in manufacturing and merchandising activities. It has rightly been said business needs money to make more money. However, it is also a fact that money begets more money, only when it is properly managed. Therefore, efficient management of every business enterprise is directly linked with efficient management of its finances.

Organization of the finance function differs from company to company depending on their needs and the financial policy. The finance manager is concerned with the management and control of the firm's assets. Management of finances of an organization is nothing but management of money. For any company, to achieve its objectives, it is imperative that efficient and sufficient flow of money to every department should be ensured. Not, only that, even, managing the working capital and the components of working capital are a critical issue for the management.

Public enterprises are known for their huge investment in fixed capital. As high profitability is not expected, such funds have to be low-cost funds, as the public enterprises work for social welfare and cause. One of the most important economic characteristics of public enterprises is comparatively large investments in working capital. The electronics industry is characterized by many peculiar features like, constant growth. So, the Electronics companies require additional funds on a regular basis due to ever expanding nature. It is due to such reasons the working capital management of Electronics companies is very critical, peculiar and challenging in nature. ECIL highly needs short-term finances in view of its present position and vast scope for improvement in the services provided.

It is in this context an attempt is made through the study to evaluate the management of working capital of ECIL and the implication of the same on total profitability during the period under study.

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It gives me a great pleasure in acknowledging and conveying my heartfelt gratitude to my beloved father Shri. N. Shanker Rao and mother Smt. N. Tara Devi who helped me to fulfill this endeavor. I dedicate this humble piece of work at the Lotus feet of my parents.

I am thankful to my husband Shri. D. Ravi for his sustained help, encouragement and tolerance evinced throughout my thesis work. Also, I reminisce my children, Aditya and Amulya who stood by me and supported me throughout this work.

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Dr. N. Jyothi

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CHAPTER - I

INTRODUCTION

This chapter deals with the conceptual framework of the research problem, review of literature and Methodology of the study.

1.1 INTRODUCTION

Finance is regarded as the life blood of a business enterprise. It is the master key that provides access to the entire source for being employed in manufacturing and merchandising activities. It has rightly been said that business needs money to make more money. So firms should give proper attention to the structure and organization of their finance department. If financial data are missing or inaccurate, the firm may not be in a position to identify the serious problems confronting the firm, any time, for necessary corrective action. Management of finances of an organization is nothing but management of money. In case an adequate amount of finances is not flown to every centre of the organization, it is beyond - doubt that the organization cannot achieve its objectives, however, it is imperative that efficient and sufficient flow of money should be ensured for the better and smooth running of the organization.

So, for every department or centre, for the better efficiency of the organization, mobilizing and ensuring the optimization and effectiveness of funds is an essential task. Not only that, even, managing flow of funds and cash is also a critical issue of the management as it can be considered as one of the challenges of management. It is very clear from the foregone discussion that an enterprise to commit itself to an activity requires adequate finances. Hence, the enterprises should manage the financial sources very efficiently all the time.

The size and the importance of the long term and short term funds depend on the nature of the industry. In general, the financial practices followed by the public enterprises, predominantly, high percentage of the total funds must come from long-term sources, because, one of the most important economic characteristic of public enterprises is comparative and large investments in fixed and working capital. In the case of such enterprises, the need for permanent investment of large sum of money in fixed assets make the share of long-term funds substantial in the financial structure, in comparison to short-term funds.

Specifically with regard to Public enterprises, when we think, they are known for certain characteristics, namely extremely stable sales, heavy fixed asset investment, near natural monopoly condition, government regulation and stable growth rates, the combined effect of these factors on the financial sources can be found in long-term as well short term funds that constitute a

major share in the total funds. It is due to such reasons, the public enterprises financial management practices are quite distinguishable in approach when compared to private sector companies. This can be seen not only in capital expenditure, but also, in capital structure, cost of capital and even in management of working capital too. In order to understand well the intricacies of Management of Finances of public sector the researcher has discussed at length the conceptual frame work of financial management of public sector enterprises with special reference to working capital in the following lines:

1.2 ABOUT FINANCIAL MANAGEMENT

Many authors use business finance and corporate finance as synonym, but business finance is broader than corporate finance, since it covers sole proprietorship, partnership and company business. Corporate finance is restricted to the company finance only and not the other forms of business organizations.

According to Encyclopedia of Social Sciences, Corporate finance deals with the financial problems of corporate enterprises. Problems include financial aspects of the promotion of new enterprises and their administration during early development, the accounting problems connected with the distinction between capital and income, the administrative question created by growth and expansion and finally the financial adjustments required for the bolstering upon rehabilitation of a corporation that has come into financial difficulties. Management of all these is financial management (FM). Hence, financial management mainly involves rising of funds and their effective utilization with the objective of maximizing shareholder's wealth

Financial manager has to forecast expected events in business and note their financial implications. Financial management is concerned with the following activities: (i) anticipating financial needs, which is all about estimation of funds required for investment in fixed and current assets or long-term and short-term assets. (ii) acquiring financial resources – once the required amount of capital is anticipated the next task is acquiring financial resources i.e., where and how to obtain the funds to finance the anticipated financial needs and (iii) allocating funds in business – means allocation of available funds among best plans of assets, which are able to maximize shareholders' wealth.

Financial management may be divided into three phases viz., 1. The Traditional phase, 2. The Transitional phase and 3. Modern phase.

The Traditional Phase

This phase has lasted for about four decades. Its finest expression was shown in the scholarly work of Arthur S. Dewing, in his book titled “The Financial Policy of Corporation in 1920s.” In this phase the focus of financial management was on four selected aspects, they are:

- (i) It placed much importance on corporate finance and too little on the financing problems of non-corporate enterprises.
- (ii) The sequence of treatment was on certain episodic events like formation, issuance of capital, major expansion, merger, reorganization and liquidation during the life cycle of an enterprise.
- (iii) It placed heavy emphasis on long-term financing, institutions, instruments, procedures used in capital markets and legal aspects of financial events.

It is very clear that the approach lacks emphasis on the problems of working capital management

The Transition Phase

It has begun around the early 1940’s and continued through the early 1950’s. The nature of financial management in this phase is almost similar to that of earlier phase but more emphasis was given to the day-to-day (working capital) problems faced by the finance managers. Capital budgeting techniques were developed in this phase only.

The Modern Phase

It has begun in the mid 1950’s. It has shown commendable development with combination of ideas from economic and statistics that led financial management to be more analytical and quantitative. The main issue of this phase is rational matching of funds to their uses, which leads to the maximization of shareholders’ wealth.

1.3 FINANCIAL DECISIONS

The financial activities can be broken down into four major decisions namely,

(1) Investment Decision (2) Financing Decision (3) Dividend Decision and (4) Working Capital Management.

A firm takes these decisions simultaneously and continuously in the normal course of business

Investment Decision

It is most important than the other three decisions. It begins with a determination of the total amount of assets needed to be held by the firm. In other words, investment decision relates to the selection of assets on which a firm will invest funds. The required assets fall into two groups.

(i) Long-term Assets (fixed assets, plant & machinery land & buildings, etc), which involve huge investment and yield a return over a period of time in future. Investment in long-term assets is popularly known as “capital budgeting”. It may be defined as the firm’s decision to invest its current funds most efficiently in fixed assets with an expected flow of benefits over a series of years.

(ii) Short-term Assets (current assets: raw materials, work in progress, finished goods, debtors, cash, etc.,) that can be converted into cash within a financial year without diminishing in value. Investment in current assets is popularly termed as “working capital management”. It relates to the management of current assets. It is an important decision for a firm, as short-survival is the prerequisite for long-term success. Firm should not maintain more or less assets. More assets reduce return and there will be no risk, but having less assets is more risky and more profitable. Hence, the main aspects of working capital management are the trade-off between risk and return. Management of working capital involves two aspects. Firstly, determination of amount required for running of business and secondly, financing these assets.

Financing Decision

After estimation of the amount required and the selection of assets required to be purchased, then the next financing decision enters into the picture.

Here the financial manager has to determine the proportion of debt and equity in capital structure. It should be optimum finance mix, which maximizes shareholders’ wealth

The two aspects of capital structure are: one capital structure theories and second determination of optimum capital structure.

Dividend Decision

This is the third financial decision, which relates to dividend policy. Dividend is part of profits that are available for distribution to equity shareholders. Payment of dividends should be analyzed in relation to the financial decision of a firm. Financial manager should determine optimum dividend policy, which maximizes market value of the share thereby the market value of the firm. Considering the factors in determining dividend is another important aspect of dividend policy.

Working Capital Management

Working capital is the circulating money of any organization. It is due to the deficiency of working capital most of the organizations in India moved towards technical failure. It is beyond-doubt that the impact of working capital would directly affect the profitability of any organization.

The term working capital is also realized as the capital required for day to day operations of a business enterprise. Broadly, the working capital can be divided into two concepts, they are: Gross working capital and Net working capital.

Proper management of working capital is very important for the success of an enterprise. It aims to protect the purchasing power of the respective assets and maximizes the return on investment constantly. Failure of a business is undoubtedly due to poor management or absence of management skills of an entrepreneur in this regard. Therefore, shortage of working capital which has become main cause for the failure of concerns is due to either mismanagement or poor management of the working capital.

Manufacturing units of small scale sector claim, large portions of their total investment is in current assets. The efficient management of working capital not only improves the profitability of a concern but also reduces its dependence for funds either on commercial banks or on personal borrowings. This is evident from the selected sample units, which are excessively depending on commercial banks and outside borrowings for their working capital requirements, which is in the range of 50 per cent to 100 per

cent. This situation indicates that entrepreneurs are not managing the working capital effectively.

A low profit ratio can be geared to a lighter one by quickening the pace of working capital cycle. Besides this, by having adequate working it not only provides cushion to the business, but also protects from the adverse effect of shrinkage in the volume of current asset.

The complementary relationship between working capital and fixed capital is very apparent that without supply of material for processing or without cash to meet current expenses is virtually abortive. The working capital position of any enterprise, therefore, becomes the controlling factor for determining the scope of its operations.

Working capital has also a technical role to play in maximizing the rate of return, when a firm has not reached its full installed capacity, its profitability can be increased by increasing its working capital to the fixed capital. Thus, it indicates that for a given fixed capital investment with an increased working capital, optimum utilization of fixed assets is ensured. Further, an enterprise can maximize its rate of return, if it keeps pace with scientific and technological developments in its field.

Here it is proposed to study the management of basic elements of current assets, viz., inventory, cash and receivables. Inventory is acknowledged as most important item in current assets. Inventory comprises of raw material, supplies, goods in process and finished goods. It must be noted that maximization of profit largely depends upon the optimum use and allocation of working capital in the above mentioned components of inventory. Though raw materials have to be stored to provide for an uninterrupted flow of production and also to gain the economies of purchases, excessive investment in raw materials will lead to locking-up of funds, which causes an enterprise to bear the burden of carrying cost and also loss in physical deterioration.

However, by ordering in small quantity at a time, it increases the ordering costs and in turn the impact would be there on the profitability. Since the inventory carrying cost and inventory ordering cost operate inversely to each other, an entrepreneur must find out that point where the total inventory cost is at minimum.

From the above analysis, it is evident that the entrepreneur should determine the optimum size of inventory required for saving, carrying and ordering costs. The size of inventory of an enterprise cannot be perfectly controlled by the techniques of inventory control alone, until the whole materials management system is made efficient.

Cash is prominent component of working capital, both as a means and an end for an enterprise. Since cash has only everlasting purchasing power of men, material and other factors. It can alone keep the operations of a business without stoppage.

Further, return on investment to the investors is made through cash and even in the event of liquidation, cash becomes the final media for discouraging its obligations. Thus, cash occupies a vital place in the structure of working capital.

Cash is a non – earning asset for an enterprise thus an entrepreneur should determine the optimum amount of cash required for his business to maintain manufacturing cycle, collection cycle and maturity of debt effectively. The turnover of working capital finally rests on the transitive behavior of accounts receivables. For determining the optimum quantity of accounts receivables to be maintained by a firm for a given period, is influenced by the trade customs prevailing in the market and the selling capacity of the firm. Trade acceptances are self liquidating instruments and can also be discounted before the maturity date like inventory receivables also carry some direct and indirect costs. The direct costs are in the form of allowances or concessions made to customers and even bad debts. The indirect costs are in the form of collection cost. These costs make it necessary to plan the volume of receivables. In such a way, at any point of time the total cost of carrying receivables does not exceed the profitability of sales.

With regard to management of working capital there are two major implications. First, the decisions that affect the level of working capital are frequent and repetitive. Second, 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 and 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. Not only that even, the liquidity of any organization duly depends on the better and effective management of working capital.

Hence, we can understand that the working capital management is concerned with the problems that arise in attempting to manage the current assets, current liabilities and their inter-relationship that exists between them. Its goal is to maintain a satisfactory level of working capital.

1.4 IMPACT OF WORKING CAPITAL MANGEMENT ON FINANCIAL DECISIONS

The above-discussed four financial decisions are different kinds of financial management decisions, but these decisions are inter-related, due to that, the underlying objective of all the four decisions is maximization of shareholders' wealth. Hence, the financial decisions are not independent, they are inter-related to each other. Under the investment decision, financial manager will decide what type of asset or project should be selected? The selection of a particular asset or project will help to determine the amount of funds required to finance the project or asset.

Financing decision influences and is influenced by dividend decision, since retention of profits for financing selected assets or projects reduces the profit available to ordinary shareholder's, thereby reducing dividend payout ratio, is expected all the time. Dividend decision and investment decision are interrelated because retention of profits for financing the selected asset depends on the rate of return on proposed investment and the opportunity cost of retained profits. Profits are retained when return on investment is higher than the opportunity cost of retained profits and vice-versa. So, the interrelation between investment decision and dividend decision is an inevitable one. The above discussion asserts that there is interrelationship among financial decisions. So, the, financial manager has to take optimal joint decision by evaluation of the decisions that will affect wealth of shareholders, if there is any negative effect on wealth it should be rejected and vice versa.

It is beyond-doubt that the success of the above four finance decisions duly depends on the effective management of working capital of such organizations as the working capital is known as the life blood of any organization. Not only that even, the working

capital is also considered as the circulated money of business organizations with which they can run very successfully. Hence, the importance and the pervasive role of working capital can call the finance managers all the time to initiate a high level of effort to ensure the success of working capital management, in turn the total success of organization.

1.5 STATEMENT OF THE PROBLEM

One of the most important economic characteristics of public enterprises is comparatively large investments in fixed and working capital. Further, as high profitability is not expected in the case of public enterprises, such funds have to be low cost funds. Thus, combining these elements, public enterprises are expected to be provided with large sums of long-term, low cost funds.

The electronics industry is characterized by many peculiar features like, constant growth. so the Electronics companies require additional funds on a regular basis due to ever expanding nature. It is due to such reasons the working capital management of Electronics companies is very critical, peculiar and challenging in nature.

It is in this context an attempt is made through the study to evaluate the management of working capital at ECIL and the implication of the same on total profitability during the period under study

1.6 REVIEW OF LITERATURE

The purpose of this section is to present a review of literature relating to the Management of Working Capital. There are plethora of studies on management of working capital pertaining to different sectors namely, transport, service, education, manufacturing, but, studies with regard to electronics were found very few and incomprehensive. Hence, some of the important and relevant studies are reviewed and placed here as under.

Sagan (1955), in his paper, focused on efficient management of finances so that it does not affect the cash position of the company.

Walker (1964) developed three principles which were based on risk and return trade-off.

Proposition I- If the amount of working capital is fixed in nature, the amount of risk of the firm assumes variedly and the opportunities for the gain or loss are expected to increase. Walker further stated that if a firm wished to reduce its risk to the minimum, it should employ only equity capital for financing of working capital, however, by doing so, the firm can reduce its opportunities for higher gains on equity capital as it would not be taking advantage of leverage. On the basis of this, he developed his second proposition.

Proposition II- The type of capital (debt or equity) used to finance working capital directly affects the amount of risk that a firm assumes as well as the opportunities for gain and loss. Hence, the management should have opportunity to acquire funds from operations to meet the debt obligations. But, at the same time, long-term debt is costlier. On the basis of this, he developed his third proposition:

Proposition III- The greater the disparity between the maturities of the firm's debt instruments and its flow of internally generated funds, the greater the risk and *vice-versa*.

Darling and Lovell (1965) There are several reasons, namely, physical, financial and technical, which motivate partial adjustment. Among the physical factors, mention may be made of procurement lags between orders and deliveries. Import licensing procedures on account of foreign exchange scarcity could cause further delays in adjustment. Among the financial factors, cost advantages associated with bulk buying and higher procurement costs for speedy delivery are also mentioned.

Vanhorne (1969) He proposed calculation of different forecasted liquid asset requirements along with their subjective probabilities under different possible assumptions of sales, receivables, payables and other related receipts and disbursements. Vanhorne's study presented a risk-return trade-off of working capital management is totally new.

Vinod Prakash (1970) was a time series analysis with mostly data taken from CMI and Annual Survey of Industries (ASI) for the period 1946-63. It examined the influence of structural changes in manufacturing activity on the relative size and composition of inventory in the large scale-manufacturing sector in India. Three different models for

industry groups and for **six** important individual industries had been tried. Output/sales, capacity utilization, short-term rate of interest, money supply, foreign exchange availability, and price index, size and time trend were taken as explanatory variable. The simple accelerator model with output gave better results for industrial groups, whereas, the ratio model seemed to perform better in the analysis of individual industry. The flexible accelerator models were found to be inferior. The impact of price index was found to be generally insignificant, while the impact of foreign exchange and money supply was absent. The rate of interest showed a perverse impact. Time trend appeared to be important than the size of establishment. The role of availability of funds was completely ignored in this study.

Krishnamurty and Sastry (1970), was perhaps the most comprehensive study on manufacturer's inventories. It was a time series study but some inter-industry cross section analysis had also been done. Utilization of productive capacity and price anticipations had been found to be of some relevance.

Appavadhanulu (1971), was of the view that different production techniques would impact the stock of raw materials and finished goods.

Robert Ballot (1971), describes the basic functions of the material manager, as "The material manager is responsible for the material management function related to the planning, procurement, storage, handling and distribution of materials and products for obtaining results in keeping the company policies and objectives. He directs the activities of the materials functions and has authority over these functions."

Weston and Brigham (1972), were of the opinion that short term debts would help to reduce the average cost of capital in the firm

Cohn and Pringle (1973), illustrated the extension of "*Capital Asset Pricing Model (CAPM) for working capital management decisions*". They tried to correlate long-term investment and financing decisions and working capital management decisions through CAPM. They emphasized that an active working capital management policy based on CAPM could be employed to keep the firm's shares in a given risk class. Other variables influencing inventories have been introduced in the literature in the context of accelerator model

Chakraborty (1973) highlighted the importance of Operating Cycle concept to assess the future cash requirements of the company based on forecasted sales and costs.

Mishra (1975), in his study on the problems of working capital with special reference to **six** select public sector undertakings in India over the period 1960-61 to 1967-68, found that overstocking of inventory would lead to losses and spending of more cash to safeguard it.

Swamy and Rao (1975), Stated that the funds flow of public limited companies, had an impact on the average stock of inventory stored.

Hilton (1976) and Irwin (1981), found that the time trend is expected to be important because inventories generally accumulate with the expansion of economic activities of the company. Anticipated price changes, measured by changes in whole sale price index of inventories, are taken as an explanatory variable to capture speculative element in inventory. An increase in sales is expected to increase the demand for stocks to meet orders regularly.

Nagaraja Naidu (1980), "*The Finances of APSEB*". This study paid particular attention to the problems of procurement of funds, their deployment and the influence of social objectives on the finances in general and financial performances in particular. It concludes that the financing of current assets involves in a trade –off between risk and return. A firm can choose from short or long term sources of finance. If the firm choose more of short-term funds for financing both current and long- term assets. It would be in the higher degree of Risk and Vice-Versa.

Joe Ezekiel (1980), stated that Material Management Department is considered a very responsible corporate function and is expected to follow high ethical standards and integrity commensurate with commitment to corporate bottom line. The IFPM has evolved its ethical code and soon afterwards the Indian Institute of Material Management (IIMM) adopted its code of ethics. The basic purpose is to make imperative for the members to subscribe and work for honesty and truth in buying and selling while respecting one's obligations to the organization in all transactions without impairing the dignity and responsibility of the office.

Agarwal (1982), in his study on automobiles industry found that the variables such as dividends, capacity utilization and liquidity ratios were found to have no impact on inventory investment behaviour.

Satyanarayana Murthy (1986), “*Working Capital Management of ECIL*” The study relates to the working capital management of ECIL during the period 1975-76 to 1984-85, It states that working capital management in ECIL is done effectively taking into consideration the companies needs and requirements.

Kamta Prasad Singh, Anil Kumar Sinha and Subas Chandra Singh (1986), in their study of fertilizer industries from 1978-93, found to their dismay that poor management of working capital led to huge losses incurred by FCI.

Verma (1989) The study on Iron and Steel Industry stated that all the firms in the industry had made excessive use of bank borrowings to meet their working capital requirement *vis-à-vis* the norms suggested by Tandon Committee.

Akbar Ali Khan (1990), Titled “*Financial Management of SRTCs in India- with reference MSRTC, APSRTC and GSRTC*”, states that transport is a tool for the growth and development process and sustenance of the economy in any country. It has both, cause and effect of social and economic development as it offers a number of other advantages such as accessibility, flexibility, reliability and competitive resource cost. A region, which is planning for growth will certainly require adequate transportation facilities. Failure to provide the necessary increase in the capacity of the transportation system will create bottlenecks and eventually retard the region’s growth. The importance of public transport as against the private transport is being increasingly recognized even by the developed countries. A less developed country like India cannot neglect the development of transport. However, the financial needs of such organizations are not properly made, it is beyond-doubt that the organizations cannot move properly and the thing will be very difficult to sustain, in case, if they are not provided proper funding.

Sulochana (1996), “*Management of Finances in Osmania University*”, diagnosed a pattern of financial support for the universities through the five-year plans at the All India level and through budget allocations at the state level. The object of the study was

to find out why shortage of funds occurred and suggested solutions to wriggle out of the crisis.

The study concluded that UGC is a statutory body created for the purpose of determination and maintenance of academic standards in the sphere of higher education, is found to be more liberal in financing Central and State universities.

Bishnu Priya Mishra and Kar (1999) in the article titled "*Towards Better Measure of Working Capital performance in the liberalized era*" revealed that in order to streamline the working capital management, an attempt has been made in this paper to identify the liquidity measures that have a greater predictive ability than other measures. It discussed about different liquidity measurement concepts and presents a statistical analysis to test the efficiency of various liquidity measures.

Chinta Rao and Rao (1999) in their article "*Management of Working Capital Perceptions of Chief Executive*" attempted to examine the perceptions of Chief Executives of select enterprises over various aspects of working capital. The article was based on the data collected through questionnaires developed covering objectives, policy, financing and control of working capital in respect of a few public enterprises belonging to manufacturing sector units of Karnataka public sector.

Satyantarayana Chary, et all (2003) studied the "*working capital analysis of Sri Laxmi Narasimha Solvent Oil Limited*" through select statistical tools and proved that the discrepancy in estimation of working capital can show a great impact on profitability.

Sridhar (2004), in his study titled "*Management of Finances in APSRTC- A Case Study*" focused on management of fixed capital as well as working capital. Also the study focused on the relationship and the impact of such capitals on the total profitability of the select organization. It concludes that the organization needs a right approach to pursue the working capital in an efficient manner.

Jain, Surendra Yadav (2005), in their paper "*Financial Management of Public Sector Enterprises in India- Analysis of Profitability*" stated that financial Management of resources in terms of profitability constitutes, by far, the most important aspect of operational efficiency of an enterprise.

Mahender (2011), in his study “*Working Capital Analysis of Public Sector Enterprises – A Case study of APSRTC*” states that APSRTC followed an aggressive nature in its Working Capital Policy. As APSRTC followed a strategy of higher liquidity, lot of investments were made on current assets at the cost of prospective profits.

It is very clear from the above literature review that the studies on working capital are not limited, but they deal with objectives and policy, size of working capital, working capital planning, working capital norms, operational environment, financing, control and different aspects of components of working capital and problems of working capital. However, it is found that there are no studies to examine the management of working capital of electronics industry, except one which is not so comprehensive. So an attempt has been made in the present study to tap the untapped aspects from the perspective of Working Capital Management, by taking ECIL, Hyderabad as a case problem.

1.7 NEED FOR THE STUDY

Every business tries to expand for betterment and profitability for which it requires funds that should remain at its disposal. In such a situation, the emphasis in the case of working capital is on running day - to - day business. Particularly analysis of working capital in public sector enterprises can enable the management to efficiently coordinate the financial decisions and achieve the real goals. The efficient management of working capital not only improves the profitability of a concern but also reduces its dependence for funds either on commercial banks or on personal borrowings.

Therefore, working Capital is required to sustain the sales activity. If adequate Working Capital is not available, then the company will not be in a position to sustain the sales, as it will not be in a position to purchase raw materials, pay wages and to meet other current or day to day expenditure. The main factors determining the working capital are the production policies of the firm, nature of the business, length of the manufacturing process, credit policy of a firm. The working capital requirements should be met both from short term as well as long term sources of funds. The main benefit of short term sources of funds has lower cost and establishes a close relationship with the banks. The three basic approaches to determine the working capital financing mix are 1) Hedging approach 2) The conservative approach 3) Tradeoff between hedging and conservative

approaches. Some of the important sources of working capital financing are trade credit, factoring, invoice discontinuity, bank financing overdraft, cash credit, bill financing and commercial papers. Particularly, management of working capital is somewhat different in approach in public sector undertakings as they function distinguishably with private sector companies. The present study is a modest attempt to analyze the management of working capital at Electronics Corporation of India Limited, Hyderabad in an analytical way through suitable statistical tools.

1.8 OBJECTIVES OF THE STUDY

The main objective of the study is to analyze the working capital management at ECIL, Hyderabad. Hence, the specific objectives of the study are:

1. To examine the procurement and utilization of working capital at ECIL, Hyderabad.
2. To analyze the management of Cash and Receivables at ECIL.
3. To analyze the management of Inventory at ECIL.
4. To identify the operational problems of Working Capital management at ECIL.

1.10 SCOPE OF THE STUDY AND LIMITATIONS

The scope of the present study, titled “Management of Working Capital at ECIL, Hyderabad.” is limited to the analysis of financing, deployment and performance of working capital. Besides, it also covers certain aspects of working capital viz, Cash, Receivables and Inventory management including the operational problems of working capital.

So, the present study is limited to examine over managerial practices of ECIL, Hyderabad, with regard to sources and application of short-term funds. Hence, the study relates to a period of 10 years, i.e., from 2002 to 2012. Although the study is very comprehensive in nature it is subjected to following limitations broadly, they are:

1. The flaws in the accuracy of the data may reflect in analysis.
2. The ECIL is taken as a case for the study. So the findings of ECIL may not reflect the practices of management of finances of other Electronics Companies.

1.11 DATA SOURCE AND METHODOLOGY

The present study is a case method of research on ECIL, Hyderabad. The data was collected from annual reports of the company, Government reports, research journals etc. Besides, the operational problems of working capital of ECIL have been analyzed through the available secondary data collected from internal reports of the finance department of the organization. In the course of data analysis, various financial techniques namely, Ratios, Growth Rates, Trend Analysis, and statistical techniques namely, Percentages, Coefficient of Correlation and Graphical Presentation are employed.

The estimation of working capital requirement of the organization was made on the basis of linear regression. The model of Regression used is

$$Y_c = a+bx$$

Where Y_c = Working capital

X = sales

a = the intercept of line on the Y-axis i.e. the amount of the working capital required when sales are Nil.

b = the rate of growth in working capital.

8. CHAPTERIZATION

The study titled "Management of Working Capital at ECIL, Hyderabad" is divided into seven chapters and presented as follows:

Chapter –I: Introduction

This chapter deals with the conceptual framework of the research problem, review of literature and methodology of the study.

Chapter-II: Profile of ECIL

This chapter presents the profile and achievements of ECIL in a comprehensive way along with the performance of ECIL as a snapshot.

Chapter - III: Working Capital Management of ECIL

This chapter deals with the analysis of management of working capital in terms of sources, trends, components of current assets and current liabilities, working capital and profitability, the use of long-term sources for working capital and estimation of working capital requirements at ECIL, Hyderabad, through suitable statistical tools.

Chapter - IV: Management of Cash and Receivables at ECIL

This chapter deals with the Management of Cash and Receivables in a detailed manner with the help of Select Statistical tools.

Chapter - V: Inventory Management at ECIL

This chapter deals with the management of Inventory that include sales turnover trend , stock and raw material consumed, inventory turnover and day inventory holding, interval measure, inventory components, inventory and production, cost trends and impact of inventory on profitability through suitable statistical tools.

Chapter - VI: Operational Problems of working Capital Management at ECIL

It presents the operational problems of ECIL in management of working capital.

Chapter - VII: Summary of findings and conclusions and suggestions

This chapter presents the summary of findings and conclusions and suggestions.

CONCLUSION

This chapter presented a bird's overview of management of working capital in public sector enterprises in general and in electronic industry in particular as the research problem is related to Electronics Company, i.e, ECIL, Hyderabad. It explained about the importance and impact of working capital management as one of the financial decisions theoretically.

The chapter also presented a literature review relating to working capital management in general with regard to various industries and in particular with electronic industry through international and national studies. It is found that there are few studies on electronics industry, which are not comprehensive. So the present study is an attempt to fill the research gap.

For the purpose, ECIL, Hyderabad has been undertaken as a case problem. The study period was confined to 10 years i.e., from 2002-03 to 2011-12. As the present study is a case method of research on ECIL, Hyderabad, secondary data sources were used for the purpose of analyzing the working capital aspects. Secondary data was collected from annual reports of the company, Government reports and research journals.

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CHAPTER - II

PROFILE OF ECIL

This chapter presents the profile and Achievements of ECIL in a comprehensive manner including the performance of the company as a snapshot.

2.1 ABOUT ECIL

Electronics Corporation of India Ltd (ECIL) was created essentially to meet the Control & Instrumentation requirements of the Nuclear Power Programme of India by productionising the R&D efforts in the Bhabha Atomic Research Centre (BARC). Right from its inception in 1967, it has been totally supporting all the plans, programmes and endeavour's of the Department of Atomic Energy (DAE) in the chosen areas of Electronics, Instrumentation, IT and Security. ECIL significantly facilitated India's Nuclear Energy Programme to reach greater heights. Today the company is proud to claim that all the operating Nuclear Power Plants in the country are supported by the Instrumentation (I) and Control (C) Systems engineered and manufactured by ECIL for the safe and reliable operation of the Reactors. ECIL, thus, contributed towards creating a strong and dependable indigenous Technology base in the Nuclear Power area.

2.2 PRODUCTS AND SERVICES

ECIL supplied hard wired relay logic systems for older power generating plants like those in Rajasthan and Tamilnadu. As newer technologies became available, ECIL graduated to supply partly computerized systems for plants at Narora and Kakrapara. ECIL provides Programmable Logic Controller and Computer based Control and Information systems for the newer power generating units at Tarapur, Kaiga and Rawatbhata, Rajasthan. Such a way, ECIL pioneered several technologies in the Country. Prominent products and services of ECIL are:

1. Digital Computer
2. Solid State TV
3. Control & Instrumentation for Nuclear Power Plants
4. Earth Station Antenna
5. Computerized Operator
6. Information System Radiation
7. Monitoring & Detection Systems
8. Automatic Message Switching
9. Systems Programmable Logic

10. Controller

11. Solid State Cockpit Voice Recorder

12. Electronic Voting Machines

ECIL is a MOU signing Company with DAE. Even, it has achieved MOU excellence Awards in 2006-07 and 2007-08 in “Electronics & Communication Sector” from Department of Public Enterprise. The Company has also bagged the prestigious SCOPE Award for “Excellence and Outstanding Contribution to the Public Sector Management under the Medium PSE Category 2007-08”. It is evident that there are so many achievements in the journey of ECIL. Following are some of the significant technological accomplishments in the recent years:

1. 32 Meter Deep-space Network Antenna System IDSN32, which ably supported the maiden Indian Moon Mission.
2. State-of-the-art Electronic Warfare Systems.
3. Missile Support Systems
4. Sub-Systems for Nuclear Reactor C&I
5. Control Instrumentation for Prototype Fast Breeder Reactor
6. Integrated Security Systems for Commonwealth Games – 2010, Delhi.

Besides the above, the company has achieved a sales turnover of Rs.1187 crores in the year 2009-10. The authorized share capital of the company is Rs.200 Crores, of which Rs.163.37 crores was paid up as on March 31, 2010. During the financial year 2009-10, the Company paid a dividend of Rs. 1470.34 Lakhs. Hence, the company has organized its business operations Division-wise under Strategic Business Unit (SBU) Concept, bringing products of related technology under one Division each.

2.3 VISION

The vision of the company is to contribute to the country in achieving self - reliance in strategic electronics.

2.4 MISSION

In accordance with the vision the organization has formulated its mission so as to strengthen its status as a valued technology provider to the Nation particularly in the area of strategic Electronics meeting the requirements of Atomic Energy, Defense, Space, Civil Aviation, Security and other such sectors of strategic, economic and social importance.

2.5 OBJECTIVES

The major objectives of the Company in the path of its vision and mission are:

1. To develop and manufacture indigenous technology, products and services in the area of Defense, Nuclear, Space, Security, Information Technology and Telecom Sectors.
2. To provide a professionally challenging and fulfilling environment
3. To be an industry leader in Controls, Communication and Computer for employees and help them to realize their full potential.
4. To be a responsible corporate citizen of the Country, balancing Productivity, health, environment and safety.
5. To achieve highest standards of Corporate Governance.
6. To invent products and technology solutions for the benefit of Society in the areas like Agriculture, Education, Health, Power, Transportation, Food, Disaster Management etc.
7. To progressively improve shareholder value of the Company.

2.6 DUTIES

It is very clear that the duties of the Company based on its vision, Mission and objectives are:

1. To attain the objectives set out in the Memorandum of Association.
2. To comply with all the statutory regulations and implement Government orders issued from time to time.
3. To effectively utilize the material resources and skills with suitable restructuring of manpower.

4. To manage the business on commercial lines in the climate of growing professional competence and be fair in its dealings with all its customers, suppliers, employees etc.

As one of the gaint Organization, ECIL manufactures and supplies a wide range of equipment which include,

1. Control Room Panels
2. Operator Information Systems
3. Programmable Controllers
4. Operator Training Simulators
5. Dual Processor Hot Standby Systems (DPHS)
6. Reactor Regulating Systems
7. Electrical SCADA
8. Nuclear Instrumentation Modules like HV and Spectroscopy Amplifier, Module Bins and Power Supplies.
9. Hand Held Survey and Contamination Monitors to detect Alpha, Beta and Gamma Radiation.
10. Spectroscopy Systems using HP Germanium and Scintillation Detectors coupled with Multi Channel Analyzer to perform an array of lab experiments.
11. PC based Whole Body Contamination Monitors.
12. Security applications for Home Land.
13. Vehicle Monitoring System
14. Limb Monitor and Portal Monitors
15. Smart Radiation Monitors are under development to meet the needs of Reprocessing Plants and Nuclear Power Plants for integration into Plant environment.
16. The corporation has drawn out plans to expand its operations in design, development, manufacturing and supply of highly advanced products.
17. Radiation Detectors like Boron Lines counters, BF3 Counters, High Temperature Fission Counters and Ionization Chamber.

2.7 DEPTH AND DIVERSITY

ECIL has extensive experience in PLC based control Systems and SCADA and has been supplying sub-systems for Oil and Gas pipelines and power management for over 25 years. In the nuclear area, ECIL has engineered and supplied PLC based Control System for Uranium Corporation of India Limited, Ore Processing Plant near Jamshedpur. The Control System employs fault tolerant PLC and PC based SCADA, Human Machine Interface System with hard wired backup. ECIL has also developed systems for Control and Monitoring Spent Fuel Reprocessing at BARC, Tarapur. This spectacular journey in the area of nuclear energy has always been marked with outstanding achievements and extraordinary accomplishments. Making this possible, the Engineers and Scientists of ECIL, with high level of commitment and dedication have transformed the organization in to a national asset. However, the ECIL geared up for the nuclear renaissance.

2.8 RESEARCH AND DEVELOPMENT

In addition to in-house Research and Development activities, ECIL adopts the basic designs developed by Bhabha Atomic research centre (BARC) and Nuclear Power Corporation of India Limited (NPCIL) and takes the help of engineers in making the maximum utility for the industrial and society use. Recently, the company signed a Strategic MoU with IGCAR (Indira Gandhi Centre for Atomic Research) to meet the C&I requirements for Fast reactors, Fuel Cycle Projects and also for High Performance Computer Systems and Security. Technology Planning, Identification of Projects / Solutions, Funding and Project Monitoring happens through Technology Development Council (TDC), an institutional mechanism to promote actionable R&D and timely productionisation to support the ambitious programmes and expansion plans of the Department of Atomic Energy.

2.9 STRUCTURE

All the way Strategic Business Units (SBUs) of ECIL are tuned to the varied requirements of country's Nuclear Power Programme, right from components to complex systems. However, keeping in view the ambitious programmes of the Department of Atomic Energy, some divisions are totally dedicated to the nuclear sector. They include:

1. Control and Automation Division (CAD)
2. Radiation Detectors and Instrumentation Division (RID)
3. Control & Instrumentation Division (CID)

In addition to the above, the following Divisions offer select products and solutions in the areas of Simulators, Supervisory Control, Security, Encryption etc. They are:

1. Antenna Products and Satcom Division (AP & SD)
2. Control & Instrumentation Division (CnID)
3. Instruments and Systems group (ISG)
4. Telecommunication Division (TCD)
5. Components Division (CD)

2.10 QUALITY, SAFETY INFORMATION SECURITY AND ENVIRONMENTAL COMPLIANCE

The infrastructure for supporting the entire life cycle of the projects meant for the Nuclear Sector is being totally modernized and expanded, to focus on end user requirements of Quality and Reliability, Safety, Information Security and Environmental compliance. Major initiatives with the support of BARC include creation of the following facilities, which are in their final stages of completion.

1. EMI/EMC Centre of Excellence
2. Compact Antenna test Facility
3. PCB Facility with High Density Interconnection Technology
4. Radiation Detectors and Instrumentation Characterization

All the divisions of the Company are independently certified for their respective Quality Management Systems (QMS) as per ISO9001. The entire company is certified for its Environmental Management System (EMS) and occupational Health and Safety as per OHSAS18001. The Calibration and Measurement Laboratory is Accredited as per ISO17025. The information Security Management System is covered by the regulatory framework of the Atomic Energy Regulatory Board and is subject to periodic audits, surveillance and management reviews. As a Public Enterprise under the Department of

Atomic Energy, Quality, Safety and Environmental Management have been the areas of focus ever since inception of the company. This focus has been continuously addressed by the Quality Assurance Agencies of the customer, regulatory agencies like the Atomic Energy regulatory Board and the Pollution Control Boards. The company developed well laid out strategies and policies for Quality, Safety, and Environment and achieved certification as per applicable International Standards. Recently the company has also initiated steps to get Certification for Information Security Management, Quality and Customer Satisfaction are essential parts of the annual MoU signed with the Government of India.

2.11 QUALITY MANAGEMENT SYSTEM

Standards and Quality Assurance Group (SQAG)

At ECIL, Corporate Quality Assurance Service Facility is made effectively, despite the individual business groups own Quality Control/Quality Assurance sections. Hence, this corporate facility caters to the common requirements as mentioned below:

- Assurance, testing and Calibration to the satisfaction of its CUSTOMER” Thus, (SQAG) is a Corporate Services Group catering to the needs of all Productions divisions in the areas of 1. Standards 2. Quality Assurance 3. Environmental and Calibration Service and 4. Industrial Engineering.

2.12 STANDARDS

In this area, SQAG maintains national and international standards for reference of Product divisions. SQAG organizes and coordinates the participation of ECIL experts in various branches of standardization activity organized by Bureau of Indian Standards, Electronics Standardization Subcommittee and Electronic Components Standardization Organization of Ministry of Defence and any other organization that needs the expertise. A link is established to browse or download Defence standards through Dial-up connection to Defence standardization cell, Hyderabad, situated at DLRL.

Hence, ECIL’S quality consciousness has resulted in the company receiving the ISO 9000 certification in a wide range of operations such as Control Systems, Hybrid Micro Circuits, Tantalum Capacitors, Telecom Products, Software Consultancy Projects and Customer Support Services. SQAG supports all Product divisions in maintaining

Quality Management System as per ISO 9001:2000. All Product divisions are certified to ISO 9001:2000 Quality Management System.

2.13 ECIL AND IT

Over the years, ECIL has been providing IT solutions to the sectors like Banking, LIC, Agriculture, Hospital Management, Citizen Services, etc. At present ECIL is focusing on applications in the following technologies.

1. 3-tier architecture
2. Web technologies
3. ERP
4. Data Warehousing and Data Mining
5. Network Security
6. e-Governance

ECIL apart from its own internal R&D efforts has also been acquiring know-how from various R&D establishments and outsourcing R&D work to some of the academic institutions.

2.14 ENVIRONMENT MANAGEMENT SYSTEM

Since 2004, environmental policy was declared and circulated to all divisions. Director (Personnel) was assigned to look after the definition, preparation of all necessary documents and implementation. Under his chairmanship, a management review committee was formed with concerned heads of divisions as members. As a process of making necessary documents as per ISO 14001, EMS manual and essential documents as per the standard were drafted and finalized by our consultant from Centre for Electronics Testing and Engineering (CETE), Kamalanagar, Hyderabad. These documents were revised as per the latest ISO 14001: 2004 standard and issued to all divisional EMS coordinators for reference in the respective divisions.

An awareness training programme on “Environmental Management system” was arranged at corporate level for all EMS Coordinators. Later on, another programme was conducted to make EMS Coordinators aware of preparing EMS documents. The

finalized documents were issued to EMS Coordinators for implementations in the divisions. Internal auditors were trained for auditing the EMS. First internal audit was conducted in June, 2005. Simultaneously, an application form was sent to STQC directorate for EMS registration/certification in May, 2005.

2.15 ENVIRONMENTAL POLICY

We are committed to ensuring an eco – friendly environment by establishing, maintaining and continually, improving and environmental management system with Specific emphasis on

- Compliance with applicable Legislative and Regulatory Requirements.
- Pollution Control and Waste Minimization.
- Conservation of Resources through Optimal Utilization.
- Promoting actionable awareness among all Employees, Customers and suppliers.

2.16 INFORMATION SECURITY MANAGEMENT SYSTEM (ISMS)

ECIL is committed to ensure integrity, confidentiality, availability and security of its information at all times for serving the needs of the Organization in line with its Vision, Mission and Values, while meeting all regulatory requirements.

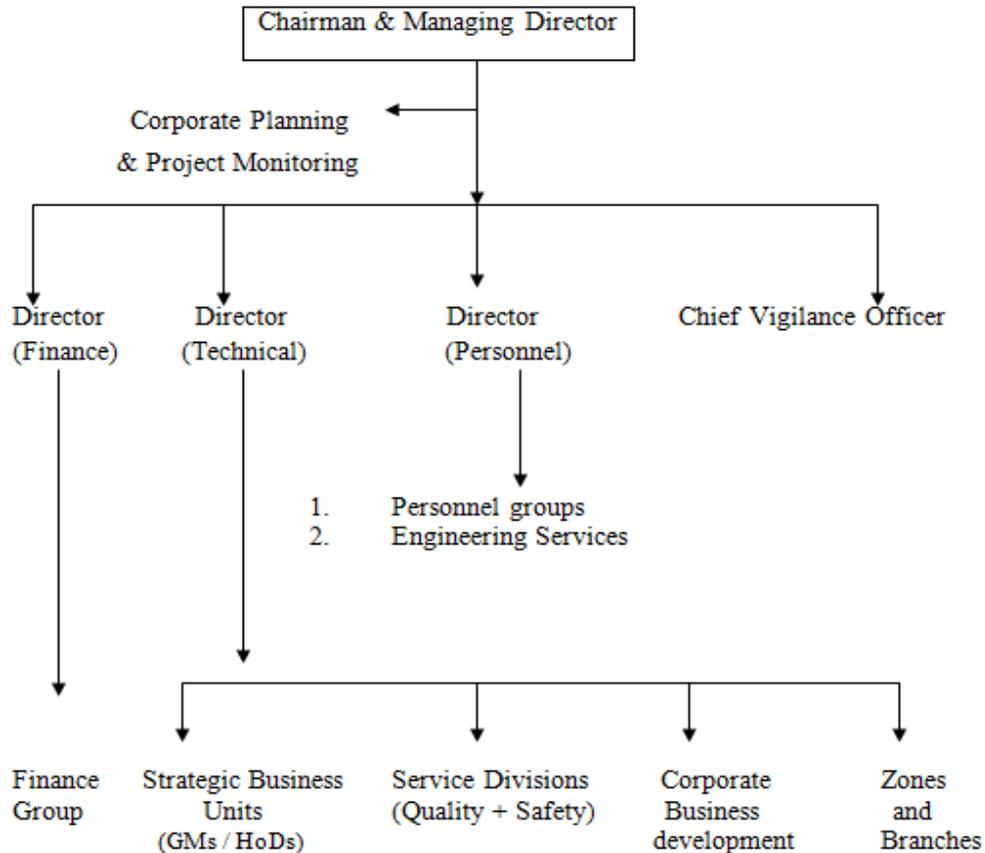
The objective of our ISMS is to ensure continuity of business, and minimize business damage by preventing and limiting the impact of Information Security Calibration Management System.

2.17 ORGANIZATIONAL STRUCTURE OF ECIL

ECIL as a big organization in the electronics industry follows a mixed structure of organizational design.

The organogram of ECIL is presented below through which one can understand well the flow of authority and the key responsible position. (See figure 2.1 for details).

Figure 2.1

ORGANOGRAM OF ECIL**2.18 THE POWERS AND DUTIES OF OFFICERS AND EMPLOYEES**

ECIL is a commercial organization with well defined powers and duties. Important powers and duties are given below.

Chairman & Managing Director

As Chief Executive, he is accountable to its Board of Directors. She/he is responsible for optimization of resources and achieving Company objectives. He /She have the powers to:

1. Appoint, promote employees up to all levels of posts, except the appointments made by the Board of Directors or Govt. of India appointees.
2. Grant allowances, leaves, loans & advances, honoraria or rewards, ex-gratia payments of non-recurring nature on compassionate grounds, subject to rules and budgetary provisions.

3. Sanction purchase of plant & machinery and other assets, within the sanctioned project estimates.
4. Fix selling prices of products.
5. Borrow money on short-term basis, otherwise than on debentures invest funds of the corporation, enter into all contracts and execute agreements, deeds, instruments, leases and documents.
6. To appear and represent the Corporation before various Govt. Authorities or before courts for purpose connected with the company.

Director (Personnel)

Director (Personnel) is a member of the Board of Directors. He reports to Chairman & Managing Director. He/She is overall in-charge of coordinating and implementing personnel and industry relations policies. He/She has the powers to:

1. Sanction recruitment schedules for approved manpower.
2. Decide source / method of recruitment.
3. Engage Apprentices.
4. Responsible for payment of Bonus etc.

Director (Finance)

Director (Finance) is a member of Board of Directors. He/She reports to Chairman and Managing Director. He/ She is overall In-charge of Finance and Accounts. He/She is responsible for evolving and formulating finance policies as well as implementation thereof. He has the power to:

1. Borrow money on short-term basis.
2. Responsible for loan and deposits of money for the corporation.
3. Appoint agencies for financial services and fix remuneration thereof.
4. Operate cash credit and overdraft within the limits and to sign all document relating thereto.

Director (Technical)

Director (Technical) is a member of Board of Directors. He/She reports to Chairman and Managing Director. He/She is overall in-charge of technical functions covering R&D production and marketing. He/She is responsible for optimum utilization of resources. He/She advises on safety matters. He/She has the power to-

1. Sign Memorandum of Understandings.
2. Approve expenditure on marketing and export promotion.
3. Pay advances.

General Manager

The General Managers are responsible for the operations of the Divisions under their administrative control. They will organize material and manpower to achieve the Divisional targets. They have the powers for:

1. Procurement of materials.
2. Entering Service Contracts for Servicing Plant & Machinery and Other Assets of the Corporation.
3. Quoting for tenders.
4. Execution of documents with Customs and Central Excise Departments.
5. Approving of the expenditure on sales promotion / advertisements.
6. Approving official tour programmes within India for the employees under their administrative control.

Heads of the Divisions

The Heads of the Divisions are responsible for the operations of respective Divisions. They generally report to GM concerned. They have necessary powers for production and sales of the Division concerned.

2.19 DECISION MAKING PROCESS

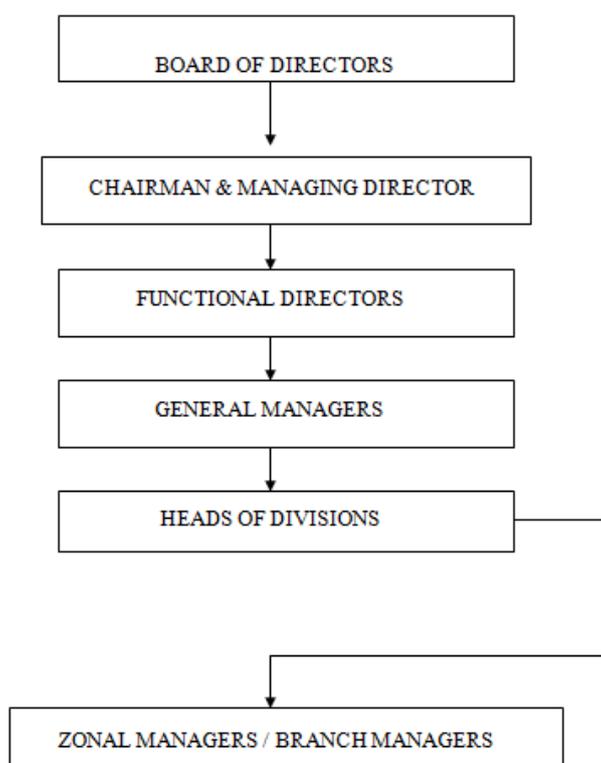
Presently, ECIL has three manufacturing facilities (two at Hyderabad and one at Tirupathi) and Zonal / Branch Offices, Regional Maintenance Centers (RMCs) / Sub-Regional Maintenance Centers (SRMCs) spread across the Country. The SRMCs are

under the administrative control of Respective Zonal / Branch Offices. The Zonal Managers are under the administrative control of Director (Technical). The operations at Head Office are organized into Business Divisions (SBUs) and Services Divisions.

The decision making process in the Company at higher levels involves the following channels. (See figure 2.2)

FIGURE 2.2

Channels in Decision Making Process



2.20 THE NORMS SET BY THE ORGANIZATION FOR THE DISCHARGE OF ITS FUNCTIONS

The Company has notified various procedures, guidelines, schemes and rules to the Employees for discharge of their functions. To meet the changing business needs, the Company issued new rules, modifies the existing rules and notifies them through established internal channels of communication for due compliance by employees.

The Organization follows the guidelines issued from time to time by Department of Public Enterprises and Central Vigilance Commission.

2.21 THE RULES, REGULATIONS, INSTRUCTIONS, MANUALS AND RECORDS, HELD BY THE ORGANIZATION

The important Rules, Regulations, Manuals and Schemes which are notified to the Employees for compliance in discharging their functions, are indicated below:

Matters Pertaining to Company Affairs

- a) Memorandum of Association and Articles of Association of the Company
- b) Purchase procedures
- c) Safety Manual
- d) Sub-delegation of powers by C&MD to Officers of the company
- e) TA&DA Rules

Establishment Matters Pertaining to Employees

- a) ECIL Standing Orders
- b) ECIL Conduct, Discipline and Appeal Rules
- c) Leave Rules
- d) ECIL Medical Attendance Rules
- e) Recruitment / Promotion Policies
- f) Scheme on Workers participation in Management
- g) Scheme on issue of Safety Uniforms
- h) Conveyance reimbursement
- i) Rules on allotment of quarters
- j) Office Language implementation
- k) Scholarship Scheme for SC&ST Students

2.22. MILESTONES IN THE ECIL HISTORY

- Dr. A.S. Rao, Founder & First MD in the year (1967).
- Country's first Analog Computer by ECIL in the year (1972).
- India's first solid state Television Receiver-1973.
- Supply, I & C of control & instrumentation for India's first atomic power plant at kota-(1975).

- Radiation monitoring instruments supplied to Atomic Energy sector-(1975).
- Indigenously developed programmable logic controller-(1978).
- ECIL's contribution to country's air travel security programme by supply, I & C of X-ray Baggage scanners to air ports (1981).
- India's first indigenous satellite earth station Antenna by ECIL-(1983).
- Tran receivers to Ministry of Defense for communication applications-(1987).
- ECIL's own electronic voting machines (EVM) revolutionized election process-(1989).
- World class fuges supplied to Army for use in artillery guns-(1991).
- Significant supplies to Telecom sector operation & maintenance console for Telephone exchanges –(1992).
- Broadcast sector, Manufacture and supply of outside Broadcast van (OB van) to Doordarshan – (1998).
- Critical requirement of Jammers for defense met by ECIL (1998).
- Solid state cockpit voice recorder developed and supplied to Air force-(2003).
- ECIL's foray into outer mission "Chandrayaan" developed manufactured and supplied – (2006).
- ECIL wins "Environment Protection Award" in R&D category (2012).

2.23 PERFORMANCE OF ECIL

ECIL a multi – product and multi disciplinary organization, sits pretty despite the economic meltdown with its best ever initial order book for the financial year 2009-10. "The Company, is focusing on atomic energy, defence, space and security applications, has initial orders worth Rs.1000 crore for the next fiscal, the maximum figure compared to any other financial year. The gross turnover of the company in 2005-06 was Rs. 700 crore with Rs. 50 crore profits before tax. The turn over touched the Rs. 1,000 crore mark the following year and it went up to Rs. 1,002 crore in 2007-08 with Rs. 201 crore profit. The year 2008-09 too was expected to end with over Rs. 1,000-crore turnover. It is on an upswing following its contribution to antenna tracking control system for the

successful moon mission –Chandrayann-I, and its ground support system for Brahmos missile.

The company is confident that the deal with the U.S. for setting up nuclear power plants in the civilian sector would throw up more opportunities for ECIL in IT, nuclear reactor instrumentation, security, access control systems.

Besides supplying 80,000 electronic voting machines this year, its IT applications to benefit society provide health enhancement equipment, including telex-radiology, farmer-friendly market information kiosks.

Not only that, even, ECIL is executing the entire project of finding out more about the secrets of universe. The world's largest telescope at the highest altitude is being established at Hanle, Ladak with the cit-based firm. This project is called MACE (Major Atmospheric Carenkov Experiment) Telescope, the 21-metre instrument would enable the study of high energy cosmic gamma-ray sources in the hitherto unexplored energy rage of 20 to 100 GeV ((giga electron volt) and beyond five TeV (tera electron volt). ECIL is manufacturing the telescope for Bhabha Atomic Research Centre (BARC).

The entire telescope is expected to be operational next year and it would be assembled at ECIL in modular form, dismantled and taken to Hanle for setting up. It would basically detect gamma-ray bursts from pulsars and stars. The indigenously built telescope would be remotely operated and powered by solar energy.

The telescope is coming up on the campus of Indian Astronomical Observatory (IAO) at Hanle. Close to the proposed MACE site, the Indian Institute of Astrophysics (IIA), Bangalore is operating Himalayan Chandra Optical telescope.

A seven elements wave front sampling gamma-ray telescope HAGAR (High Altitude Gamma Ray Telescope) was also jointly established by IIA and the Tata Institute of Fundamental Research (TIFR). The close proximity of the telescopes would help in co-ordinate multi-wavelength studies of the cosmos.

2.24 HUMAN RESOURCES / EMPLOYEE RELATIONS

The management of the Company believes that the human resource is its most valuable asset, which needs to be nurtured and equipped with necessary training and tools to face the challenges posed by the dynamic business environment, on an ongoing basis. The

management of the company is committed to the welfare and career growth of its employees.

2.25 PERFORMANCE INDICATORS AT GLANCE

Financial and Fiscal performance of any organization can be appraised based on certain select performance indicators such as total production, sales, net profit, capital employed, etc. Data collected in this regard relating to ECIL has been analyzed and shown in terms of some select performance indicators, through table 2.1.

TABLE 2.1
PERFORMANCE INDICATORS

Rs. in Crores

Indicators	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Turnover	1010 (100)	935 (92.57)	771 (76.33)	700 (69.30)	1006 (99.60)	1002 (99.20)	1060 (104.95)	1187 (117.52)	1382 (136.83)	1576 (156.03)
Production at realizable value	849 (100)	851 (100.23)	711 (83.74)	654 (77.03)	912 (107.42)	936 (110.24)	994 (117.07)	1114 (131.21)	1226 (144.40)	1417 (166.90)
Profit before interest and depreciation	173 (100)	131 (75.72)	51 (29.47)	52 (30.05)	193 (111.56)	201 (116.18)	19 (10.98)	54 (31.21)	22 (12.71)	55 (31.79)
Profit before tax and after other appropriations	80 (100)	98 (122.5)	37 (46.25)	42 (52.5)	128 (160)	134 (167.5)	13 (16.25)	42 (52.5)	23 (28.75)	37 (46.25)
Net worth	202 (100)	299 (148.01)	322 (159.40)	363 (179.70)	464 (229.70)	560 (277.22)	568 (281.18)	593 (293.56)	606 (300)	632 (312.87)
Capital employed	194 (100)	298 (153.60)	322 (165.97)	349 (179.89)	447 (230.41)	706 (363.91)	776 (400)	755 (389.17)	872 (449.48)	451 (232.47)
Value added	356 (100)	379 (106.46)	291 (81.74)	264 (74.15)	437 (122.75)	504 (141.57)	389 (109.26)	401 (112.64)	498 (139.88)	530 (148.87)

Source: Annual reports

It is evident from the table 2.1 that Turnover and production have increased significantly over the study period. Net worth of the organization as well as capital employed of the organization has also increased significantly so capital turnover and value added increased the organizations contribution to exchequer. Table also indicates that the trend in turnover was 92.57 per cent in the year 2003-04, 76.33 per cent, 69.30 per cent, 99.60 per cent, 99.20 per cent respectively in the years 2004-05, 2005-06, 2006-07 and 2007-08. It increased to 117.52 per cent, 136.83 per cent and 156.03 per cent in the years 2008-09, 2009-10, 2010-11 and 2011-12 respectively. Production at realizable value showed an upward trend from 100.23 per cent in 2003-04 and increased to 166.90 per cent in 2011-12. Similarly Profit before interest and depreciation showed substantial fluctuations as it was 75.72 per cent in 2003-04 and ended with 31.79 per cent in 2011-12 respectively. Coming to profit before tax and other appropriations, it started with 122.5 per cent in 2002-03 and gradually came down in the subsequent years. It was 16.25 per cent in 2008-09, 52.5 percent in 2009-10, 28.75 per cent in 2010-11 and 46.25 per cent in 2011-12. The net worth of ECIL increased gradually from

148.01 per cent in 2002-03, and then slowly increased to 293.56 per cent in 2009-10, 300 per cent in 2010-11 and 312.87 per cent in 2011-12 respectively. Capital employed of ECIL increased from 153.60 per cent in the year 2002-03 and increased sharply to 400 per cent in the year 2008-09, 449.48 per cent in 2010-11 and came down to 232.47 per cent in 2011-12. Similarly, value added of ECIL increased from 106.46 per cent in 2002-03 and increased to 148.47 per cent in the year 2011-12.

CONCLUSION

ECIL was established on April 11, 1967, under the Companies Act as a commercial venture under the Department of Atomic Energy with six manufacturing divisions. The Corporation was set up to realize the objectives to develop and manufacture indigenous technology, products and services in the area of Defense, Nuclear, Space, Security, Information technology and Telecom sectors. Also, the company aims to be an Industry leader in Controls and Communication and help them to realize their full potential. The financial performance analysis of the company reveals that the Net worth of the organization as well as capital employed increased significantly, hence, Capital Turnover and value added increased the organizations contribution to exchequer. Profit before interest and depreciation have shown a mixed trend during the study period.

CHAPTER - III

**MANAGEMENT OF
WORKING CAPITAL**

This chapter is a modest attempt to discuss on the conceptual frame work of working capital and its management in a theoretical way. It also presents the analysis of Working Capital of ECIL in terms of Components of Working Capital, Sources of Working Capital, Working Capital and profitability, Estimation of Working Capital and Net Working Capital through select statistical tools in a comprehensive way.

3.1 THE CONCEPT

The term working capital refers to the capital required for day-to-day operations of a business enterprise. It is represented by excess of current assets over current liabilities. For any organization to run successfully it requires adequate working capital. Moreover, the management should also pay due attention in exercising proper control over working capital. It has been correctly observed by Schell and Haley that managing current assets require more attention than managing plant equipment expenditure. Broadly, the working capital can be divided into two concepts, they are:

Gross working capital: It refers to the firms' investment in total current (or) circulating assets.

Net working capital: It is the excess of current assets over current liabilities. It is that portion of firm's current asset which is financed by long-term funds.

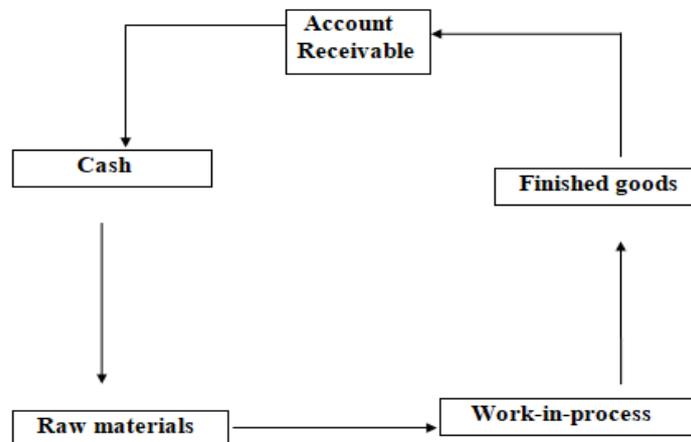
3.2 NEED FOR WORKING CAPITAL

It has already been stated in the preceding chapter that the basic objective of financial management is to maximize share holder's wealth. This is possible only when the company earns sufficient profits. The amount of such profit largely depends upon the magnitude of sales. However, sales do not convert into cash instantaneously. There is always a time gap between the sale of goods and receipt of cash. Working capital is required for this period in order to sustain the sales activity

Operating cycle: From the above, it is clear that working capital is required because of the time gap between the sales and their actual realization in cash. This time gap is technically termed as operating cycle of the business.

The operation cycle of manufacturing business can be shown as in the following Figure - 3.1.

FIGURE - 3.1



In the case of a trading firm the operating cycle will include the length of time required to convert (i) cash into inventories, (ii) inventories into accounts receivable and (iii) accounts receivable into cash. In the case of a financing firm the operating cycle includes the length of time taken for (i) conversion of cash into debtors and (ii) conversion of debtors into cash.

3.3 TYPES OF WORKING CAPITAL.

Working capital can be divided into two categories on the basis of time they are: (i) permanent working capital, (ii) temporary (or) variable working capital.

Permanent working capital

Permanent working capital is permanently needed for the business and therefore it should be financed out of long-term funds.

Temporary Working Capital

The amount of such working capital keeps on fluctuating from time to time on the basis of business activities

3.4 FACTORS DETERMINING WORKING CAPITAL

Production Policies

The production policies pursued by the management have a significant effect on the requirements of working capital of the business. The decision of the management regarding automation, etc., will also have its effect on working capital requirements.

Nature of the Business

Working capital also depends upon the nature of the business. The public utility concerns like railways, electricity, etc., have very little need for working capital since most of their transactions are on cash basis and moreover, they do not require large inventories.

Length of the Manufacturing Process

Longer the manufacturing process, the higher will be the requirements of working capital and vice-versa. This is because of the reason that highly capital intensive industries like ECIL require a large amount of working capital to run their sophisticated and long production process.

Credit Policy

A company which allows liberal credits to its customers may have higher sales but will need more working capital as compared to a company which has efficient debt collection machinery and observing strict credit terms.

Trading of Turn Over

There is high degree of correlation between the quantum of working capital and the speed with which the sales are affected. A company having a high rate of turnover will need lower amount of working capital as compared to a company which has a low turnover.

3.5 COMPONENTS OF WORKING CAPITAL

Since working capital is in excess of current assets over current liabilities the forecast for working capital requirements can be made only after estimating the amount of different constituents of working capital. The procedure for estimating each of the constituent and the information required for the purpose is discussed below.

Inventories

The term inventories include stock of raw material, work-in-progress and finished goods. The estimation of each of them will be made as follows:

a) Stock of Raw Materials: The average amount of raw materials to be kept in stock will depend upon the quantity of raw materials required for production during a

particular period and the average time taken in obtaining a fresh delivery. Suitable adjustments may have to be made to provide for contingencies and seasonal factors.

b) Work-in – Progress: The cost of work-in-progress includes raw materials, wages and overheads. In determining the amount of work-in-progress, the time period for which the goods will be in the course of production process is most important.

c) Finished Goods: The period for which the finished goods have to remain in the warehouse before sales is an important factor for determining the amount lowered up in finished goods.

Sundry Debtors

They will be computed on the basis of credit sales and the time lag in collecting payment.

Cash and Bank Balances

The amount of money to be kept as cash in hand and bank balance can be estimated on the basis of past experience. Every businessman knows the amount that he will require for meeting his day to day payments.

Sundry Creditors

The lag in payment to suppliers of raw materials, goods, etc., and the likely credit purchase to be made during the period will help in estimating the amount of creditors.

Outstanding Expenses

The time-lag in payment of wages and other expenses will help in estimating the amount of outstanding expenses.

In the preceding chapter it has been explained that the capital requirement of a business can be divided into two main categories:

- I. Fixed capital requirements and
- ii. Working capital requirement

3.6 SOURCES OF WORKING CAPITAL

The working capital requirements should be met both from short-term as well as long-term sources or funds

The financing of working capital through short-term sources of funds has the benefits of lower cost and establishing close relationship with the banks. Financing of working capital from long-term resources provides the following benefits. (i) It reduces risk, since the need to repay loans at frequent intervals is eliminated. (ii) It increases liquidity, since the firm need not to worry about the payment of these funds in the near future.

The finance manager has to make use of both long-term and short-term sources of funds in a way that the overall cost of working capital is the lowest and the funds are available on time and for the period they are really needed.

3.7 APPROACHES FOR DETERMINING THE FINANCING MIX

There are three basic approaches for determining the working capital financing mix.

The Hedging Approach

According to this approach, the maturity of sources of funds should match the nature of assets to be financed. This approach is therefore also termed as matching approach.

- (a) Permanent working capital: Funds required for purchases of core current assets, such funds do not vary over time.
- (b) Temporary or Seasonal working capital i.e., funds which fluctuate overtime.

The Conservative Approach

According to this approach all requirements of funds should be met from long-term sources. The short-term sources should be only for emergency requirements.

3.8 ESTIMATING WORKING CAPITAL REQUIREMENTS

In order to determine the amount of working capital needed by a firm, a numbers of factors viz., production policies, nature of business, length of manufacturing process, credit policy, rapidity of turnover, seasonal fluctuations, etc., are to be considered by the finance manager. Besides this, a finance manager can apply any of the following techniques for assessing the working capital requirements of a firm.

Estimation of Components of Working Capital Method

Since working capital is the excess of current assets over current liabilities, an assessment of the working capital requirements can be made by estimating the amounts

of different constituents of working capital, e.g., inventories, accounts receivable cash, accounts payable, etc.

Operating Cycle Approach

According to this approach the requirements of working capital depends upon the operating cycle of the business. The operating cycle begins with the acquisition of raw material and ends with the collection of receivables. It may be broadly classified into four stages viz.

- i. Raw materials and stores storage stage
- ii. Work -in-process stage
- iii. Finished goods inventory stage
- iv. Receivable collection stage

Symbolically, the duration of the working capital cycle can be put as follows:

Where, O = Duration of operating cycle

R = Raw materials and stores storage period

F = finished stocks storage period

D = Debtors collection period

C = Creditors payment period

Each of the components of the operating cycle can be calculated as follows:

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

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

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

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

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

3.9 FINANCING OF WORKING CAPITAL

Capital is of two types, fixed capital and working capital. The working capital of a business enterprise is that portion of its financial resources which are used for a variable operating purpose.

Working capital has two concepts viz., gross and net working capital. Gross working capital is the total of all current assets viz., inventory, marketable securities, cash and bills receivable. Net working capital refers to the excess of current assets over current liabilities.

Both these concepts have their own significance but the management is particularly interested in gross working capital concept for the productive utilization of fixed assets and also to get an analytical insight into profitability, with reference to the management of current assets. The net concept is useful to gauge the financial soundness of a firm, as such, it is of special interest to sundry creditors and suppliers of short-term loans and advances. It creates confidence among the creditors, about the security against their claims. The integration of both these concepts is necessary to understand working capital management from the angle of risk, return and trade - off in business.

3.10 SOURCES OF FINANCE

Any enterprise requires two kinds of working capital viz., fixed and variable. A firm in order to keep its current assets in circulation requires a fixed amount of working capital and this takes the form of a minimum amount of inventory of raw materials, work in process, finished goods, spare parts and equipment to keep the enterprise in continuous and uninterrupted operation. This amount is known as fixed or core working capital.

Besides this, a firm requires additional working funds for the seasonal variations, which may be termed as variable working capital.

The basic sources of working capital are proprietary contribution, bank borrowings and other borrowings, besides plough back amount, Permanent working capital must be financed by the proprietors and for further such needs it should be ploughed back from profits and for variable working capital it may be financed through banks and other borrowings.

Commercial banks advance loans to small scale industrial units for working capital needs. This kind of short-term accommodation given by banks may take the form of cash credits or overdrafts or discounting bills. The distinct feature of cash credit system is that it enables the entrepreneur to make withdrawals whenever needed and repayments into the account to suit the continuous nature of business operations.

At times, the current account holders are also permitted to overdraw up to the limit sanctioned to him, which becomes overdraft. Most of the cash credits are secured either by hypothecation or pledge of raw materials, work-in-progress or finished goods. However, over draft is of temporary nature with personal security.

Commercial banks provide working capital, finance to small scale industrial units by purchasing the bills of the entrepreneur. The term bill purchase ordinarily refers to purchase of demand bills. While the term bill discounted denotes the essence bills, negotiated by the banks. Bills discounted are generally clean, but in respect of import and exports, documentary bills are also transacted.

The Chore Committee (1980) pointed out that as a permanent feature most of the borrowers from banks for working capital need maintain a substantial amount of cash credit facility which amounts to be fixed working capital. This reveals that the entrepreneurs are raising bank finance to meet permanent working capital needs which is not a sound policy. Further, the present study also evidently observes that the entrepreneurs of the selected units have a permanent bank borrowing for the working capital needs.

Usually, bank finance will not be available to meet the day-to-day operational obligations of the business for which an entrepreneur should either depend upon his

own contribution or on other borrowings. Further, outside borrowings involve certain practical difficulties like differences between the approved and available rate of interest. This phenomenon makes an entrepreneur to charge, the difference of this interest rate on some other head of account, like miscellaneous expenses, which in turn drains away the income of the business.

Fully equipped enterprise, without adequate supply of materials to process or without adequate cash to pay operating expenses or to sell the manufactured goods is virtually fruitless. Therefore, the proportional role of the components of working capital performs a great part in maximizing the return on the capital employed of an enterprise. The size of working capital employed in an enterprise predominantly indicates the objective of making profits and the manner in which it is being administered. Even in the best of times working capital management is a problem of considerable importance to entrepreneurs. During a period of credit squeeze and high interest rates the problem becomes all the more consequential. However, all firms may not be equally responsive to the problem of working capital management as it is determined to a large extent with the asset structure.

If the amount of working capital varies with fixed capital, the amount of risk that a firm assumes also alters and the opportunity for fall or loss increases. Taking this proposition as the basis the impact of working capital management on return on investment is being examined. Hence, some of the important sources of working capital financing are discussed in the following lines.

(I) Trade Credit

Trade credit is a credit availed by a business when it purchases goods without making payment in cash. The credit period begins on the receipt of goods and stretches till the payment is made, therefore, the business starts enjoying the goods and at the same time conserves cash till the expiry of the credit period. The cash so conserved tantamount to short-term financing provided by supplier for the duration of credit period.

(II) Factoring

Factoring does mean, specialist Companies which are in the business of factoring undertake the management of sales ledger of their business clients. Receivables are sold

by the business to a factor who takes the responsibility of recovering money from its customers on the due dates. Factoring Companies, which are normally, finance houses, charge fees for providing this service.

(III) Invoice Discounting

Invoice discounting is a method under which a business sells the invoice raised on its client to a specialist company at a discount. The discounter releases initial payment up to 75% of the invoice price. Collection of debts remains with the business which acts as an agent of the discounter, on the receipt of money from its customer the business forwards the same to the discounter, generally a finance house.

(IV) Bank Financing

For the short-term financing commercial banks are the most important sources. Traditionally, the banks provide support to their business clients at the critical times. Being specialists in short-term lending they have developed a number of schemes to suit the individual needs of the borrowers.

(V) Over draft

An over draft is a credit facility provided by a bank to a customer to draw money over and above the amount available in his account subject to a prefixed limit and period. This is the most common credit facility, which is in vogue. The overdraft facility is provided through a current account opened with the bank. The balance in the current account keeps on fluctuating from debit to credit. The bank honors the demands of the borrower provided it is within the sanctioned limit.

(VI) Cash Credits

As per banking terminology, cash credit is a 'drawing account'. Under the arrangement a business is authorized to draw cash subject to the limit pre-fixed by the bank. Cash credit is advantageous to a business, unlike under term loans, where full amount is made available to the borrower, in the case of cash credit, a credit limit is put at his disposal.

(VII) Bill Financing

Analogically, a bill of exchange is like a post-dated cheque. It is an instrument containing an unconditional order signed by a drawer directing a certain person to pay a certain sum of money to or to the order of a person or to the bearer of the instrument.

Thus, there are three parties in a bill of exchange the drawer, the drawer and the payee and bill financing has become an important element of money market. There are three types of bills of exchange:

(1) Documentary Bills (2) Accommodation Bill (3) Rediscounting Bill.

(VIII) Commercial Paper

Commercial paper is a typical I.O.U. instrument since it is unsecured, only large business houses enjoying highest credit rating in the market can attract funds by issuing commercial paper. Normally big finance companies associates with large conglomerates and commercial banks use these instruments as a source of raising funds.

(IX) Indigenous Money Lenders

When there are pressing demands, the business small and local units in particular, are tempted to raise funds from private individuals. These money lenders operate in a highly unorganized way. The advantages of these sources are simplicity and instantaneous receipts of funds.

(X) Depreciation as a Source of Financing Expansion

The purpose for which funds are needed determines the source and nature of funds and the size and source of funds determine their deployment. The size of the amounts available, the purpose for which they were spent and their changing proportions, the effectiveness with which the deployed funds were utilized determine the success or otherwise of an organization's activities.

Unless funds are committed to an activity and assets are acquired and put into operation the activity cannot get started. It is with the purpose of exploiting a profitable investment opportunity funds are committed to an activity. Usually, the desired level of activity is determined first, and the required level of finances is estimated and procured. After funds are acquired, they are deployed, either as fixed capital or as working capital, the proportions amongst the two being decided by the nature of the industry. It is important to note the implication in the direction given to the Corporation that it shall act on "business Principles" i.e., the activity shall cause for greater in flows to be generated for a given level of out flows. It is desirable to see as to how far the spirit of business principle acted as the guiding influence in the deployment of funds. Further, as

investment in non-operating capital, one would expect only a reasonable level of working capital to be maintained, as working capital area is not considered to be of significance in the context of a public utility. In this chapter, it is intended to study as to how the funds at the command of the organization were deployed i.e., how these funds got employed either as fixed capital expenditure or as working capital and whether such deployment can be considered as appropriate according to the established norms. An attempt would also be made to study the changing proportion of the total capital employed and its impact on the finances of the organization.

3.11 ANALYSIS OF INVESTMENT IN THE WORKING CAPITAL

The analysis of working capital clearly involves a study of two aspects. Firstly, it relates to the total working capital. Represented by the total current assets, their composition and changing proportions. The second aspect is concerned with the financing of working capital i.e. the size of current sources vis-à-vis the size of net financing from long – term sources it would be of interest to study the deployment of funds in the working capital area, especially in the light of the observation made by Kroncke and others that as a general rule the financial manager desiring to achieve profitability objectives would maintain lesser amounts of current assets relative to fixed assets and would finance with higher amounts of current liabilities relative to long-term liabilities . Further, it is relevant to quote Bally’s opinion in this context.

Relationships exist between fixed and working capital if efficient use is not being made of current assets and more specifically the working capital. In case if the working capital is excessive it may be impossible to expand or even maintain fixed assets properly because if working capital requirements are excessive there may be no resources left for fixed assets.

The total funds deployed in the working capital area should not result in an under-investment, because, under-investment in the working capital might critically impair the ability of the fixed capital to perform its job efficiently, while an over-investment would result in a wasteful locking up of funds.

Thus, organizations are required to carefully manage the working capital efficiency or otherwise of management here would very soon affect the management of fixed capital

and thus the total capital employed in the organization. This is more particularly important in the context of a public utility organization, in view of the less important position occupied by the working capital. It is important to note an observation in this context, that 'a very important reason for losses or low level of profits of the public enterprises in India was the ineffective and inefficient utilization of working capital.

3.12 TOOLS FOR ANALYSIS OF WORKING CAPITAL

The basic reason for analyzing the working capital position of a firm is to enable the management to detect the trends and take corrective steps and also plan for future conduct of business. For outsiders, analysis of working capital enables them to know about the management of working capital whether it is effective or ineffective or adequate or inadequate and such other important inferences could be drawn: In this study, few of the ratios which are being used for working capital analysis are briefly explained here under.

Liquidity

The term liquidity refers to the ability of the firm to pay the short-term liabilities (i.e., Current Liabilities) by converting the short-term assets (i.e., Current Assets) into cash without suffering any loss. Here the short-term assets refer to those assets which can be converted into cash within one accounting period without suffering any loss. On the other hand, short-term liabilities are those liabilities which are to be met within one accounting period. This liquidity also depends on the composition of Current Assets vis-à-vis Current Liabilities. Thus, liquidity management becomes a basic and broad connotation of judging the performance of a corporate entity. The important ratios reflecting the liquidity position of a firm are as follows:

Current Ratio

It shows the portion of Current Assets, which is readily available per unit of Current Liabilities and is expressed through the following formula:

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

The Current ratio measures the short-term solvency position of a firm. In other words, it judges the ability of a firm to meet its short-term obligations. Apparently, the higher the current ratio, the greater the short-term solvency and more is the firm's ability to meet its current obligation, since large amount of rupee is available per rupee of current liabilities and, thereby, safety of funds of the short-term creditors is achieved.

Generally, a current ratio of 2:1 is considered to be ideal but it varies according to the characteristics or nature of an industry. A current ratio ideally suitable in all cases cannot be determined. Therefore, each firm should develop its own ratio by comparing with the industry norms, competitors and past experience. It is worth-while to mention that a very high current ratio may not always indicate good liquidity position. A high current ratio may lead to holding of excess inventories over the current requirement. It also indicates inefficiency in the collection period of debtors and high cash and bank balances without proper investment. Therefore, solvency cannot be tested with current ratio alone. Other related ratios should also be considered simultaneously for the purpose.

Liquid/Quick/Acid-Test ratio

Quick Ratio is the ratio between quick assets and quick liabilities and it is computed by dividing quick assets by quick liabilities.

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

Quick Assets refer to current assets minus stock and prepaid expenses (if any) and Quick Liabilities mean current liabilities excluding bank overdraft. The limitations of the current ratio is wiped out by quick ratio by excluding inventories and prepaid expenses from current assets and bank overdraft from current liabilities to have an idea as to how much cash, in reality, can be realized immediately. This helps in providing a true measure of the liquidity position of a firm. Usually, a high quick ratio is an indication of the firm's ability to meet its current obligation and shows the healthy liquidity position of the firm.

Conventionally, 1:1 acid test ratio is considered sufficient. However, both liquid and current ratios should be considered simultaneously in relation to industry average to judge the short-term financial soundness of the firm.

Current Assets to Total Assets

It is calculated as follows:

$$\text{Current Assets to Total Assets Ratio} = \frac{\text{Current Assets}}{\text{Total Assets}}$$

The ratio is an indication of the percentage of funds which are utilized for the purpose of working capital. Higher the investment in current assets, the more will be the liquidity of a firm but at the same time, it decreases profitability. This ratio, by considering the concept of both liquidity and profitability, strengthens the vitality of current assets which is indispensable for an organization.

Stock Turnover Ratio or Inventory Turnover Ratio

Stock Turnover ratio or Inventory Turnover ratio helps to indicate how fast or how many times on an average, inventory holding of an enterprise moves through the firm and, thereby, generates sales or turnover annually. The ratio is calculated by dividing cost of goods sold by average stock.

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Stock}}$$

This ratio indicates whether inventories of a firm are efficiently managed or not and as a result, it affects the liquidity position of the firm. The nature of the business highly influences the rate of stock turnover. Usually, a higher stock turnover ratio indicates quick sales and less or no unnecessary blockage of funds in inventory. However, high inventory turnover ratio may lead to loss of sales due to low level of inventory. A low inventory turnover ratio erodes profitability due to over investment in inventory. Therefore, a moderate level of this ratio should be maintained.

Debtors Turnover Ratio

Debtor Turnover Ratio is measured by dividing credit sales by average debtors outstanding during the year.

$$\text{Debtors Turnover Ratio} = \frac{\text{Annual Credit Sales}}{\text{Average Debtors}}$$

The ratio measures how rapidly cash is collected from the customers. It is an important tool of analyzing the efficiency of liquidity management of a company. The liquidity position depends on the quantity of debtors of a company to great extent. A high ratio indicates that the time lag between credit sales and cash collection is shorter and liquidity of debtors is better.

Creditors Turnover Ratio

Creditor Turnover Ratio is computed by dividing annual credit purchases by average creditors.

$$\text{Creditors Turnover Ratio} = \frac{\text{Annual Credit Purchases}}{\text{Average Creditors}}$$

The ratio is an indication of the speed with which the creditors are satisfied for the amount of credit purchase from them. A high ratio indicates promptness in payment to creditors and, thereby, increases the creditworthiness of the company which in turn reduces the requirement of current assets for a firm.

Working Capital Turnover Ratio

It depicts the relationship between net sales and working capital and it is calculated as follows:

$$\text{Working Capital Turnover Ratio} = \frac{\text{Net Sales}}{\text{Working Capital}}$$

This ratio is also termed as working capital turnover ratio. Financial management may measure the circuit flow of working capital. Generally speaking a high ratio indicates that management is aggressive in its use of working capital. However, an excessively high ratio may indicate poor working capital management since working capital may be inadequate at present sales.

The working capital turnover ratio shows the efficient utilization of working capital in the event of making sales. For different purposes, different forms may be assumed by this ratio. The operating efficiency of the company is indicated when a higher volume of sales is achieved by using comparatively lower amount of working capital. However, a very high working capital turnover ratio is a symptom of trading which may put the organization into financial crisis.

3.13 WORKING CAPITAL MANAGEMENT-AN OVERVIEW

In simple terms, working capital management may be deemed as the management of current assets and the sources of their financing. 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".

Working capital management is concerned with all decisions and influences the size and effectiveness of working capital. It is concerned with the determination of appropriate levels of current assets and their nil-efficient use as well as the choice of the financing mix for raising the current resources.

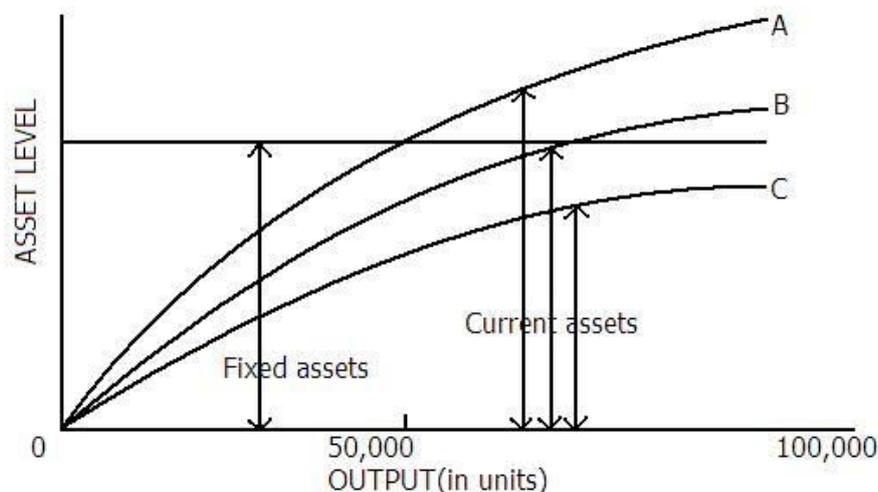
The aspects of management of working capital are:

1. Determining the requirements of working capital.
2. Financing the requirements.
3. Efficient utilization of requirements of working capital.

Before discussing the managerial aspects of working capital, it is proposed to present some important theoretical aspects of working capital which serve as a basis for working capital management decisions. For this purpose, we make use of the four working capital propositions laid down by E.W. Walker and further elucidated by James C. Van Horne. These propositions are also termed as the principles involving risk that serve as the basis of working capital theory.

Principle 1: "If working capital is varied relative to fixed asset investment (also sales), the amount of risk that a firm assumes principle I is also varied and the opportunity for gain or loss is increased." This principle assumes that a definite relation exists between the degree of risk that a firm assumes and the rate of return, i.e. the more the risk assumed, the greater is the opportunity for gain, or loss. The opportunity for gain is increased by choosing an appropriate asset and liability structure. The firm's return on investment will be greater when there is a low proportion of current assets to total assets and a high proportion of current liabilities to total liabilities. This strategy no doubt will result in low level of working capital and greater profitability

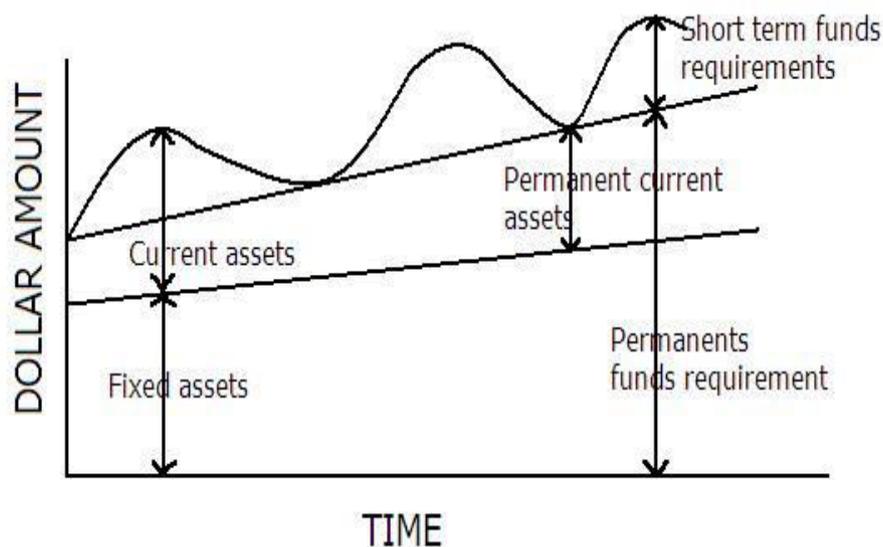
Risk, profitability trade off, is considered by the management again in determining the appropriate level of liquidity to be maintained for the firm. Such trade -off is brought about by holding the fixed assets constant and varying the amount of current assets. Current assets tend to fluctuate with output. Assuming that the firm initially has three current asset alternatives, the relationship between output and current asset levels appears as shown in the figure given below. We are concerned with two situations, viz., conservative policy and aggressive policy. In the case of conservative policy, the ratio of current assets to fixed assets is greatest at every level of output, the firm's liquidity is greatest, and the risk of technical insolvency is lowest. But the profitability of the firm will be lower on account of increased costs of maintaining high liquidity. In the case of aggressive policy, profitability will be higher but the firm has lowest liquidity and correspondingly the greatest risk. Therefore, it should be the goal of management to select the level of current assets that optimizes the firm's rate of return.



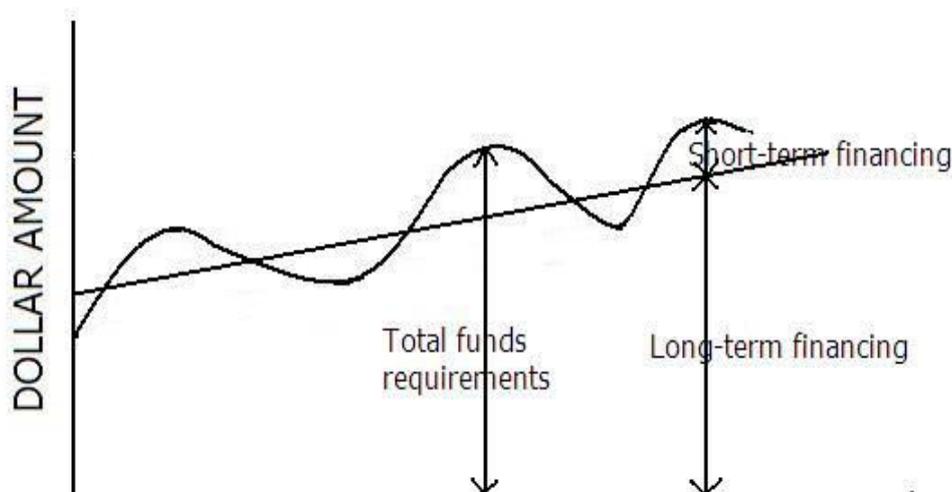
Principle 2: "Capital should be invested in each component of working capital as long as the equity position of the firm increases." This principle is based on the concept that each rupee invested in fixed or working capital should contribute to the net worth of the firm.

Principle 3: "The type of capital used to finance working capital directly affects the amount of risk that a firm assumes as well as the opportunity for gain or loss and cost of capital. There are two approaches to financing which a firm can adopt, viz., the hedging approach and margin of safety approach. Hedging approach is a financial plan which involves the matching of assets with the expected life of the source of funds raised to finance assets. If the firm follows this policy, long-term funds are used to finance fixed assets and the permanent portion of current assets, while short-term funds are used to finance the temporary or variable portion of current assets. This policy is illustrated through the figure on previous page.

Under the hedging approach, the firm's seasonal fund requirements are financed on short-term basis and repaid during seasonal troughs as and when surplus cash is generated. Thus, borrowings are resorted to only when they are needed. Under this policy, while profitability will be higher, the risk in terms of funds availability will be greater.



The margin of safety approach involves financing a portion of the firm's expected seasonal fund requirements on long-term basis as illustrated in the figure given below.



If the expected net cash flows are realized, the debt is repaid of during seasonal troughs, when funds are not needed. The firm thus reduces the risk of fund availability by employing long term funds to finance a portion of its seasonal requirements but the profitability is also reduced on account of higher costs associated with the existence of idle funds (long-term) in times of seasonal troughs.

Therefore, in order to maximize the overall rate of return on investment, firms have to employ an optimal mix of financing policies.

Principle 4: The, greater the disparity between the maturities of a firm's short-term debt instruments and its flow of internally generated funds, the greater the risk and *vice versa*. Under uncertainty, it is not possible to closely synchronize the schedule of expected net cash flows with the schedule of debt payments. The lag between expected net cash flows and payments on debt (called margin of safety) will depend upon the risk preferences of management. The shorter the maturity schedule of debt, the greater the risk that the firm will be unable to pay the debt, and the longer the maturity schedule of debt in relation to expected net cash flows, the less the risk of inability to pay the debt. However, financing is likely to be costlier under longer maturity schedule thus cutting into profits. Profits can be maximized by making every effort to tie debt maturities with the cash inflows of internally generated funds, since in such a case, there will be no need to hold low yielding liquid assets nor to have more long term financing than is absolutely necessary.

Now, it is proposed to highlight the managerial aspects of working capital. For this purpose, we will first discuss working capital in its totality and then in terms of each of its components, viz., inventories, receivables and cash.

3.14 OBJECTIVES OF WORKING CAPITAL MANAGEMENT

With regard to management of working capital there are two major implications. First, 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. Second, 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 and 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 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.

Policies

Effective policies are needed to achieve the set objectives. A neat compartmentalization of the working capital policies relating to profitability and those relating to liquidity is difficult to attempt because in general these policies have an impact on both profitability and liquidity. But we wish to distinguish the policies as between profitability and liquidity objectives keeping in view their major impact.

Some of the policies relating to the profitability objective are : (a) size of current assets to total net assets (b) size of working capital for a given amount of fixed asset investment or sales (risk, return trade off is involved) (c) working capital financing mix and (d) working capital use (turnover). Those relating to the liquidity objective are : (a) size of cash in working capital (higher cash balances) (b) granting of credit and

collection (c) size of net working capital and (d) reducing risk in financing working capital, for example hedging and margin of safety approaches.

Planning

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 business, manufacturing cycle, business fluctuations, production policy, credit policy, credit availability, growth and expansion activities, profit margin, profit appropriation, price level changes, and operating efficiency. It is in 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 therein.

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 items 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 purposes, 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.

Working capital requirements are planned keeping in view the operating cycles. Such planned requirements are shown on annual, quarterly and monthly basis. In forecasting the working capital requirements the problem of coordination with sales, production and collection functions is likely to crop up. This problem is essentially one of making available timely and correct information relating to changes in production schedule, production runs, production slippages, status of collections, and sales forecasts. Hence, the preservation of an optimum level of relationship between working capital and the

scale of manufacturing and selling operations is conditional on the coordination of an extensive range of decisions. The coordination of decisions is secured by setting limits to the discretion which may be exercised by each officer empowered to authorize expenditures.

Organization for Working Capital Management

Normally a separate organizational set-up for management, of working capital in business enterprises does not exist. It is vested in the top financial executive who looks after all the aspects of financial management of the enterprise. He is styled variously as Director Finance/Financial Adviser 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 authorization of expenditure, working capital control, review and re-planning formulation of guidelines for working capital expenditures and obtaining bank finance and other funds to meet the working capital requirements. Fixation of limits of expenditure and authorization of such expenditure is essential in order to avoid recurrent problems involving ad hoc discrimination between the departments.

3.15 ANALYSIS AND DISCUSSION

COMPONENTS OF WORKING CAPITAL

Working Capital is important for any organization irrespective of nature and size of the organization. In general, major amount of investment will be made by organizations in fixed assets, current assets, investments, etc. Hence, a modest attempt has been made in table- 3.1 to analyze and present the components of current assets of ECIL.

TABLE 3.1
COMPONENTS OF WORKING CAPITAL

Rupees in lacks

PARTICULARS	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	Average
INVENTORY	10158.94 (100) (14.21)	10710.86 (5.43) (11.65)	6622.64 (-38.16) (6.69)	7681.96 (15.99) (6.42)	6855.84 (-10.75) (4.74)	6884.13 (0.41) (3.72)	12680.98 (84.20) (5.92)	19467.87 (53.52) (9.41)	15660.79 (-19.55) (7.66)	19839.93 (26.68) (11.13)	116563.94
SUNDAY DEBTORS	31344.03 (100) (43.85)	42946.87 (37.01) (46.71)	36774.52 (-14.37) (37.14)	79468.68 (116.09) (66.36)	98870.90 (24.41) (68.54)	127003.59 (28.45) (68.54)	143600.86 (13.06) (67.01)	141744.87 (-1.29) (68.50)	143887.28 (1.51) (70.40)	80190 (-44.26) (44.99)	925831.16
CASH & BANK BALANCE	22820.44 (100) (31.92)	21182.09 (-7.17) (23.04)	22570.29 (6.08) (22.80)	18940.94 (-16.08) (15.82)	24502.27 (29.36) (16.93)	26794.23 (9.35) (14.46)	23318.459 (-12.97) (10.89)	31147.46 (33.57) (15.05)	27799.68 (-10.74) (13.60)	30909.90 (11.18) (17.34)	249985.75
ADVANCES	7164.07 (100) (10.02)	17095.65 (138.63) (18.60)	33048.039 (93.31) (33.37)	13655.98 (-58.67) (11.40)	14506.70 (6.22) (10.02)	24617.17 (69.69) (13.28)	34668.41 (40.83) (16.18)	13975.48 (-59.68) (6.75)	16136.54 (15.46) (7.90)	16921.95 (4.86) (9.49)	191789.98
OTHER CURRENT ASSETS	-	-	-	-	-	-	-	604.74 (100) (0.29)	914.71 (51.25) (0.44)	30397.91 (3223.22) (17.05)	31312.62
GROSS WORKING CAPITAL	71487.49 (100)	91935.47 (100)	99015.48 (100)	119747.56 (100)	144735.71 (100)	185299.12 (100)	214268.7 (100)	206940.42 (100)	204399 (100)	178259.69 (100)	1516088.64
TOTAL ASSETS	78812.19	100125.71	106435.88	128120.63	153936.62	195671.25	227859.1	225229.37	221672.35	219203.31	1657066.41
% OF CURRENT ASSET TO TOTAL ASSETS	90.70%	91.82%	93.02%	93.46%	94.02%	94.69%	94.03%	91.87%	92.20%	81.32%	

Source: Annual Reports of the Company Figures in horizontal () are Growth percentage
 vertical () are componential percentage

Table 3.1 shows that the growth in components of working capital during the study period. Inventory started with 5.43 percent in 2003-04, sharply declined to -38.16 percent in 2004-05. It increased to 15.99 percent in 2005-06 again then after decreased to -10.75 percent in 2006-07, 0.41 percent in 2007-08, sharply increased to 84.20 per cent in 2008-09, declined to 53.52 percent in 2009-10, fell sharply by -19.55percent in 2010-11, and stood at 26.68 per cent in 2011-12. This indicates that there are serious fluctuations with increase & decrease in production. The componential percentage of inventory was highest in the 2003-04 to the extent of 11.65 per cent and lowest of 3.72 per cent in the year 2007-08. The average investment in inventory stood at Rs.116563.94 over the study period.

Sundry debtors has shown a mixed trend, which registered at 37.01 percent in 2003-04, and declined sharply to -14.37 percent in 2004-05 and interestingly increased to a high of 116.09 percent in 2005-06, then after, again fell to 24.41 percent in 2006-07, 28.45 percent in 2007-08, 13.06 percent in 2008-09, and fell very sharply to -1.29 percent in

2009-10 and finally increased to 1.51 percent in 2010-11 and stood negatively at -44.26 per cent in 2011-12. The componental percentage of sundry debtors was highest in the year 2010-11 i.e 70.40 per cent and lowest in year 2004-05 to the extent of 37.14 percent respectively. The average for the study period stood at 44.99 percent over the study period. This indicates that the debtor's turnover of the company got higher day by day and it is presently at a higher rate.

As far as Cash & Bank balance is concerned, it is clear from the table that the cash & bank balance has also reported a degree of volatility in its growth during the study period. The average balance of cash & bank balance stands at Rs.249985.759 lakhs which amounts to 17.34 percent. This is an indication of increase in liquidity and improvement in profitability. Cash balance which was -7.17 per cent in 2003-04, then after increased to 6.08 percent in 2004-05, declined sharply to -16.08 percent in 2005-06, then, increased considerably to 29.36 percent in 2006-07, and decreased to 9.35 percent in 2007-08, again declined to -12.97 percent in 2008-09, immediately increased to 33.57 percent in 2009-10 & later decreased to -10.74 percent in 2010-11 and stood at 11.18 per cent in the year 2011-12. The componental percentage of cash and bank balance was highest in the year 2003-04 to the tune of 23.04 per cent and lowest of 10.89 per cent in year 2008-09.

From the table it can also be depicted that the decreasing trend of advances continued over the period of study except in 2002-03 and 2005-06. The growth was 138.63 and 93.31 per cent respectively in the year 2003-04 and 2004-05. It fell to -58.67 per cent in 2005-06 and increased by 6.22 per cent in 2006-07. It increased considerably by 69.69 per cent in 2007-08. Then after decreased to 40.83 per cent in 2008-09 and fell significantly to -57.68 per cent in 2009-10. Finally, It stood at 15.46 per cent in the year 2010-11 and was 4.86 per cent in the year 2011-12. The average change of Cash & Bank balance was found over the study period was 9.49 per cent.

Other current assets showed a slight improvement over the study period. It was Rs.914.71 lacks in 2010-11. The componental percentage was 0.44 in 2010-11 and 17.05 per cent in the year 2011-12. The average figure over the time period was Rs.31312.62 lacks, which amounts to 17.05 per cent.

The table also reveals that the percentage of short-term assets (CA) over total assets during the study period. It shows that almost the trend during the period of study was same. It was 90.70 in the year 2002-03 and increased to 92.27 per cent in 2010-11, and was 81.32 per cent in 2011-12. So, it indicates that the proportionate change in current assets over the total assets is due to increase and decrease in working capital caused by the change in the levels of the production.

3.16 SOURCES OF WORKING CAPITAL

In general, organizations get the working capital from short - term sources but most of the organizations try to procure the fixed capital part of working capital from long-term sources, which we consider as net working capital. ECIL also appropriated the long-term sources for financing its working capital in an effective manner. Data with regard to sources of working capital both short-term and long-term and percentages of the long-term funds utilized for working capital has been analyzed and presented through 3.2 tables.

TABLE 3.2
SOURCES OF WORKING CAPITAL
Rupees in lacks

Particulars	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	AVERAGE
1. Gross working Capital	71487.49 (100)	91935.47 (28.10)	99015.48 (7.70)	119747.56 (20.93)	144735.71 (20.86)	185299.12 (28.02)	214268.7 (15.63)	206940.42 (-3.42)	204399 (-1.22)	178259.69 (-12.78)	1516088.64
2. Sources of working Capital											
(a). Short-term funds (CL)	57933.34 (100)	69561.9 (20.07)	74015.42 (6.40)	91777.89 (23.99)	107528.9 (17.16)	121977.62 (13.43)	145771.18 (19.50)	140899.77 (-3.34)	127020.185 (-9.85)	143936.92 (13.31)	108042.31
(b). Long term funds: debentures + debt loan	13554.15 (100)	22373.57 (65.06)	25000.06 (11.74)	27969.67 (11.87)	37206.81 (33.02)	63321.5 (70.18)	68497.52 (8.17)	66040.65 (-3.58)	77378.15 (17.61)	12059.89 (-84.41)	41340.19
3. Total long term funds. Sources of funds:	20229.26	30600.81	32449.28	36345.74	46407.72	67329.49	77046.22	69300.83	74579.74	219203.31	46897.92
4. % of long term used for working capital financing	67.00	73.11	77.04	76.95	80.17	94.04	88.70	95.29	103.75	5.50	

Source: Annual Reports.

Figures in horizontal () are growth percentage.

It is clear from table 3.2 that the growth in gross working capital and short term funds for financing of working capital. Gross working capital decreased from 28.10 per cent 2003-04 to -12.78 per cent in 2011-12. Hence, from 2002-03 to 2011-12, the total current assets were excessive than current liabilities, hence, net working capital emerged and that part was financed through long-term sources. The percent of long term sources utilized for the purpose of working capital financing started with 67 percent in 2002-03 and ended up with 103.75 percent in 2010-11 respectively and was 5.50 per cent in 2011-12. This indicates that ECIL followed a conservative approach in utilizing its long term finances.

The decreasing trend shows that the company utilizes its long term funds more effectively by investing them in fixed assets, on the other hand increasing trend is an indication of firm's inefficiency in utilizing the short term sources for working capital.

3.17 WORKING CAPITAL AND PROFITABILITY ANALYSIS

The working capital policy of any organization plays an important role in the affairs of the company. An inefficient working capital management can lead to loss and vice versa, hence, the data pertaining to various working capital ratios and net profit ratio has been analyzed in detail. Table 3.3 shows the working capital and profitability ratios.

TABLE 3.3
WORKING CAPITAL AND PROFITABILITY ANALYSIS

YEAR	Current Ratio (CR)	Quick Ratio (LR)	Working Capital Turnover Ratio (WCTR)	Inventory turnover Ratio (ITR)	Capital turnover Ratio (CTR)	Profit before tax Ratio (PBTR)
2002-03	1.23	1.05	6.83	6.09	1.17	21.59
2003-04	1.32	1.16	3.73	6.63	0.83	18.69
2004-05	1.33	1.24	2.65	6.85	0.62	13.36
2005-06	1.30	1.22	2.03	7.80	0.44	28.98
2006-07	1.34	1.28	2.32	9.03	0.56	67.82
2007-08	1.50	1.46	1.27	8.31	0.41	10.69
2008-09	1.46	1.38	1.29	8.56	0.38	0.87
2009-10	1.46	1.33	1.42	5.34	0.41	2.68
2010-11	1.60	8.5	1.43	5.96	0.50	0.78
2011-12	1.23	1.10	4.29	1.77	0.65	1.34
AVERAGE RATIO	1.37	1.97	2.72	6.63	0.59	16.68

Source: Annual Reports

It is clear from table 3.3 that the current Ratio (CR) of ECIL, Hyderabad, has gone up from 1.23:1 in the year 2002-03, and then slowly increased to 1.32, 1.33 in the years 2003-04, 2004-05, then slowly decreased to 1.30 in 2005-06. The current ratio increased to 1.50 in 2007-08 and declined to 1.46 in 2008-09 and 2009-10 respectively. It gradually increased to 1.60 in 2010-11 and then declined to 1.23 in 2011-12. It is clear from the table that the liquidity of ECIL, Hyderabad as measured by current ratio is relatively low as the average ratio over the study period is 1.37 against the standard ratio, i.e., 2: 1.

Quick Ratio measures the liquidity of the firm. In the year 2002-03 to 2009-10 the quick ratio fluctuated from 1.05 to 1.33. In the year 2010-11 it has been significantly

increased to 8.5 per cent, it indicates that the firm is able to meet its current obligations as the liquidity position of the company is healthy. But, in the year 2011-12, it declined to 1.10 against the current liabilities, hence, the average ratio stands at 1.97 over the study period against the rule of Thumb, 1:1.

The working capital turnover explains the relationship between net sales and working capital. The Working Capital Turnover Ratio (WCTR) was highest in the in the year 2002-03 and stood at 6.83 times, there from it stimulated to 3.73 times, 2.65 times, 2.03 times and 2.32 times respectively, in the year 2003-04, 2004-05 and 2005-06. It was 2.32 times in the year 2006-07 but declined to 1.27 times in the year 2007-08, then marginally increased to 1.29 times, 1.42 times and 1.43 times respectively in the year 2008-09, 2009-10 and 2010-11, finally it increased to 4.29 times in 2011-12. It States that a high working capital turnover ratio (WCTR) is a symptom of trading which may put the organization in to financial crisis. The average of WCTR over the study period was 2.72, which is quite considerable. The inventory turnover ratio was 6.09 times in 2002-03, 6.63 times, 6.85 times respectively in the years 2003-04, 2004-05. A high ratio indicates quick sales and less or no unnecessary blockage of funds in inventory, it was 7.80 times, 7.3 times, 8.31 times, 8.56 times from the years 2005-06 to 2008-09. Later, in the years 2009-10 and 2010-11 it declined to 1.77 times. This states that a low inventory turnover ratio erodes profitability due to over investment in inventory. The average of inventory turnover ratio was found at 6.63 times.

Capital turnover ratio is the relationship between sales and the capital employed. This ratio is calculated with which a firm utilizes its resources. This ratio is a good indicator of overall profitability of a concern. The capital turnover ratio was 1.17 times in the year 2002-03, afterwards, from 2003-04 till the end of the study period i.e., 2011-12, it hovered around 0.83 times to 0.38 times. Hence, the average capital turnover ratio was 0.59. A high capital turnover ratio indicates the possibility of greater profits and a low capital turnover ratio is a sign of insufficient sales and possibility of lower profits.

The Profit Before Tax Ratio (PBTR) measures overall profitability of a business. The PBTR was 21.59, 28.98, and 67.82 respectively in the years 2002-03, 2005-06 and 2006-07. In the rest of the years, 2003-04, 2004-05, 2007-08 and 2011-12 it registered

18.69, 13.36, 10.69 and 1.34 respectively, In 2008-09 and 2010-11 it was 0.87 and 0.78 per cent respectively. The average PBT ratio stood at 16.68 for the study period.

It can be asserted from the analysis that the organization's liquidity decision from the perspective of profitability, which was not at trade – off. As a result, there was a need to re-look into the issue for the betterment of ECIL from the perspective of effective management of components of working capital. As ECIL, followed strategy of higher liquidity, lots of investments were made on current assets at the cost of prospective profits.

3.18 ESTIMATION OF WORKING CAPITAL

The prime objective of the study is to find out the discrepancy in working capital of the organization. In this regard, the researcher has compared the actual working capital with estimated one through simple regression analysis. Hence, through the table 3.4 the data pertaining to actual working capital, estimated working capital, excess of working capital and shortage of working capital is shown in detail.

TABLE.3.4
Estimation of working capital requirements
Rs. in lakhs

Year	Actual working capital	Estimated working capital	Excess of working capital	Shortage of working capital
2002-03	92595.19	24098.89	68496.30	—
2003-04	83673.79	21779.33	61894.47	—
2004-05	66325.40	17268.74	49056.66	—
2005-06	56875.41	14811.75	42063.66	—
2006-07	86341.88	22473.03	63868.85	—
2007-08	80557.65	20969.13	59588.52	—
2008-09	88788.71	23109.20	65679.51	—
2009-10	94305.25	24543.51	69761.74	—
2010-11	1,10,858.49	28847.35	82011.14	—
2011-12	1,41,701.43	36866.51	104834.92	—

Source: Annual Reports

Table 3.4 describes the estimation of working capital requirements of ECIL. In the year 2002-03 the actual working capital was Rs.92595.19 lakhs while estimated working capital was Rs.24098.89 lakhs which led to excess of working capital to the extent of Rs.68496.30 lakhs. In the year 2003-04 the actual working capital was Rs.83673.79 lakhs and the estimated working capital was Rs.21779.33 lakhs, and the excess of working capital was Rs.61894.47 lakhs. In the year 2004-05 the actual working capital was Rs.66325.40 lakhs, where as the estimated working capital was Rs.17268.74 lakhs which resulted in excess of working capital to the extent of Rs.49056.66 lakhs. In the year 2005-06 the actual working capital was Rs.56875.41 lakhs while the estimated working capital was Rs.14811.75 lakhs, which resulted in excess of Rs.42063.66 lakhs. In the year 2006-07 the actual working capital was Rs.86341.88 lakhs and estimated working capital was Rs.22473.03 lakhs and the excess of working capital was Rs.63868.85 lakhs. Similarly, in the year 2007-08 the actual working capital was Rs.80557.65 lakhs while estimated working capital was Rs.20969.13 lakhs, where as the excess was Rs.59588.52 lakhs. In the year 2008-09 the actual working capital was Rs.88788.71 lakhs, while estimated working capital was Rs.23109.20 lakhs and the excess of working capital stood at Rs.65679.51 lakhs. Similarly, in the year 2009-10 the actual working capital of ECIL was Rs.94305.75 lakhs and estimated working capital was Rs.24543.51 lakhs and excess was Rs.69761.74 lakhs. In the year 2010-11 the actual working capital was Rs.110858.49 lakhs while estimated working capital was Rs.28847.35 lakhs and the excess was Rs.82011.14 lakhs. Lastly in 2011-12 the actual working capital was Rs.141701.43 lakhs while estimated working capital was Rs.36866.51 lakhs and the excess of working capital was Rs.104834.92 lakhs. During the study period there was no shortage of working capital. It is very clear from the analysis that the ECIL followed a conservative working capital policy, which made the organization to run for high liquidity at the cost of profitability by high investments in current assets. Hence, the working capital was excessive for all years as the actual working capital was larger than the estimated working capital.

3.19 NET WORKING CAPITAL

Through table 3.5 a modest attempt has been made to discuss on the nature and trends of net working capital of ECIL. Net working capital is the real strength of any

organization. In fact it is known as the difference between the current assets and the current liabilities. On the other hand, it is also known that the networking capital is all about the fixed part or working capital that would be financed by the long term sources by an organization.

TABLE 3.5
NET WORKING CAPITAL
Rupees in lakhs

PARTICULARS	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	AVERAGE
Current Assets (CA)	71487.49	91935.47 (28.60)	99015.48 (7.70)	119747.56 (20.93)	144735.71 (20.86)	185299.12 (28.02)	214268.70 (15.63)	206940.42 (-3.42)	204399.00 (-1.22)	178259.69 (-12.78)	151608.86
Current Liabilities (CL)	57933.31	69561.90 (20.07)	74015.42 (6.40)	91777.89 (23.99)	107528.90 (17.16)	121977.62 (13.43)	145771.18 (19.50)	140899.77 (-3.34)	127020.85 (-9.85)	143936.92 (13.31)	108042.37
Net Working Capital NWC(CA-CL)	13554.18	22373.57 (65.06)	25000.06 (11.73)	27969.67 (11.87)	37206.81 (33.02)	63321.5 (70.18)	68497.52 (8.17)	66040.65 (-3.58)	77378.15 (17.16)	34322.77 (-55.64)	43566.48
Net Assets (Net Block + NWC)	20118.82	29785.45 (48.04)	32208.02 (8.13)	34912.39 (8.39)	44688.56 (28.00)	70553.44 (57.87)	77590.95 (9.97)	75493.26 (-2.70)	87237.08 (15.55)	45168.45 (-48.22)	51775.63
% of NWC over Net Assets	67.37%	75.11%	77.62%	80.11%	83.25%	89.74%	88.28%	87.47%	88.69%	75.98%	

Source: Annual reports of the company

Figures in horizontal () are growth percentage

According to table 3.5, it is clear that the Net working capital has increased growth during the study period except in 2009-10. It indicates that the portion of fixed working capital increased year by year due to reduction in level of operation. The ratio stimulated from 62.62 per cent to 88.69 per cent during the study period.

The current assets started off with a growth of 28.60 percent 2003-04, fell sharply to 7.70 per cent in 2004-05, increased to 20.93, 20.86, 28.02 and 15.53 per cent respectively in the years 2005-06, 2006-07, 2007-08 and 2008-09. In the year 2009-10 it declined to -3.42 per cent and in 2010-11 it was -1.22 per cent and finally -12.78 in the year 2011-12. The average was Rs. 151608.86 lakhs.

The current liabilities showed an increasing and decreasing trend starting with 20 per cent in 2003-04, 6.40 percent in 2004-05 and sharply increased to 23.99 per cent in 2005-06, came down to 17.16 per cent, 13.43 per cent and 19.50 per cent in 2006-07, 2007-08 and 2008-09 respectively. In the consecutive years of 2009-10, 2010-11 it was

-3.34 per cent and - 9.85 per cent respectively and later climbed to 13.31 percent in 2011-12. The average was Rs.108042.37 lakhs.

The net working capital of ECIL started with Rs.13554.18 lakhs in 2002-03, Rs. 22373.57 lakhs in 2003-04 with a steep hike in 2007-08 which was Rs.63321.5 lakhs. It was Rs.25000.06 lakhs in 2004-05, Rs.27969.67 lakhs in 2005-06 and Rs.37206.81 lakhs in 2006-07 and Rs.68497.52 lakhs in 2008-09 and decreased to Rs.66040.65 lakhs in 2009-10 and stood at Rs.77378.15 lakhs in 2010-11 and was 34322.77lakhs in 2011-12 the growth was 52.39 per cent in 2002-03 and -55.64 per cent in 2011-12 respectively. The average was Rs. 43566.48 lakhs.

As it is evident from the table 3.5, the net assets showed an increasing trend over the study period except in 2009-10. It began with Rs.20118.82 lakhs in 2002-03, increased to Rs.29785.45 lakhs in 2003-04 and increased to Rs.32208.02 lakhs in 2004-05, Rs.34912.39 lakhs in 2005-06, Rs.44688.56 lakhs in 2006-07 and ultimately rose to Rs.70553.44 lakhs in 2007-08, Rs.77590.95 lakhs in 2008-09 and Rs.87237.08 lakhs in 2010-11 and Rs. 45168.45 lakhs in 2011-12 respectively. Only in 2009-10 it declined to -2.70 per cent with the net assets at Rs.75493.26 lakhs. The percentage of net working capital over net assets was 67.37 per cent in 2002-03 and stood at 75.98 per cent in the year 2011-12.

CONCLUSION

This chapter discussed the different concepts of working capital, source and components of working capital and also its management in a theoretical way. It also presented the different financing mix required for efficient management of working capital. The chapter analysed the working capital of ECIL in terms of components of working capital, sources of working capital, working capital and profitability analysis, the estimation of working capital requirements has been done through simple linear regression. Besides, the net working capital analysis has also been covered in this chapter as the net working capital is the real strength of the organization. The chapter concludes that liquidity of the organization is very considerable as it followed the conservative policy of working capital and it is due to such policy the working capital was a surplus one over the study period when compared to the estimated one and its impact was high on the profitability of the organization.

CHAPTER IV

**MANAGEMENT OF CASH
AND RECEIVABLES**

*This chapter deals with the management of cash and receivables
in a detailed manner with the help of select statistical tools*

4.1. CASH MANAGEMENT

Cash management is concerned with minimizing unproductive cash balances, investing temporarily excess cash advantageously, and to making the best possible arrangements for meeting planned and unexpected demands on the firm's cash. It involves managing of cash flows in-and-out of the firm, cash flows within the firm, and cash balances held by the firm at a point of time. Cash management must be thought of in terms of the overall 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 given period in future, such as 5 years.
3. Assessment of the probabilities that developments creating cash drains will occur at the same time.
4. Assessment of the likely amount of cash drain that will result in each of the contingencies develops.

An important policy decision 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 investment.
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 an emergency.
7. Efficient planning and control of cash.
8. The status of the firm's receivables and inventory.
9. The credit position of the firm.

10. The nature of business.

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

Another major cash decision is what exact mix of cash and marketable securities should be maintained? Marketable securities are the means through which cash balances are replenished in the process of their optimization and held to augment the cash balance or to mop up temporary surplus cash. The level of marketable securities is determined by the level of cash, which in turn is constrained by the compensating balance requirements of banks, the need for cash and its predictability, the interest rate on marketable securities, and the transactions and inconvenience costs associated with affecting a transfer between marketable securities and cash. The firm need not hold cash if the transaction and inconvenience costs are zero and the conversion of marketable securities into cash and cash into marketable securities is instantaneous. Since this is not practically possible, excess cash above some minimum level should, as a general rule, be invested in marketable securities. The rule is subject to the qualification that the interest earned over the expected holding period must more than compensate for transactions and inconvenience costs. Under conditions of uncertainty, when the demand for cash is not known in advance, upper and lower limits for cash are set. When cash reaches an upper limit it is invested in securities and when cash reaches a lower limit, marketable securities are converted into cash. The level of marketable securities should also include resources which are saved to meet large expenses. Another consideration that affects the level of marketable securities is the firm's banking relationships, if these are good, it means that the securities balance can be reduced.

There are various collection and disbursement methods which exercise a joint impact on the overall efficiency of cash management. These methods speed up the mailing time of payments from customers to the firm, reduce the time during which payments received by the firm remain uncollected funds, and speed up the movement of funds to disbursement banks.

The methods which accelerate the collection process are concentration banking, lock-box system, special handling of remittances which involve personal picking up of these cheques or the use of air-mail or special delivery, initiating controls to accelerate the deposit and collection of those small cheques which account for a large proportion of total deposits, speeding up inter-bank transfers of cash and transfers between various divisions of the company, closing of unnecessary bank accounts which create unnecessary pockets of idle funds.

The objective of control of disbursements is to slow them down and yet ensure that they are made in time. In exercising such control the firm should given consideration to such aspects as quick shifting of funds to the disbursing bank accounts, preventing excessive balances being built up in a particular bank, establishing well defined operating procedures for disbursement, eliminating or minimizing the loss of cash discounts on accounts payable due to clerical inefficiencies and the timing of payment. Some of the methods of delaying disbursements are: the use of drafts instead of cheques, playing the float, maintaining a separate account for pay roll disbursements in order to minimize cash balance in that account by predicting when the pay cheques are likely to be presented for collection. Establishing a minimum level of cash balances depends in part upon the compensating balance requirements of banks.

One of the main methods of planning and controlling investment in cash is to prepare detailed cash budgets. Cash budgets are the period-by-period forecasts of future cash flows of the business. They are the estimates of when additional finance will be required and when surplus funds are likely to arise. This gives notice to the management about the need for arranging short-term financing in the case of cash shortages and investigate short-term investment opportunities in the case of surplus cash. Cash budgets can be prepared over various time horizons. For purposes of working capital management, it is the short-term horizons, say one year, which is important, although regard should still

be had for longer term cash flow statements. The period for which cash flows are computed depends upon the nature of the business. But generally, they should be at least monthly. If the cash inflows and outflows fluctuate greatly, a weekly forecasting will be required. The usefulness of a cash budget is dependent on the accuracy of the forecasts on which it rests. Two methods can contribute to the improvement of cash budgeting. The first is to analyze the deviations that occur; and the second is to apply risk analysis to the cash budgets.

4.1(a). Control and Review

There are five major approaches for effective control of cash:

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

Some of the important techniques of controlling cash are cash budgeting, ratio analysis, linear programming, goal programming, simulation and portfolio management. Ratio analysis is widely in application, some of the important ratios used as measures of cash control are discussed below:

4.1. (b). Cash Velocity or Cash Turnover (Sales per period/Initial Cash Balance)

The ratio explains the speed with which the cash is turned over. The higher the turnover, the less the cash balance required for any given level of sale, and other things remaining constant, it implies greater efficiency. The ratio can also be used to establish the cash balances to be held, once the sales forecasts for various periods have been made, the required cash balance may be calculated, using historical cash turnover figures. However, the ratio shows only what is happening to the cash balance without indicating the imperfections and irregularities, caused by the cash flows by the income through sales, which may be partly responsible for decline in liquidity.

4.1 (c). Cash as Percentage of Current Assets:

The ratio of cash in current assets provides an index of current operations and, used correctly, helps determine the minimum level of cash. Monthly control of cash and historical records give some indication of trends. An increasing level of cash in current assets could be caused by a reduction in the credit given by the company's suppliers or by too high a cash balance. The first may be unavoidable, the second is not. The ratio can only give an indication of a potential problem, further analysis is required to determine the cause.

4.2 ANALYSIS AND DISCUSSION

CASH FLOW STATEMENT

In the present chapter a modest attempt has been made to analyze the cash turnover and cash inflows and out flows of ECIL in an analytical way. Cash from operations (Net profit after non-cash expenses and non-operating incomes is known as cash from operations). The main objective is to help the management in judging how much cash has been generated and how cash is used for the important activities viz; operational, investing and financing activities. Cash receipts from operating revenues are compared with the cash payments for operating expenses. If receipts are more than payments, then it means cash is generated from operating activities. On the other hand if cash payments are more than receipts, it means additional cash is made available to operating activities. The data pertaining to same is analyzed and shown through table 4.1

TABLE 4.1
Cash flow statement for the years from 2002 - 2012
(Rs. In lakhs)

Particulars	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
I. Cash flow from operating activities	2613.34 (100)	-2121.68 (-81.18)	1599.91 (61.22)	-3846.93 (-147.20)	5482.79 (209.80)	-10425.41 (-398.93)	-3856.19 (-147.55)	14353.84 (549.25)	-9073.95 (-347.21)	13400.85 (512.78)
II. Cash flow from investing activities	-2421.38 (100)	-639.56 (-27.00)	435.99 (18.00)	164.28 (6.79)	193.43 (8.00)	-82.30 (4.00)	-1321.09 (55)	-3698.14 (152.73)	1320.95 (-54.55)	1517.98 (-63)
III. Cash flow from financing activities	1045.64 (100)	1122.89 (107.38)	-647.70 (61.94)	53.30 (5.09)	-114.89 (-10.98)	12790.80 (1223.25)	1701.50 (162.72)	-2826.69 (-2073.5)	4405.22 (1129.3)	118.8.61 (421.29)
IV. Net increase (decrease) in cash equivalents(opening balance)	21582.82 (100)	22820.44 (105.73)	21182.09 (98.14)	22570.29 (104.57)	18940.94 (87.75)	24511.14 (113.56)	26794.23 (124.14)	23318.45 (108.04)	31147.46 (144.31)	27799.68 (128.80)
V. Cash and Cash equivalents(closing balance)	22820.44 (100)	21182.09 (92.82)	22570.29 (98.90)	18940.94 (82.99)	24502.27 (107.36)	26794.23 (117.41)	23318.45 (102.18)	31147.45 (136.48)	27799.68 (121.81)	30909.90 (135.44)
TOTAL:	48062.24	42364.18	45140.58	37881.88	49004.54	53588.46	46636.9	36852.6	55599.36	85437.02

Source: Annual reports

Figures in () are Trend Percentage

It is evident from the table 4.1 that the amount of cash generated by operating activities is the key indicator to know to what extent the operating activities are financed by its own operations. If sufficient surplus is there it can replace loans, pay dividends to share holders and can purchase or invest more in fixed assets and other types of investments. The cash flow from operating activities show a negative trend as it was -81.18 per cent in 2003-04, -147.20 per cent in 2005-06, -398.93 per cent in 2007-08 and -347.21 per cent in the year 2010-11. Coming to 2004-05, 2006-07, 2009-10 and 2011-12 the trend percentage was positive as it was 61.22, 209.80, 549.25 and 512.78 respectively, which shows that due to good cash inflows the organization could happily bear the burden of meeting the operating expenses.

The cash flow from investing activities will help to estimate future incomes and cash inflows. From the table, it is clear that cash flow from investing activities has shown momentous fluctuations. It was 27 per cent, 18 per cent, 6.79 per cent, 8.00 per cent, 4.00 per cent, 55 per cent, 152.73 per cent, 54.55 per cent and 63 per cent over the study period of the range from 2002-03 to 2011-12.

The cash flow from financing activities helps to know the claims of future cash flows. The trend percentage was 107.38 in 2003-04, -61.94 per cent, 5.09 per cent in 2005-06, -10.98 per cent in 2006-07, 1223.25 per cent in the year 2007-08, 162.72 per cent in 2008-09, -2703.5 per cent in 2009-10, 1129.3 per cent in 2010-11 and lastly 421.29 per cent in 2011-12 respectively. The investments which are readily convertible into cash without any loss of invested amount and having readily marketable (means quickly can be converted into cash) are known as cash equivalents. It has shown a rise from 105.73 per cent in 2003-04 to 144.3 per cent in 2010-11 and 128.80 per cent in 2011-12. Lastly, the cash or cash equivalents have also grown over the study period as it was 92.82 per cent in 2002-03 and increased to 136.48, 121.81 and 135.44 per cent in 2009-10, 2010-11 and 2011-12 respectively. It can be asserted from the analysis that the cash position of the organization is comfortable on the whole, when the inflows and outflows of cash through operating, investment and financing activities are taken together.

CASH RATIOS

Although receivables, debtors and bills receivable are generally more liquid than inventories, there may be doubts regarding their realization into cash immediately or in time. Cash is regarded as the most liquid asset. Absolute liquid ratio or cash ratio mean the same. Cash velocity ratio is calculated as follows.

$$\text{Cash Velocity Ratio} = \frac{\text{Sales for the period}}{\text{Opening cash balance}}$$

Therefore, higher the ratio more is the efficiency of the firm in utilizing its cash resources as it enables the accomplishment of greater volume of sales with relatively lesser cash resources. This cash velocity ratio proves that, higher the ratio, greater is the degree of liquidity and solvency of a firm and vice versa.

TABLE 4.2
CASH RATIOS

Year	Cash to Current Assets	Cash to Current Liabilities	Cash to sales	Cash Velocity Ratio
2002-03	0.47	0.40	0.23	4.64
2003-04	0.30	0.31	0.23	4.10
2004-05	0.30	0.31	0.30	3.64
2005-06	0.19	0.21	0.27	3.1
2006-07	0.17	0.23	0.25	5.3
2007-08	0.17	0.22	0.27	4.09
2008-09	0.13	0.16	0.22	3.96
2009-10	0.18	0.23	0.27	5.10
2010-11	0.16	0.22	0.21	4.44
2011-12	0.21	0.22	0.21	5.3

Source: Annual Reports

The ratio of cash in current assets provides an index of current operations and, when used correctly, helps determine the minimum level of cash. An increasing level of cash in current assets could be caused by a reduction in the credit given by the company's suppliers or by too high a cash balance. The first may be unavoidable, the second is not. The ratio can only give an indication of a potential problem, further analysis is required to determine the cause. The percentage of cash in current assets is 0.47 in 2002-03 whereas in the year 2011-12 it came down to 0.21. Some other important ratios that are used as measures of controlling cash balances are cash to current liabilities, cash to sales and cash velocity or cash turnover. The ratios thus computed are compared with the averages of the ratios achieved in the past by the organization or industry ratios in the process of exercising control.

The quick ratio or liquidity ratio or acid test ratio is a more refined measure of the firm's liquidity. The ratio establishes the relationship between quick or liquid assets and current liabilities. An asset is said to be liquid if it can be converted into cash immediately or reasonably soon without the loss of value. Cash is the most liquid asset.

The other assets which are considered to be relatively liquid and included in the quick assets are book debts (debtors and bills receivables) and marketable securities (temporary investments). Generally, Absolute liquid ratio or cash ratio of 0.5:1 is considered to represent a satisfactory current financial condition. From the table, it is clear that the absolute liquid assets were 0.40 times in the year 2002-03 which is slightly low than the accepted rule of thumb 0.5. It means that the company needs to improve the short term financial position. It was 0.31 times in 2003-04 and came down to 0.22 times in the year 2011-12. The cash velocity ratio explains the speed with which the cash is turned out in the operation cycle. Higher the turnover, the less cash is required for any given level of sales. It is clear from the table that this ratio is the highest in the years 2006-07, 2009-10 and 2011-12 which stood at 5.3, 5.10 and 5.3 respectively. In 2005-06, it was only 3.1 and in 2004-05 it was 3.64 which indicate that more cash is required to be pumped in the organization for a given number of sales.

4.3 RECEIVABLES MANAGEMENT

Receivables management, also termed credit management, deals with the formulation of credit policy, in terms of liberal or restrictive, concerning credit standard and credit period, the discount offered for early payment and the collection policy and procedures undertaken. It does so, in such a way that, the policy variables, determine an optimal level of investment in receivables, where the return on that investment is maximum to the firm. Frequent examples of poor management of accounts receivable¹ are: neglect of various overdue accounts, sharp rise in the bad debt expense, and the collection of debts expense and taking the discount by customers even though they pay after the discount date and even after the net date. Since accounts receivable represent a sizable investment on the part of most firms-in the case of public enterprises in India it forms 16 to 20 per cent of current assets-efficient management of these accounts can provide considerable savings to the firm. The following factors are of particular importance in shaping the size of the firm's investment in receivables:

1. *Accounts receivable represent the amount due from customers (book debts) as a result of selling goods on credit. The three characteristics of receivables-the 'element of risk', 'economic value' and 'futuraity'-explain the basis and the need for efficient management of receivables.*

- (1) The terms of credit granted to customers deemed creditworthy.
- (2) The policies and practices of the firm in determining which customers are to be granted credit.
- (3) The paying practices of credit customers.
- (4) The vigor of the seller's collection policies and practice.

In order to optimize investment in receivables, effective credit granting and collection policies have to be formulated. A number of other factors which are considered in formulating a credit policy are:

1. The need to create demand for inventory that may otherwise become obsolete, e.g., fashion goods.
2. Provision for extended credit periods to help out valuable customers over short-term liquidity crises.
3. General credit terms may be given as part of a promotional campaign relating to new or existing products.
4. More generous credit terms may be given during off season so as to generate more consistent sales.
5. Competitive pressures may force a firm to revise its policies.
6. By offering price cut in the form of a discount may reduce competitor's reactions due to their not recognizing or not recognizing straightaway what has happened.

Credit Granting Policy

The decision involved in credit granting is to determine whether to extend credit to a customer and how much credit to extend. The firm must concern itself not only with the establishment of credit standards but also with the correct use of these standards in making credit decision. Appropriate sources of credit information and methods of credit analysis must be developed. Credit standards, which define the minimum criteria for the extension of credit to a customer, have to be established and enforced. These must be based on such elements as credit ratings, credit references, average payment periods, and certain financial ratios. The policy decision to grant credit to a customer is based on either a liberal application or restricted application of the firm's overall credit standards.

The key variables in deciding to follow liberal or restrictive credit granting are clerical expenses, size of investment in receivables, bad debt expenses, and sales volume, a liberal credit granting policy increases the sales volume and also clerical costs, bad debt expenses, collection expenses and carrying costs for accounts receivable. A restrictive credit policy reduces them. An approach suggested by Oilman is that marginal profits on sales must be compared with the cost of marginal investment in accounts receivable. Credit should be relaxed if marginal profits are greater than marginal costs otherwise not.

A better approach, suggested by Johnson, is to first determine what grade of risk is to be accepted. As credit is extended to customers from one grade of risk to another, there is an added income through added sales and added expenditure. In considering whether to sell a group of customers with a certain per cent risk of non-payment, the decision depends upon how much investment is tied up in these accounts and the expected return on that investment. The amount of investment tied up in these accounts is determined with reference to the turnover of receivables. The actual return from the selected risk category customers on the added investment in receivables due to increased sales is compared with the expected rate of return on the firm's investments in general. If the actual rate of return is higher, the firm can push on into even poorer grade risks until the point where the rate of return on the added direct investment in receivables is equal to the expected rate of return on the firm's investment. In finally deciding the acceptable risk category of customers, the firm has to consider the general economic condition during which such credit is to be offered.

It is important to recognize the functional space relationships between credit standards, the credit period, the discount given, special terms offered and the level of collection expenditures, and their joint influence on profits. By means of sensitivity analysis, the impact of the assumed functional relationships between such policy variables can be experimented with different credit and collection policies in order to determine the optimal set of policies.

Credit Analysis

After deciding upon the degree of acceptable risk by determining credit standards, the credit analysis of the customer desiring credit is made to find out whether the customer

falls above or below the acceptable limit in terms of his creditworthiness. The quality of customer chosen depends upon the depth of the analysis. First, the customer's willingness to pay the debts on time is tested with the help of his record of payments to other suppliers. Second, his ability to pay is ascertained as reflected in his financial statements. Here the primary reliance is upon an analysis of short-term position: current ratio, acid test ratio, turnover of receivables and inventory turnover. Sometimes the average age of a credit applicant's outstanding accounts payable is estimated. The longer the period for which purchases remain unpaid, as compared to the customary practice in the industry, the deeper will be the suspicion about the prospective customer's ability to pay the debt, other factors bearing on the customer's ability to pay are his business experience, the intensity of competition and general economic condition. Companies with broad experience in consumer credit have developed more precise measurements of risk. One such is the point system, whereby the customer is given so many points for the number of years the applicant has worked for the same company, the number of years at the same address and so on. If the customer garners a sufficient number of points he is granted credit. Whatever the method of analysis, one of the key inputs to the final credit decision is the financial analyst's subjective judgment of a firm's creditworthiness.

Credit Terms

The second basic aspect of receivables management is to determine the credit terms, which cover three things: 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.

When a firm initiates or increases a cash discount the sales volume will increase, the average collection period, the cost of carrying accounts receivable and bad debt expenses will decrease. The decrease in average collection period and in bad debt expenses results in increased profits. The negative aspect of an increased cash discount is a decreased profit margin per unit. Decreasing or eliminating a cash discount would have opposite effects.

When the cash discount period is increased, there is a positive effect on profits. Many people who did not take the cash discount 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 the cash discount will be able to still take it and pay later. If the discount period is shortened the effects would be the opposite.

Changes in credit period also affect the firm's profitability. Increasing the credit period should increase in sales. But both average collection period and the bad debt expenses are likely to increase as well. Thus the net effect on profits may be negative. A decrease in the credit period is likely to have the opposite effects 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 costs and marginal gains from a decision are equal.

Collection Policy

The firm's collection policies are the procedures followed to collect accounts receivable when they are due. The effectiveness of the firm's collection policies can be partially evaluated by looking at the bad debt expenses. This level depends not only on the collection policies but also on the credit policies on which the extension of credit was based. Increased collection expenditures should reduce the bad debt expenses and the average collection period, thereby increasing profits. The costs of this strategy may include lost sales in addition to increased collection expenditures if the level of collection effort is too intense. By calculating the marginal cost of increased collection efforts and the decrease in sales (if any), and comparing this with the savings from reduced bad debt expenses and decreased investment in accounts receivable, various strategies for increasing the level of collection effort can be assessed. Proposed reduction in the level of collection effort (expenditure) can be evaluated in a similar manner.

The first step in the efficient management of receivables is to define its objectives. The more important of these objectives are:

- (1) To achieve growth in sales.
- (2) Meeting competitors.
- (3) Increase profits.

(4) Finance the customer.

The firm's overall objective with respect to the management of accounts receivable should not merely be to collect receivables quickly. Attention should also be given to the benefit cost trade off involved in the various areas of accounts receivables management, viz., credit policies, credit terms and collection policies.

The two basic liquidity goals in receivables management are to concentrate on (a) the prospect of collecting the receivables when they become due, and (b) the prospect of shortening future receivable maturities.

Effective policies as regards credit granting and collection have to be evolved keeping in view the set objectives. Some of the possible credit policies are: (i) open (liberal) credit-without approval of appropriate authority up to a certain limit or with approval if the credit exceeds that limit, (ii) limited credit, (iii) restrictive credit, and (iv) no credit. An effective collection policy has to be developed defining clearly the procedure for (i) determining delinquent accounts, (ii) developing collection correspondence, (iii) dealing with discount chiselers, (iv) legal action for collection, (v) adjustment proceedings, and (vi) liquidation proceedings.

Management of credit, too, should have a separate organizational set-up. While credit manager is responsible for the day-to-day administration of credit and collection policies of the firm, the Financial Executive should be responsible for credit planning and formulation of credit policies.

Control of Accounts Receivable

Some of the important techniques for controlling accounts receivable are ratio analysis, discriminate analysis, decision tree approach, and electronic data processing. Information system with regard to receivables turnover, age of each account, progress of collections, size of bad debt losses, and number of delinquent accounts is also used as one of the control measures.

Ratio analysis is widely used in the control of accounts receivable. Some of the important ratios used for this purpose are discussed below:

(i). Average Collection Period (Receivables x 365/Annual Credit Sales)

The average collection period indicates the average time it takes to convert receivables into cash. Too low an average collection period may reflect an excessively restrictive credit policy and suggest the need for relaxing credit standards for an acceptable account. On the other hand, too high an average collection period may indicate an excessively liberal credit policy leading to a large number of receivables being past due and some being uncollectable.

(ii). Receivables Turnover (Annual Credit Sales/Receivables)

This ratio also indicates the slowness of receivables. Both the average collection period ratio and receivables ratio must be analyzed in relation to the billing terms given on the sales. If the turnover rates are not satisfactory when compared with prior experience, average industry turnover and turnover ratios of comparable companies in the same industry, an analysis should be made to determine whether there is any laxity in the credit policy or whether the problem rests with collection policy.

(iii). Receivables to Sales (Receivables/Annual Credit Sales X 100)

Receivables can be expected to fluctuate in direct relation to the volume of sales, provided that sales terms and collection practices do not change. The tendency towards more lenient credit extension-as would be suggested by slackening of collections and increase in the number of slow paying accounts-needs to be detected by carefully watching the relationship of receivables to sales.

When credit sales figures for a period are not available, total sales figures may be used. The receivables figures used in the calculation ordinarily represent ear-end receivables. In the case of firms with seasonal sales, year-end receivables figures may be deceptive therefore; an average of the monthly closing balances figures may be more reliable.

(iv). Receivables as Percentage of Current Assets (Receivables/Total Current Asset Investment)

The ratio explains the amount of receivables per rupee of current asset investment and its size in current assets. A comparison of the ratio over a period offers an index of a firm's changing policies with regard to the level of receivables in the working capital.

A more refined control device is the ageing of accounts receivable. However the ageing schedule provides only an indirect means of judging collection experience. A more direct procedure is to calculate the distribution of collections by the age of the account at the time of collection.

An effective control of accounts receivable is possible by evaluating the performance of the credit department. One possible measure of evaluation is the percentage of orders rejected to credit sales. A higher percentage of order rejection may reveal a situation of either too lenient credit terms or too tight credit standards. Used carefully, measures such as percentage of collections to accounts receivable and percentage of bad debts to credit sales are helpful. Possibly more useful is the percentage of monthly collections on past due accounts to the accounts past due at the beginning of each month. Taken together, the various measures may present a picture of undesirable restrictiveness or leniency as always, the problem is to determine on the basis of historical and industry standards, whether or not the relevant percentages and ratios are unusually high or low.

DEBTORS AND CREDITORS VELOCITY

A concern may sell goods on cash as well as on credit is one of the important elements of sales promotion. The volume of sales can be increased by following a liberal credit policy. But the effect of liberal credit policy may result in tying up substantial funds of a firm in form of trade debtors (or receivables i.e., debtors plus bills receivables). Trade debtors are expected to be converted in to cash within a short period and are included in current assets. Hence, the liquidity position of concern to pay its short - term obligations in time depends upon the quality of its trade debtors. Debtors Velocity indicates the number of times the debtors are turned over during a year. The creditor's velocity indicates the velocity with which the creditors are turned over in relation to purchases generally a higher ratio is preferred. The Debtors and Creditors velocity of ECIL has been analyzed through the table 4.3.

TABLE 4.3
DEBTORS AND CREDITORS VELOCITY

Year	Debtors Turnover Ratio (times)	Average Collection Period (days) (ACP)	Creditors Turnover Ratio (times)	Average Payment Period (days) (APP)	Spread of Credit Risk (ACP-APP)
2002-03	3.86	93	2.49	145	- 52
2003-04	2.26	159	1.81	199	- 40
2004-05	1.67	216	2.29	157	59
2005-06	0.83	434	1.53	235	199
2006-07	0.97	371	1.60	225	146
2007-08	0.72	500	1.32	273	227
2008-09	0.66	546	2.47	146	400
2009-10	0.68	530	1.69	213	317
2010-11	0.78	462	1.74	261	201
2011-12	1.84	195	1.74	261	-66

Source: Annual reports

Any organization sells goods on credit and cash basis. When the firm extends credits to its customers, book debts (debtors) are created in the firm's accounts. Debtors are expected to be converted into cash over a short period and therefore are included in current assets. The liquidity position in the firms depends on the quality of debtors to a great extent. To judge this quality two ratios are employed, firstly, Debtors Turnover Ratio and secondly Average Collection Period. The Debtors Turnover Ratio indicates the number of times on an average that debtor's turnover each year. It is clear from the table 4.3 that the DTR was highest with 3.86 times in 2002-03 compared to other years where it has come down to 1.84 times also in 2011-12. This shows that higher the value of debtor's turnover, more efficient is the management of assets.

Secondly, the average collection period brings out the nature of the firm's credit and the policy of the debtors more clearly. It represents the average number of days for which the firm must wait after making a sale, before collecting the cash from the customers.

The shorter the collection period, the better the quality of the debtors as a short collection period implies the prompt payment by the debtors. From the table in the year 2002-03 the average collection period was 93 days whereas it has increased to 195 days in 2011-12. It implies that ECIL had a too liberal and inefficient credit and collection performance. This delays the collection of cash and impairs the firm's debt-paying ability. The chances of bad debt losses are also increased. The creditor's turnover ratio indicates the average time lag in the number of days between the purchases and cash payment to the creditors. In the course of business operations, a firm has to make credit purchases and incur short term liabilities. The supplier goods, i.e. Creditor, are interested in finding out how time the firm is likely to take in repaying the trade creditors. Generally, a high ratio is preferred. ECIL's CTR was 2.49 times in 2002-03, 2.29 times in 2004-05 and 2.47 in 2008-09 respectively. It was lower in other years.

The Average Payment Period Ratio represents the average number of days taken by the firm to pay its creditors. Lower the ratio, the better is the liquidity position of the firm and higher the ratio, less liquid is the position of the firm. Sometimes a higher payment period also implies greater credit period enjoyed by the firm and consequently larger the benefit reaped from the credit suppliers. The APP of ECIL was 145 days, 157 days and 146 days in the years 2002-03, 2004-05 and 2008-09 which shows that the liquidity position of ECIL was good in these years comparatively to the rest of the study period.

The spread of credit risk indicates the difference between Average collection period and Average payment period. The accounting policy of a firm can be found out through the credit risk. A negative spread of credit risk indicates that less time is taken from the creditors to pay their obligations, whereas, a positive spread of credit risk indicates that less time is given to collect cash from debtors. Except the first two years, in the rest of the years over the study period the credit risk of the organization is very high as the number of days given to debtors is higher than the number of days taken from creditors. It led the organization to take more loans or use the internal funds to finance working capital.

AGEING SCHEDULE OF ECIL

It is a statement showing the age wise groups of debtors. It is helpful in identifying slow paying debtors, with which a firm may have to encounter a stringent collection policy.

The actual aging schedule of the firm is compared with industry standard aging schedule or with bench mark aging schedule for deciding whether the debtors are in control or not. In table 4.4 an attempt has been made to analyze the aging schedule of the ECIL.

TABLE 4.4
AGEING SCHEDULE

Year	Outstanding Period Age Group in(days)	Amount of Outstanding Book Debts(Rs.)	Percentage of Total Book Debt
2002-03	More than 180	31344.03	3.30
2003-04	More than 180	42946.87	4.51
2004-05	More than 180	36774.52	3.87
2005-06	More than 180	79468.68	8.35
2006-07	More than 180	98870.90	10.40
2007-08	More than 180	1,27,003.59	13.35
2008-09	More than 180	1,43,600.86	15.10
2009-10	More than 180	1,41,744.87	14.90
2010-11	More than 180	1,46,667.08	15.42
2011-12	More than 180	1,02,786.16	10.82
Total		9,51,207.56	100.00

Source: Annual Reports.

The average collection period measures the quality of debtors in an aggregative way. The ageing schedule breaks down debtors according to the length of time for which they have been outstanding. It also reveals that the accounts of the firm which are problematic in nature. The ageing schedule gives more information than the collection period and clearly spots out the slow- paying debtors.

The ageing schedule of ECIL through table 4.4 clearly shows that, when the collection period is more than 180 days the risky debts ranged between 3.30 per cent and 10.82 per cent.

CONCLUSION

The important components of working capital i.e., cash and receivables have been discussed in detail in this chapter. The importance of cash management, the various collection and disbursement methods which exercise a joint impact on the overall efficiency of cash management and also the effective cash control techniques are discussed. The management of receivables gives an insight in to the factors considered in formulating the credit policy, credit granting policy, credit analysis as also credit terms and collection policy. The chapter analyzed the cash management of ECIL through cash flow statement. It is found that the cash flow from operating, financing and investing activities is satisfactory. Besides, the chapter also made an analysis of the credit risk through ACP, APP, debtors and creditors velocity and cash velocity ratio. It is found that the credit risk of the organization is very high as the credit policy is not properly managed by ECIL over the study period.

CHAPTER - V

INVENTORY MANAGEMENT

This chapter deals with the management of inventory at ECIL. It analyses the turnover/sales trend, stock and raw material consumed, Inventory turnover and day inventory holding, Interval measure, Inventory components, Inventory and production, cost trends and Impact of Inventory on Profitability.

5. INVENTORY MANAGEMENT

Inventories represent a significant portion of assets in the case of most of the manufacturing firms and require substantial investments. Inventory management is concerned with the determination of optimal level of investment for each component of inventory and the efficient use of the components, and the operation of an effective control and review mechanism.

Inventory represents a continuum of possible investments. Its different items carry with them different risks to the firm. Such differential risks have to be analyzed in order to assess their likely impact on investments and costs. The opportunity cost of funds invested in inventory is the link by which the Financial Manager ties inventory management to the overall objective of the firm. From the profitability point of view, the optimal level of average inventory and the optimal order quantity must be kept lower. Other things remaining constant, this is possible when the opportunity cost of funds invested in inventory is higher.

In inventory decisions, management has to take into consideration factors like inventory carrying costs, ordering costs, costs of stock-cuts, the rate of return on the investment, and the cost of capital. In the case of running enterprises, the decision is concerned also with additional investments in order to estimate and compare additional costs and additional returns and the net effect on the maximization of the value of the firm.

While the technique of marginal analysis is found suitable in taking such decisions, the classification of costs into fixed, variable and relevant is considered essential. The decision to invest further in inventory should be based on considerations of trade off between the resulting savings associated with excess investment and the total cost of holding added inventory.

Levels of inventory holding are also influenced by the operational flexibility it offers to the firm. A lower inventory level gives less flexibility while a higher inventory level gives greater flexibility.

In evaluating the levels of inventories, management must therefore balance the benefits of economies of production, purchasing and increased production demand against the cost of carrying the additional inventory. Other things remaining constant, the greater

the efficiency with which the firm manages inventory the lower the required investment and the greater the owners' wealth. An important step in inventory management is the determination of investment in each component of inventory, viz., raw material, work-in-process, finished goods and stores and spares. Some important factors which influence the levels of each component are stated hereunder.

5.1 RAW MATERIAL INVENTORY

- (1) The volume of safety stocks needed to protect against material shortages that interrupt production.
- (2) Considerations of economy in purchase.
- (3) The outlook for future movements in the price of materials.
- (4) Anticipated volume of usage and consumption.
- (5) The efficiency of procurement and inventory control functions.
- (6) The operating costs of carrying the stocks.
- (7) The costs and availability of funds for investment in inventory.
- (8) Storage capacity.
- (9) Recomponent cycle.
- (10) Indigenous or foreign.
- (11) The lead time of supply.
- (12) Formalities for importing.

5.2 WORK-IN-PROCESS INVENTORY

- (1) The length of the complete production process.
- (2) Technological considerations influencing process time.
- (3) Management policies affecting length of process time.
- (4) Length of production in runs.
- (5) Actions that speed up the production process, e.g., adding second or Third production shifts.
- (6) Management's skill in production scheduling and control.
- (7) Volume of production.

- (8) Sales expectations.
- (9) Level of sales and new orders.
- (10) Price levels of raw materials used, wages and other items that enter into production costs and the value added in production.
- (11) Customer requirements.
- (12) Usual period of ageing.

5.3 FINISHED GOODS INVENTORY

- (1) The policy of the management to gear the production to meet the firm orders in hand.
- (2) The policy to produce for anticipated orders and stock-keeping.
- (3) Goods required for the purpose of minimum and safety stocks.
- (4) Sales policies of the firm.
- (5) Need for maintaining stability in production.
- (6) Price fluctuations for the product.
- (7) Durability, spoilage and obsolescence.
- (8) Distribution system.
- (9) Ability to fill orders without delay.
- (10) Availability of raw material on seasonal basis while customers demand spread throughout the year.
- (11) Storage capacity.

5.4 STORES AND SPARES INVENTORY

- (1) Nature of the product to be manufactured and its lead time of manufacture.
- (2) State of technology involved.
- (3) Consumption patterns.
- (4) Lead time of supply.
- (5) Indigenous or foreign.
- (6) Minimum and safety stocks and ordering quantities.

(7) Capacity utilization.

(8) Importing formalities.

Turning to the practical aspects of inventory management, the first step is to define its objectives. Some of these are:

1. To assure continuity of operations in the most efficient manner possible so that the enterprise may reach its overall objective.
2. To achieve a balance between economies of holding large inventories and of holding small inventories.
3. To minimize direct and indirect costs associated with holding inventories.

Some of the important inventory policies relate to:

- (1) Procurement of raw material and spares;
- (2) Size of minimum, optimum and maximum stocks;
- (3) Safety stocks, order quantities, order levels and anticipation stocks;
- (4) Waste, scrap, spoilage and defectives;
- (5) Policies relating to alternative use and
- (6) Policies relating to order filling.

Inventory management having become a separate function by itself, there should be a separate organization for it. The Financial Executive should therefore exercise an overall supervision and control over inventory management.

5.5 INVENTORY CONTROL

The efficiency of inventory control affects the flexibility of the firm. There are several tools of inventory control. Some of these are:

1. The economic order quantity which enables determination of optimal size of order to place on the basis of demand or usage of the inventory.
2. The technique of safety stocks to overcome problems of uncertainty.
3. The order point formula which tells us the optimal point at which to reorder a particular item of inventory.

Together, these tools provide the means for determining an optimal average level of inventory for the firm. Ratio analysis has a wider application as a measure of inventory control among most manufacturing firms. Some of the important ratios are explained below:

5.5 (a) Inventory to Sales (Total Inventory/Sales for the Period)

The ratio explains variations in the level of investment in inventory with volume of sales. An increase in inventory levels, substantially beyond that which might be expected from an increase in sales, may reflect such phenomena as the result of a conscious policy shift to higher stock levels, of unintended accumulation of unsold stocks, and of inventory speculation, or simply stocking in anticipation of an almost certain surge of orders.

5.5(b) Inventory Turnover (Cost of Goods Sold/Average Inventory)

The ratio tells us the rapidity with which the inventory is turned over into receivables through sales. Generally, higher the inventory turnover ratio the greater would be the efficiency of the management of a firm. However, a relatively high inventory turnover ratio may be the result of too low a level of inventory and frequent stock outs. Therefore, the ratio must be judged in relation to the past and expected future ratios of the firm and in relation to ratios of similar firms or the industry average or both.

5.5(c) Sales to Inventory (Annual Net Sales/Inventory at the End of Fiscal Period)

The ratio indicates the volume of sales in relation to the amount of capital invested in inventories. When inventory for a firm is larger in relation to sales (the condition which causes it to have a lower net sales-to-inventory ratio than other firms) the firm's rate of return is less since it has more working capital tied up in inventories than has the firm with a higher ratio.

5.5(d) Inventory to Current Assets (Total Inventory/Total Current Assets)

The ratio indicates the amount of investment in inventory per rupee of current asset investment. Generally, an increasing proportion of inventory is indicative of inefficient inventory management. The ratio may also indicate the state of liquidity position of current assets. The higher the proportion of inventory to current assets the lower the

liquidity as compared to other current assets, viz., receivables, cash and marketable securities.

5.5(e) Inventories Expressed in Terms of Number of Days Sales (Inventory/Sales X 365)

The ratio indicates the size of inventory in terms of number of day's sales. For this purpose first the sales per day are calculated and inventory is divided by the amount of sales per day. The increasing inventory in terms of number of day's sales may indicate either accumulation of inventory or decline in sales. Inventory for this purpose is assumed to include finished goods only. While the former situation signifies poor inventory management, the latter indicates the poor performance of the marketing department.

5.5(f) Sundry Creditors to Inventory (Sundry Creditors/Inventory)

The ratio reveals the extent to which inventories are procured through credit purchases. Inventories for this purpose are assumed to include raw materials and stores and spares only. If the ratio is less than unity, it reveals that the credit available is lower than the total inventory required. It also explains the extent of inventory procured through cash purchases. Indirectly it emphasizes the inventory financing policy of the firm. If the ratio is more than one, it explains that the entire inventory is purchased on credit.

5.5(g) Inventory to Net Working Capital (Inventory/Net Working} Capital):

The ratio explains the amount of inventory per rupee of equity/long-term financed portion of current assets. A higher ratio may mean greater amount of net working capital investment in inventory. In order to control each category of inventory, the following financial ratios are useful:

(a) Raw Material

- (1) Raw material as percentage of total inventory.
- (2) Raw material as percentage of cost of production.

(b) Work-in-Process

- (1) Work-in-process as percentage of total inventory.
- (2) Work-in-process as percentage of cost of production.

(c) Finished Goods

- (1) Finished goods as percentage of total inventory.
- (2) Finished goods as percentage of sales.

(d) Stores and Spares

- (1) Stores and spares as percentage of total inventory.
- (2) Stores and spares as percentage of cost of production.

In this chapter a modest attempt has been made to analyze the inventory management of ECIL through select ratios, namely, Turnover trend, Stock and Raw- material consumed, inventory turnover and day inventory holding, Interval measure, inventory components, inventory and production, Cost trends and working capital turnover as well as cash turnover along with impact of inventory turnover on profitability through 5.1 to 5.8 tables.

5.6 ANALYSIS AND DISCUSSION**Turnover (Sales) Trend**

The turnover ratio is computed by calculating the value of production per month and then dividing the component of inventory with the monthly value of production. This solution gives the component expressed in terms of month's value of production. Another method of computing the turnover ratios of the components of inventory is to use the value of production instead of cost of production or sales. The turnover ratio explains the number of times the inventory is turned over during a given period.

The turnover is high when the ratio is lower and is poor when the ratio is higher. The higher the turnover of the component, the more efficient is the management of that component. However, a relatively high turnover ratio may be the result of too low a level of the component. The ratio must be judged in relation to past and expected ratios of the firm and in relation to the ratios of similar firms, the industry norm, or both. The data with regard to same is analyzed and presented through table 5.1.

TABLE 5.1
TURNOVER (SALES) TREND

YEAR	Sales Amount (Rs. In lakhs)	Growth Percentage	Net Profit Before Tax (Rs. In lakhs)	Net Profit Before Tax Over Sales
2002-03	1,00,055.98	-	8,057.71	8.05
2003-04	93,455.40	-6.59	13,054.70	13.96
2004-05	77,066.76	-17.53	5070.63	6.57
2005-06	70,029.03	-9.13	5204.42	7.43
2006-07	1,00,590.15	43.64	19253.97	19.14
2007-08	1,00,164.90	-0.42	20135.40	20.10
2008-09	1,06,078.08	5.90	1889.71	1.78
2009-10	1,18,740.24	11.93	5441.80	4.58
2010-11	1,38,170.25	16.36	2236.68	1.61
2011-12	1,47,414.05	6.69	5542.60	3.75
TOTAL	10,51,761	50.85	85,881	86.97
AVERAGE	1,05,176.10	5.65	8588.10	8.69

Source: Annual Reports

It is evident from table 5.I that the growth in sales and percentage of Net Profit before tax during the study period. The turnover has shown a negative growth at -6.59 percent, -17.53, -9.13, -0.42 percent in 2003-04, 2004-05, 2005-06 and 2007-08 respectively. Hence, the increasing trend in turnover was found only during 2006-07, 2008-09, 2009-10, 2010-11 and 2011-12 respectively. It is evident from the table that the average turnover was Rs. 1,05,176 lakhs at an average growth rate of 5.65 percent. On the other hand, the Net Profit before Tax (NPBT) was also found with greater volatility year by year right from 2002-03 to 2011-12. It was Rs. 8,588 lakhs averagely over the study period and NPBT over the sales during the study period stood at 8.69 percentages. So, it can be inferred that the turnover of the organization has increased marginally, which seems to be very insignificant growth. And the same has been reflected in the NPBT over the sales that declined from 8.05 percent in 2002-03 to 3.75 per cent in 2011-12.

STOCK AND RAW MATERIAL CONSUMED

Management of inventory is normally done through a proper control over stock with the help of optimizing, where in purchases will be made during entire period of the year taking in to consideration, the opening stock. Here the inventory movement in terms of opening stock, raw material purchased and closing stock as well as the raw material consumed is shown with relevant data collected and analyzed from annual reports of ECIL through table 5.2.

TABLE 5.2
STOCK AND RAW MATERIAL CONSUMED

Rs. In lakhs

YEAR (1)	Opening Stock Amount In Rs. (2)	Raw Material Purchased Amount In Rs. (3)	Closing Stock Amount In Rs. (4)	Raw Materials Consumed In Rs. (2+3-4) (5)
2002-03	14531.93 (13.07)	49,307.20 (8.75)	10158.94 (8.72)	53,680.19 (9.38)
2003-04	10158.94 (9.13)	47,246.65 (8.38)	10710.86 (9.19)	46,694.73 (8.16)
2004-05	10710.86 (9.63)	41,979.11 (7.45)	6622.64 (5.68)	46,067.33 (8.05)
2005-06	6,622.64 (5.95)	38916.93 (6.90)	7681.96 (6.59)	37,837.61 (6.61)
2006-07	7681.96 (6.91)	47446.78 (8.43)	6855.84 (5.88)	48,272.90 (8.43)
2007-08	6,855.84 (6.17)	43,153.11 (7.65)	6,884.13 (5.90)	43,124.82 (7.53)
2008-09	6,884.13 (6.18)	60,417.13 (10.72)	12,680.98 (10.88)	54,620.28 (9.54)
2009-10	12,680.98 (11.39)	71,274.90 (12.64)	19,467.87 (16.70)	64,488.01 (11.26)
2010-11	19,467.87 (17.49)	72,828.14 (12.92)	15,660.79 (13.44)	90,735.22 (15.85)
2011-12	15660.79 (14.08)	91,119.27 (16.16)	19839.93 (17.02)	86,940.13 (15.19)
TOTAL	1,11,256.75 (100)	5,63,689.22 (100)	1,16,563.94 (100)	5,72,481.22 (100)
AVERAG E	11,125.675	56,368.922	11,656.394	57,248.122

Source: Annual reports

Figures in vertical () are component percentage

It is found that the opening stock reported a declining trend in terms of size or volume. From 2003-04 to 2009-10, it decreased from 13.07 per cent over the total of opening stock during the study period to 11.39 per cent. Whereas the raw materials purchased has slowly increased in per cent right from 2002-03 by 8.75 per cent till 2011-12 by 16.16 per cent.

In the case of closing stock the trend was mixed as the quality of opening stock and raw materials purchased fluctuated from time to time. However, the Raw materials consumed followed an increasing trend in 2002-03, 2008-09, 2009-10, 2010-11 and 2011-12 and declining trend was found in the years 2003-04, 2004-05, and 2005-06. It can be inferred from the table that the average Raw materials consumed over the study period was Rs. 57,248.122.

INVENTORY TURNOVER

For the purpose of control, firms should evolve norms in respect of some of the important inventory, ratios based on either industry norms or an average of the past ratios achieved by the organization. The current inventory ratios should be compared with industry norms or their own organization's past achieved norms, subject, however, to the limitations, if any, of such norms. Table 5.3 describes about inventory turnover ratio and days inventory holding.

TABLE 5.3

INVENTORY TURNOVER AND DAY INVENTORY HOLDING

Year (1)	Days of Inventory Holdings (2)	Average stock Amount (Rs. In lakhs) (3)	Turnover Ratio (4)
2002-03	48	12345.43	7497.58
2003-04	45	10434.90	8007.06
2004-05	47	8666.75	7649.98
2005-06	45	7152.30	7954.60
2006-07	30	7268.90	11942.16
2007-08	31	6869.98	11726.00
2008-09	37	9782.55	9078.60
2009-10	61	16074.42	5868.40
2010-11	57	17564.33	6313.12
2011-12	68	17750.36	5269.04

Source: Annual report

It can be seen from the table 5.3 that the trend of inventory turnover of ECIL and the ability of the company in turning out the total inventory in to result. Initially the turnover was 7497.58 that had increased to 11942 in 2006 - 07 and further to 11726 in 2007 - 08 and came down to 5269.04 in 2011 - 12. It indicates that the fluctuations in inventory was not highly volatile, caused by the internal factors, but not external factors. However, the stock turnover was considerable during the study period as the volume of the production was growing very significantly. This trend was also supported by Days of Inventory Holdings (DIH) shown in the table, which shows the average time taken for clearing the stocks. This is calculated by dividing the number of days by inventory turnover. It was 48 days in 2002 - 03 and 68 days in 2011-12, which indicates that the increased velocity of inventory is due to increased consumption over the study period. The inventory has been disposed off or sold on an average in 48 days.

INTERVAL MEASURE

Liquidity of an organization in terms of sufficiency of Liquid assets towards consumption can be measured through Interval Measure (IM). The data collected in this regard (i.e.) Liquid Assets, Cost of Sales and Average Operating Cost per day is analyzed in terms of IM and is shown through table 5.4.

TABLE 5.4
INTERVAL MEASURE

Year	Liquid asset (Rs.in lakhs)	Cost of sales per day(Rs. in lakhs)	Interval measure (in days)
2002-03	61328.55	214.36	286.10
2003-04	81224.51	213.36	380.69
2004-05	71780.59	199.39	463.37
2005-06	112065.60	181.01	619.11
2006-07	137879.37	273.95	503.30
2007-08	178414.37	217.42	820.59
2008-09	201587.72	278.46	723.93
2009-10	187472.55	293.95	637.77
2010-11	188738.21	366.01	515.66
2011-12	158419.76	384.97	411.51
Average	1,37,891.12	262.238	536.23

Source: Annual Reports

It is evident from the table that the liquid assets of the organization has registered a fluctuating trend from 2002-03 to 2011-12. The average investment in liquid assets was Rs. 137891.123 lakhs over the study period against the average operating cost per day Rs. 262.23 lakhs. Initially the current assets were enough for 286 days but afterwards increased to 637 days. Hence, it can be asserted that the change in interval measure is due to a significant growth in consumption of material and turnover of inventory.

INVENTORY COMPONENTS

Inventory consists of many components such as raw materials, bought out items, store items, spares, tools, etc. Data collected in this regard from ECIL is processed and analyzed component wise and shown in the table 5.5.

TABLE 5.5
INVENTORY COMPONENTS

Rs. in lakhs

Particulars	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	Average
1.Raw materials Assemblies	4545.99 (100)	4277.66 (94.09)	1648.53 (36.26)	1616.21 (35.55)	1878.65 (41.32)	1954.73 (42.99)	3517.80 (77.38)	4628.42 (101.81)	6012.30 (132.25)	6460.19 (142.10)	36540.48
2. Stores and Spares	277.77 (100)	258.73 (93.14)	294.27 (105.94)	286.82 (103.25)	241.76 (87.03)	280.73 (101.06)	630.26 (226.89)	989.55 (356.24)	1039.14 (374.10)	1019.87 (367.16)	5318.90
3. Stock of tools	29.57 (100)	26.21 (88.63)	22.67 (76.66)	22.48 (76.02)	23.25 (78.62)	21.93 (74.16)	23.76 (80.35)	6.50 (21.98)	4.81 (16.26)	6.04 (20.42)	187.22
4. Materials in transit	771.86 (100)	702.20 (90.97)	332.05 (43.01)	1271.60 (164.74)	824.10 (106.76)	1350.65 (174.98)	3334.50 (432.00)	3060.99 (396.57)	1783.13 (231.01)	2988.07 (387.52)	16419.15
II Work in Progress	3876.35 (100)	4259.86 (109.89)	3372.20 (86.99)	3799.20 (98.00)	3233.87 (83.40)	2572.46 (66.36)	4337.80 (111.90)	9539.72 (246.10)	5710.28 (147.31)	6425.17 (165.75)	47126.91
III Finished Stock	651.33 (100)	1183.01 (181.62)	945.75 (145.20)	648.76 (99.60)	634.65 (97.43)	689.92 (105.92)	795.41 (122.12)	1207.44 (185.38)	1086.64 (166.83)	2843.20 (436.52)	10686.11
5. Scrap	6.07 (100)	3.19 (52.55)	7.17 (118.12)	36.89 (607.74)	19.56 (322.24)	13.71 (225.86)	41.45 (682.86)	35.25 (580.72)	24.49 (403.45)	17.42 (286.98)	205.20
Total	10158.94	10710.86	6622.64	7681.96	6855.84	6884.13	12680.98	19467.87	15660.79	19839.93	

Source: Annual reports.

Figures in () are Trend Percentage.

It can be seen from the table that the changing paradigms of inventory components in terms of volume and size over the study period. Raw materials have shown an increasing trend which started with 94.09 per cent and reached as high as 142.10 per cent in 2011-12. The investment in stores and spares showed considerable increase from 93.14 per cent in 2002 - 03 to 367.163 per cent in the year 2011 - 12. The stock of tools reduced from 88.63 per cent in 2002-03 and drastically fell to 20.42 per cent in 2011-12.

Materials in transit also increased from 109.89 per cent to 165.75 per cent in the year 2011-12. Finished stock also showed an increase of 181.62 per cent in 2002-03 to 436.52 per cent in 2011-12. Scrap registered an increase from 52.55 per cent in 2002-03 to 286.98 per cent in the year 2011-12. The average of raw materials assembly showed Rs. 36540.48 lakhs, while stock of stores and spares was 5318.90. The average of stock of tools was 187.22 in 2011-12. Materials in transit registered an average of Rs. 16419.15, work in progress posted Rs. 47126.91 lakhs, finished stock showed an average of Rs. 10686.11 lakhs while scrap registered an average of 205.20.

INVENTORY AND PRODUCTION

Uninterrupted production duly depends on effective Inventory Management. Hence, there is a close relationship between Inventory and Production. “Table 5.6 is a modest attempt on the analysis of trends in Inventory and Production.

TABLE - 5.6
INVENTORY AND PRODUCTION
(Rs.in lakh)

Year/Particulars	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	Average
Raw Materials	5347.42 (52.63)	5005.41 (46.73)	2003.25 (30.24)	2910.29 (37.88)	2726 (39.76)	3327.31 (48.33)	6876.06 (54.22)	7695.91 (39.53)	7860.24 (49.80)	9454.3 (47.65)	5320.619
Spares and Stores	277.77 (2.74)	258.73 (2.42)	294.27 (4.45)	286.82 (3.74)	241.76 (3.53)	280.73 (4.08)	630.26 (4.98)	989.55 (5.08)	1039.14 (6.64)	1099.84 (5.54)	547.114
Work in progress	3876.35 (38.15)	4259.86 (39.77)	3372.20 (50.91)	3799.20 (49.45)	3233.87 (47.16)	2572.46 (37.36)	4337.80 (34.21)	9539.72 (49.01)	5710.28 (36.64)	6425.17 (32.38)	4712.691
Finished Goods	651.33 (6.42)	1183.01 (11.05)	945.75 (14.29)	648.76 (8.45)	634.65 (9.25)	689.92 (10.03)	795.41 (6.27)	1207.44 (6.20)	1086.64 (6.94)	2843.20 (14.34)	1068.611
Scrap Materials	6.07 (0.06)	3.19 (0.03)	7.17 (0.11)	36.89 (0.48)	19.56 (0.29)	13.71 (0.20)	41.45 (0.32)	35.25 (0.18)	24.49 (0.16)	17.42 (0.08)	20.520
Total	10158.94 (100)	10710.2 (100)	6622.64 (100)	7681.96 (100)	6855.84 (100)	6884.13 (100)	12680.98 (100)	19467.87 (100)	15660.79 (100)	19839.93 (100)	

Source: Annual reports

Figures in vertical () are component percentage

It is evident from the table 5.6 that the component per cent of Inventory and production show that raw materials have registered 52.63 component per cent over the total inventory and production cost during the year 2002-03, then increased to 54.22 per cent in 2008-09 and 30.24 component per cent that is considerable in the year 2004-05. Spares and stores witnessed and registered 2.74 per cent over inventory and production in the year 2002-03 and increased to 4.45 per cent in 2004-05 then declined to 3.53 per

cent in the year 2006-07 and later increased to 6.64 per cent in 2010-11 on the other hand work in progress, finished goods and scrap material have also shown major fluctuations. Work in progress registered 38.15 per cent in 2002-03, rose to 50.91 per cent in 2004-15 and came down to 32.38 per cent in the year 2011-12. Finished goods witnessed fluctuations as it started with 6.42 component per cent in the year 2002-03 then increased to 9.25 per cent in the year 2006-07 then drastically came down to 6.2per cent in the year 2009-10 and finally stood at 14.34 per cent in the year 2011-12. Lastly scrap material has registered 0.06 per cent in the year 2002-03 and ended with 0.08 per cent in the year 2011-12. The average of raw materials was Rs. 5320.619 lakhs for the study period. The average of spares and stores was Rs. 547.114 lakhs similarly work in progress, finished goods and scrap materials showed an average of Rs. 4712.691 lakhs, Rs. 1068.611 lakhs and Rs.20.52 lakhs respectively. Hence, it can be asserted that the overall trend in inventory and production cost has increased as the production has followed an upward trend.

COST TRENDS

Cost is an essential element in deciding the fate of the product. Not only is that, in the present context, the strategic cost management an integral part in establishing the status of a product. Data collected in this regard from the organization is analyzed and shown in the table 5.7.

TABLE 5.7
COST TRENDS
Rs. In lakhs

Year particulars	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Sales	100055.98	93455.40	77066.76	70029.03	100590.15	100164.90	106078.08	118740.24	138170.25	147414.05
Cost of sales or (Total cost)	82683.22	78965.66	70139.75	63806.23	79888.38	76759.52	101041.36	110369.52	132150.6	141133.3
Percentage of cost of sales to sales	82.63	84.49	91.01	91.11	79.41	76.63	95.25	92.95	95.64	95.73

Source: Annual reports

It can be seen from table 5.7 that the percentage of cost of sales of ECIL has shown mixed trend. It began with 82.63 per cent over the sales in 2002-03, and then increased to 84.49 per cent in 2003-04, 91.01 per cent in 2004-05, 91.11 per cent in 2005-06. It further declined to 79.41 per cent in 2006-07, and then slumped further to 76.63 per cent in 2007-08. Then after the cost of sales increased to 95 per cent in 2008-09 then stood at 92.95 per cent in 2009-10, and finally settled at 95.64 per cent in 2010-11 and 2011-12. Hence it is understood that the cost trends of ECIL are very favorable over the study period except in 2007-08 and 2008-09. Not only that the average percent of cost of sales to sales was 89.08 per cent.

IMPACT OF INVENTORY TURNOVER ON PROFITABILITY

Every organization is expected to turnout properly, optimally and efficiently the result into source. Inventory plays a pervasive role in determining the fate of cost of production and overall performance of the enterprises. So, data collected in this regard is analyzed with the help of select statistical tools in table 5.8.

TABLE 5.8

IMPACT OF INVENTORY TURNOVER ON PROFITABILITY

Year	Inventory Turnover Ratio	Profit Before Tax (PBT)
2002-03	7497.58	21.59
2003-04	8007.06	18.69
2004-05	7649.98	13.36
2005-06	7954.60	28.98
2006-07	11942.16	67.82
2007-08	11726.00	10.69
2008-09	9078.60	0.87
2009-10	5868.40	2.68
2010-11	6313.12	0.78
2011-12	5269.04	1.34
Co-efficient of Correlation	0.35	

Source: Annual Reports

It was vivid from the table 5.8 that the impact of inventory turnover over profitability is 0.35 as per coefficient of correlation. It does mean that the relationship is positive and the inventory management of ECIL is considerable as the correlation between inventory turnovers over PBT is positive.

CONCLUSION

This chapter made an attempt to analyze the dynamics of inventory components, in terms of volume and size over the study period. It is found that the uninterrupted production of ECIL was due to effective Inventory Management and a close relationship between Inventory and Production at ECIL. It is found through analysis that the inventory management has properly performed based on the requirement and need of the organization. Turnover and production have increased significantly over the study period. The impact of inventory turnover over profitability was considerably positive. It is concluded that inventory management of ECIL is substantial as the correlation between inventory turnover and PBT is positive.

CHAPTER - VI

***PROBLEMS OF OPERATIONAL
WORKING CAPITAL AT ECIL***

*This chapter presents the practical operational problems of ECIL
from the perspective of Management of Working Capital.*

6.1 OPERATIONAL PROBLEMS

The basic objective of financial management is to maximize the value addition to the shareholder's wealth, which is possible only when company can earn sufficient profits. The amount of such profits largely depends upon the magnitude of sales for which the organization should invest enough funds in current assets. The current assets are needed because sales do not convert into cash instantaneously. Not only that, even, there would be always a time gap between the sale of goods & receipts of cash. The significance of working capital is felt for this period in order to sustain the sales activity. The time gap is technically called as "Operating Cycle", which is very short being for a service-oriented organization. Hence, there would be plenty of problems that emerge over the operating cycle of an organization with regard to working capital.

In fact, the problems aforesaid are due to impact of over trading on working capital or under capitalization or over capitalization on working capital. Overtrading arises when a business expands beyond the level of funds

6.2 OPERATIONAL PROBLEMS WITH REGARD TO WORKING CAPITAL AT ECIL, HYDERABAD

As ECIL is a giant public enterprise, requirement for fixed and working capital is growing constantly. Through the data procured by annual reports and the analysis done in various chapters, the scholar found the following as operational problems at ECIL with regard to management of Working capital.

- Depending on the order only ECIL meets the installed capacity, hence on order only ECIL produces the goods. So the gestation period is much in its operations.
- It is found through the enquiry that the technical gap between top executives and the low level workers is the cause for escalating cost.
- ECIL has been facing stiff global competition.
- ECIL is a peculiar company because all the products are tailor made to suit the requirements. There is no continuous production except in the case of televisions. Based on the orders placed, the raw materials are purchased and the products are delivered. It is due to such reasons, the inventory carrying cost is much, hence, it is not able to compete with the global and private companies because of the cut-throat

competition, and moreover, the Government of India is interested in only making the company self-reliant.

- Most of the orders to ECIL come from the defence sector; they place the orders and make the payments very late with high time lag as they get it sanctioned from the Government. It is due to such reasons the company is suffering a lot from funding itself.
- If ECIL can't produce the products in time they take the help of sub-contractors, hence, the profitability is affected.
- There is lot of constraint, of seasoned, trained technical skills as experts of company are not transferring their skills to the younger generation; hence, succession plan is missing at ECIL.
- The return on investments over technological advancements made by ECIL is not commensurate as such advancements are not properly received and implemented by the younger staff.
- If order is placed, product is produced. For example, in case of DAE, the installed capacity should be there. There should be men, machines, materials, space, buildings, additional power etc. If capital expenditure is there, cost is incurred on these. Projections will be made to get capital budgets, but, after the budgets are granted, they are not properly or effectively utilized.
- In case of contractual obligations when a supplier is not able to complete the project in time then liquidity damages are highly expected.
- The increasing Capital Requirements of ECIL are not met properly by mobilizing the capital from the Market; hence, there is no IPO issue so far as there is no money or profit to pay dividends. ECIL has not even got the permission from the Government to go for public issue so far.
- The huge liabilities arising out of pay revision arrears and implementation of enhanced gratuity significantly eroded the profits of the company.
- The company has a record orders but at the same time sundry debtors are also increasing.

- Administrative delays in allocating the orders to supplier or sub-contractors, is also standing as a problem in operational activities.
- Surveillance projects in 25 different sites are to be installed and performance is to be established. In some cases due to execution delays the company is unable to satisfy the customers, despite of good quality of work.
- In case of Jammu & Kashmir, the Government normally levies tax heavily up to 30%, which increases or escalates the overhead costs of ECIL.
- Out of the total amount allocated, ECIL has been spending only 2 to 4 per cent on in house R&D.
- At present ECIL has Rs.200 crores to meet emergency and contingent needs only.

CONCLUSION

In this chapter an attempt has been made to analyze the operational problems of ECIL towards working capital. It is found that the financing of working capital is not properly managed by ECIL, though it is an organization which requires huge amount of working capital at times as per the number of orders. To the possible extent the company has used long term sources for financing working capital which consists of debt and contingency funds.

CHAPTER VII

*SUMMARY OF FINDINGS &
CONCLUSIONS AND
SUGGESTIONS*

SUMMARY OF FINDINGS & CONCLUSIONS

- The main objective of the present study is to examine the procurement and utilization of working capital of ECIL, over the period 2002-2012. Besides, it focused on the efficiency of Working Capital of ECIL, in terms of sources of finance of Working Capital and use of long term funds for Working Capital. Even, the study has covered the working capital and profitability of ECIL. Also, it examined the operational problems of working capital of ECIL in detail.
- The present study is a case method of research on ECIL, Hyderabad. Secondary data sources were used for the purpose of analyzing the working capital aspects and the operational problems of working capital. Data was collected from annual reports of the company, Government reports and research journals. In order to estimate the Working Capital, simple linear Regression is used.
- Electronics Corporation of India was set up under the aegis of DAE (Department of Atomic Energy) in the year 1967 under the Companies Act. Its main objective was to develop, manufacture electronic systems and components using indigenous technology thus promoting self reliance in the field of electronics. ECIL is presently a multi product, multi-disciplinary organization with focus on nuclear energy, space and defense sectors, communications, networking partnerships with nuclear energy establishment of India, particularly Bhabha Atomic Research Centre (BARC), Nuclear Power Corporation of India Limited (NPCIL) and Indira Gandhi Centre for Atomic Research (INCAR), ECIL also actively supports other strategic sectors such as Defense Research and Development Organization (DRDO), Department of Space (India), Civil Aviation, Information and Broadcasting, Tele Communications, Insurance, Banking, Police and Para military forces, Oil, Gas, Power, Space Education, Health, Agriculture , Steel & Coal.
- ECIL played a pioneering role in supporting the ambitious programs of ISRO. ARVI Satellite Communication (ASCOM) group was constituted by drawing experts from various organizations to execute the design, develop, manufacture, install, test and commission the country's 1st INTELSAT Class-A Earth Station Antenna at ARVI, Pune for providing the gateway for overseas communications for the traffic originating around Mumbai region. The company has thus evolved over

the years as a multi-product company serving multiple sectors of Indian economy with emphasis on import substitution and development of products and services that are of economic and strategic importance to the country spanning the strategic sectors of Atomic Energy, Defense, Space, Security, IT & e Governance.

- The ECIL is a vast growing company which requires additional funds on a regular basis, whether internal or external. Particularly, it highly needed short-term finances in view of its present position and enormous scope for improvement in the services provided.
- It is found through the analysis that the major part of the funds of ECIL is appropriated for meeting working capital requirements only.
- The analysis of components of working capital showed a mixed growth during the study period. It is due to serious fluctuations in production such growth was emerged. The average investment in inventory stood at Rs.116563.94 lakhs over the study period. Similarly, the investment in Debtors has shown a mixed trend with an average of 44.99 percent sharing in total Current Assets over the study period. It indicates that the Debtors Turnover of the company got higher day by day. The cash and bank balances reported a high degree of volatility in their growth during the study period, hence, the average cash and bank balance stood at Rs. 249985.759 lakhs, which amounts to 17.34 percent over the total Current Assets. It is an indication of increase in liquidity, at the cost of profitability. The proportionate change in current assets over the total assets was due to discrepancy in working capital caused by the dynamics in the levels of production.
- The growth in gross working capital decreased from 28.10 per cent to -12.78 percent against the trend of short term funds. It is found that from 2002-2003 to 2011-2012 the total current assets were excessive than current liabilities, hence, net working capital emerged and that part was financed through long - term sources.
- It is found through the analysis that the ECIL followed conservative approach of working capital management and utilized its long term finances to finance the working capital to the part of permanent working capital. The percentage of financing working capital through long term sources has shown a mixed trend

during the period of study except in 2008-2009. It was 67 per cent in 2002-2003 and increased to 103.75 percent in 2010-2011, and was 5.5 per cent in 2011-12. The decreasing trend indicates that the company utilized its long term funds more effectively by investing them in fixed assets. Conversely, increasing trend is an indication of firm's inefficiency in utilizing the short term sources for working capital.

- Working capital plays a significant role over the profitability of any organization. The profitability of ECIL was not satisfactory as the ECIL followed a strategy of higher liquidity, by its investments in current assets at the cost of prospective profits. It was found that the organization's liquidity decision from the perspective of profitability, which was not at trade – off. As a result, the need emerged to re-look into the issue of effective management of components of working capital.
- It is found through the analysis that there was no shortage of working capital during the study period, i.e., 2002-2012. The excessive working capital increased from Rs.68496.30 lakhs in 2002-03 to Rs.65679.51 lakhs in 2008-09, and further increased to Rs. 69761.74 lakhs in 2009-10 and Rs. 82011.14 in 2010-11. It is concluded that the estimation of working capital is not perfectly done by ECIL and the level of discrepancy is very high that led to higher liquidity at the cost of profitability.
- Net working capital is the real strength of every organization. It is all about the fixed part or working capital that would be financed by the long term sources by an organization. It is found through the analysis that the net working capital of ECIL has followed an increasing trend during the study period, except in 2009-10. It indicates that the portion of fixed working capital increased year by year due to change in level of operation and the nature of business of ECIL, i.e., manufacturing the capital goods. Hence, it can be inferred that the real strength of ECIL has improved in financing its working capital.
- The cash flow statement of ECIL specifies that the cash flow from operating activities was good and the organization was able to bear the burden of meeting the operating expenses. Similarly, cash flow from investing activities has reported

significant fluctuations. The cash flow from financing activities was registered a mixed trend in funds throughout the study period.

- The percentage of cash in current assets was 0.47 in 2002-03 whereas in 2011-12 year it came down to 0.21 per cent. Increase of cash in current assets could be caused by a reduction in the credit given by the company's suppliers. From the analysis, it is inferred that the absolute liquid assets were 0.40 times in the year 2002-03, which is slightly lower than the accepted level as per rule of thumb 0.5. It states that the company needs to improve the short term financial position. The cash velocity ratio explains the speed with which the cash is turned out in the operation cycle. Higher the turnover, the less cash is required for any given level of sales. It is inferred from the analysis that the ratio was 5.3, 5.10 and 5.3 in the years 2006-07, 2009-10 and 2011-12, respectively. It indicates that there was a good cash velocity at ECIL during the study period.
- It is found from the analysis that the DTR was highest with 3.86 times in 2002-03 against the rest of years, where the ratio was found at 1.84 times. It shows that higher the value of debtor's turnover, more efficient is the management of assets. Secondly, the average collection period brings out the nature of the firm's credit and the policy of the debtors more clearly. From the analysis it is found that the average collection period was 93 days, whereas, it has significantly increased to 195 days in 2011-12. It implies that ECIL had a too liberal and inefficient credit policy and collection performance. The creditor's turnover ratio indicates the average time lag in the number of days between the purchases and cash payment to the creditors. Generally, a high ratio is preferred. ECIL's CTR was 2.49 times in 2002-03, 2.29 times in 2004-05 and 2.47 in 2008-09 respectively. It was lower in rest of the years. The Average Payment Period (APP) represents the average number of days taken by the firm to pay its creditors. The APP of ECIL was 145 days, 157 days and 146 days in the years 2002-03, 2004-05 and 2008-09, which shows that the liquidity position of ECIL was good in these years comparatively the rest of the years of study period. The spread of credit risk indicates the difference between Average collection period and Average payment period. A negative spread of credit risk indicates that more time is given to the creditors to pay their obligations, whereas a positive spread of

credit risk indicates that less time is taken to collect cash from debtors. In 2002 – 03, 2003 – 04 and 2011-12 the credit risk of ECIL was negative i.e, -52, -40 and -66 days respectively, hence, for the rest of the years the credit risk was positive.

- Through ageing schedule it is found that 3.30 per cent of book debts are overdue when collection period was more than 180 days.
- It is concluded from the analysis that the turnover has grown by -6.59 percent, -17.53, -9.13, -0.42 percent in 2003-04, 2004-05, 2005-06 and 2007-08 respectively. It is also found that the average turnover was Rs. 105176 lakhs at an average growth rate of 5.65 percent over the study period. On the other hand, the Net Profit before Tax (NPBT) was also found with greater volatility year by year, right from 2002-03 to 2011-12. It was Rs. 8,588 lakhs averagely over the study period and NPBT over the sales during the study period stood at 8.69 per cent.
- It is concluded that the opening stock was declining during the study period in terms of size or volume. From 2003-04 to 2009-10, it decreased from 13.07 per cent to 11.39 per cent. In the case of closing stock, the trend was mixed as the quality of opening stock and raw materials purchased fluctuated from time to time.
- Inventory turnover was 7497.58 times that had increased to 11942 in 2006 - 07 and came down to 5269.04 times in 2011-12. It indicates that the fluctuations in inventory was not highly volatile, caused by the internal factors, but not external factors. This trend was also supported by Days of Inventory Holdings (DIH), which were 48 days in 2002-03 and 68 days in 2011-12. It indicates that the increased velocity of inventory was due to increased consumption over the study period.
- Liquidity of an organization in terms of sufficiency of Liquid assets towards consumption can be measured through Interval Measure (IM). It is found from the analysis that the liquid assets of the organization were fluctuating considerably from 2002-03 to 2011-12. The average investment in liquid assets was Rs. 137891.123 lakhs over the study period against the average operating cost per day Rs. 262.23 lakhs.
- It is analyzed from the dynamics of inventory components, in terms of volume and size over the study period that raw materials have shown an increasing trend, which

started with 94.09 per cent and reached as high as 142.10 per cent in 2011-12. The investment in stores and spares showed considerable increase from 93.14 per cent in 2002 - 03 to 367.163 per cent in the year 2011-12. The stock of tools reduced from 88.63 per cent in 2002-03 and drastically fell to 20.42 per cent in 2011-12. Materials in transit also increased from 109.89 per cent to 165.75 per cent in the year 2011-12. Finished stock also showed an increase of 181.62 per cent in 2002-03 to 436.52 per cent in 2011-12. Scrap registered an increase from 52.55 per cent in 2002-03 to 286.98 per cent in the year 2011-12. The average of raw materials assembly showed Rs. 36540.48 lakhs, while stock of stores and spares was 5318.90. The average of stock of tools was 187.22 in 2011-12. Materials in transit registered an average of Rs. 16419.15, work in progress posted Rs. 47126.91 lakhs, finished stock showed an average of Rs. 10686.11 lakhs while scrap registered an average of 205.20.

- Uninterrupted production duly depends on effective Inventory Management. Hence, there is a close relationship between Inventory and Production at ECIL. It is found through analysis that the inventory management has properly performed based on the requirement and need of the organization.
- The trend of cost of sales of ECIL was a mixed one that began at 82.63 per cent over the sales in 2002-03, and then increased to 84.49 Per cent in 2003-04, 91.01 per cent in 2004-05, 91.11 per cent in 2005-06. Similarly, declined to 79.41 per cent in 2006-07, and 76.63 per cent in 2007-08. Then after the cost of sales increased to 95 per cent in 2008-09 then stood at 92.95 per cent in 2009-10, and finally settled at 95.64 per cent in 2010-11 and 2011-12. Hence, it can be asserted that the cost trends of ECIL were very appropriate as per the level of production.
- Turnover and production have increased significantly over the study period. The impact of inventory turnover over profitability was 0.35. It does mean that the relationship is positive and the inventory management of ECIL is considerable as the correlation between inventory turnover and PBT is positive.

7.2 SUGGESTIONS

- For better and impressive performance, ECIL as a capital goods manufacturer needs more focus on Research & Development for further innovative changes in its

products to attain good sales and in turn the expected level of volumes of profits. Despite of the 20 crores fund allotment being made by central government for R&D activities of ECIL, the company should increase additionally the budget for R&D.

- ECIL has been utilizing the long term sources for working capital and the amount of the working capital provided by estimation is also excessive than the real requirement. Hence, there is a need to properly forecast the total requirement of working capital and control the high level of incongruity in the working capital estimation through matching approach of working capital. Consequently, there is a need for ECIL to use very judiciously the working capital to trade-off the liquidity and profitability
- ECIL should focus on product development, capability building, modernization & human resource development, and technology up gradation as thrust areas for its further development and attain the expected level of profits.
- ECIL should appoint skilled personnel, well acquainted with the modern tools, equipments and techniques of inventory management and who can help in creative buying and good decision making for more benefits and effective cost control. Besides, the company has to work on modern techniques of inventory control that help to reduce inventory levels. The reduction of levels in inventories and timely disposal of surplus and obsolete items helps to increase the turnover ratio.
- In accordance with changes taking place in the business landscape, the ECIL should also initiate the changes in purchasing policy and procedures when the situation demands.
- The cash management of ECIL presents a mixed trend because the cash flow from operating, financing and investing activities have shown series of fluctuations, which calls for better cash control techniques.

7.3 SCOPE FOR FURTHER RESEARCH

The present study is a modest attempt in portraying and analyzing the managing practices of ECIL over working capital. Also, it covered the impact of its policies of and working capital over profitability of the organization. On the other hand, the working capital efficiency of the organization in terms of componental analysis, discrepancy in

estimation of working capital, impact of working capital policy on profitability and net working capital, analysis as well as use of long term sources in financing, working capital requirements of ECIL, Hyderabad is analyzed. Besides, the study also made an attempt to study the managerial practices of ECIL over its Cash, Receivables and Inventory management through suitable ratios. As the study's focus is on management of working capital, capital structure, and impact of capital structure on the value of the firm were not included in the scope of the study. Particularly the potential researchers aspiring to do the work on management of finances and working capital management can apply the advanced tools namely, discriminate analysis, linear programming in working capital and various methods of inventory issues in an analytical way. Not only that, even, researchers can also make an attempt to dwell on capital structure and its impact on value of ECIL.

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ABOUT THE BOOK

Public Enterprises are known for their huge investment in fixed capital. As public enterprises work for social welfare, profitability is not expected. Management of Finances in an organization is management of money. For any company to achieve its objective, it is essential that sufficient flow of money to every department is ensured. Managing the working capital and its components is a critical issue for the management. Electronics Industry is expanding rapidly. They require funds on regular basis. The working capital management of Electronics Companies is very critical and challenging in nature. ECIL highly needs short term finances in view of its present position.

It is in this context, an attempt is made through the study to evaluate the management of working capital of ECIL (Electronics Corporation Of India Limited) and the implication of the same on total profitability during the study period. The book makes an attempt to study the managerial practices of ECIL over its cash, receivables and Inventory management through suitable ratios.

There is scope for potential researchers aspiring to do the work on management of finance, working capital management can apply the advanced tools namely discriminate analysis, linear programming in working capital and various methods of inventory issues in an analytical way.



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