
UNIT 15 AN OVERVIEW OF WORKING CAPITAL MANAGEMENT

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15.1 INTRODUCTION

The financial management function broadly covers two distinctive decision areas though related to each other, as the management of long term capital and the management of short term funds or working capital. In block 2, we have learned about the planning and management of firm's long term investments. The other aspect of financial decisions of planning and managing a firm's investment in short term funds shall be taken in this unit. Thus, the present unit deals with the management of working capital which is usually concerned with managing everyday financial activities such as collecting from customers and paying creditors to ensure firm's continued operations and avoid costly interruptions.

Working capital is an integral part of managing a business and therefore its efficient and effective management can ensure incessant earning to the business without hindering its liquidity position. Working capital can thus be viewed as the amount of capital required for the smooth and uninterrupted functioning of a business firm which constitutes procurement of

raw materials, converting them into finished goods for sale and realising cash from debtors and account receivables. Working capital decisions concerns with cash inflows and outflows that occur within a year or less and also encompasses the process of planning, organising, monitoring and controlling of current assets and current liabilities and involves deciding about the means of financing them. This unit explains the meaning, types, basic elements of working capital decision, factors affecting working capital, estimating working capital requirements and components of working capital management.

15.2 OBJECTIVES

After reading this unit you will be able to:

- Explain and define the meaning of Working Capital.
- Assess the importance of Working Capital.
- Understand the relationship between components of Working Capital.
- Identify the factors affecting the Working Capital requirement.
- Estimate the amount of Working Capital.
- Comprehend financial planning and management of Working Capital.
- Conversant with estimating firm's Working Capital using the operating cycle.

15.3 CONCEPTS OF WORKING CAPITAL

15.3.1 MEANING AND DEFINITION

The working capital management consists of management of short term assets of a business concern like stock, cash, marketable securities, receivables and short term obligations in the form of creditors, payables, short term loans. It indicates liquidity position of the company. In laymen terms, it is the cash needed to pay for the day to day operation of the business.

Thus, like most other financial terms the concept of working capital is used in different connotations by different writers.

“The administration of the firm's current assets- namely, cash and marketable securities, receivables and inventory- and the financing (especially current liabilities needed) to support current assets.

Van Horne and Wachowitz

“Working Capital is the amount of funds necessary to cover the cost of operating the enterprise”.

Shubin

“The term working capital refers to a firm’s short term assets, such as inventory, and its short-term liabilities, such as money owed to suppliers’. *Ross, Westerfield and Jordan*

Working capital means current assets.

Mead, Baker and Malott

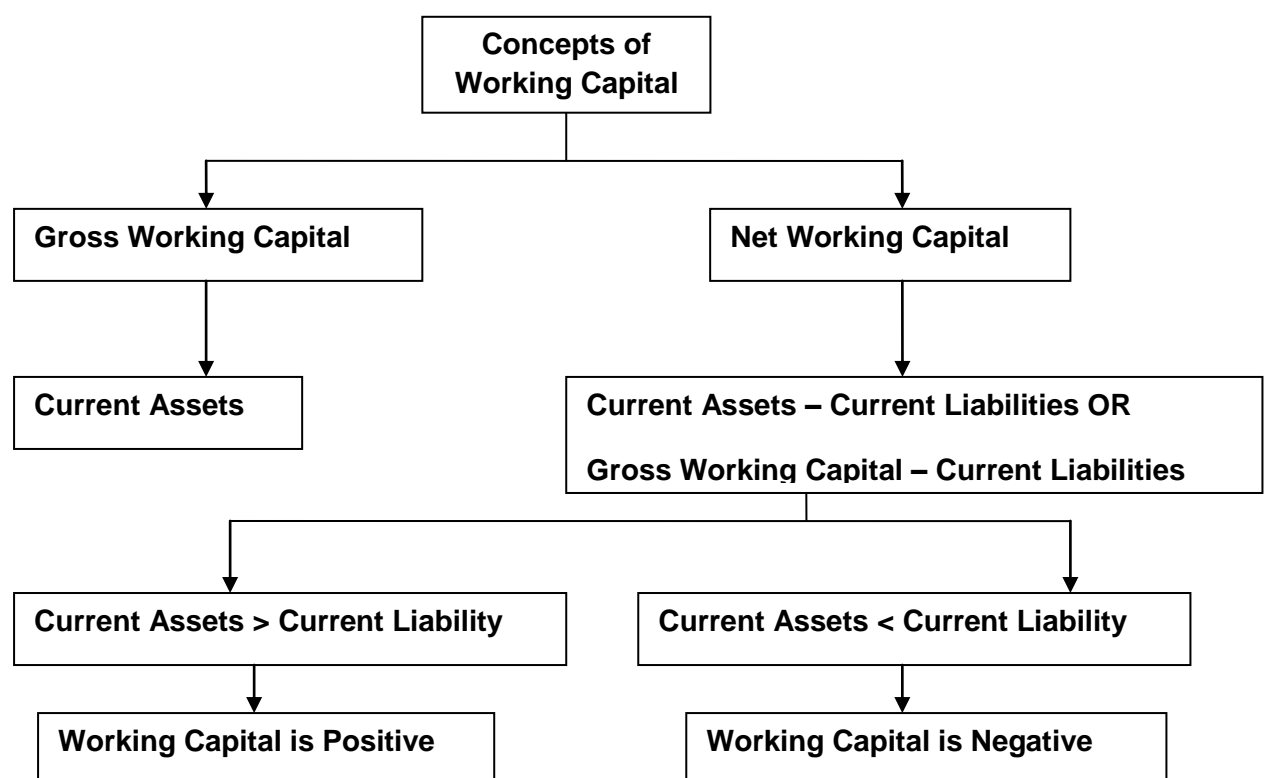
Working Capital is the sum total of the physical working capital as already defined above and the cash deposits in hand and at bank and the net balance receivable over amounts payable at the end of the accounting year. Working capital, however, excludes unused overdraft facility, fixed deposits (irrespective of duration), advances for acquisition of fixed assets, loans and advances by proprietors and partners (irrespective of their purpose and duration), long-term loans (including interest thereon) and investments.

The Annual Survey of Industries (ASI)(survey 2009-10)

15.3.2 CONCEPT OF GROSS AND NET WORKING CAPITAL

Working Capital is defined in two ways therefore there are two concepts of Working Capital:

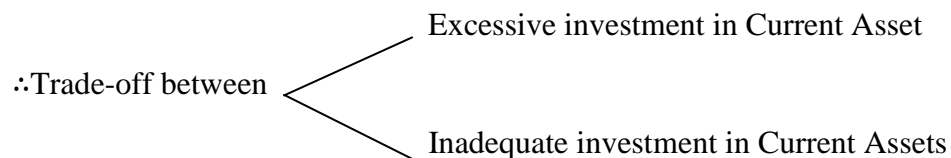
- (i) Gross Working Capital.
- (ii) Net Working Capital.



Gross Working Capital: It is total investment in the current assets.

Net Working Capital: It is the difference between current assets and current liability.

Gross Working Capital- The concept emphasises that finance manager should be concerned with the current assets as it provides the total fund for operating a company. Further, the finance manager should also know various investment avenues where idle funds can be invested for the short term for increasing profitability. Thus, your consideration should be on managing an optimum level of current assets and should avoid excessive and inadequate investment in current assets. The reason being an excessive investment in current assets or short term assets will ruin the profitability of a company whereas inadequate investment in current assets can lead to insolvency of an enterprise as it will find difficulty in meeting its short term obligations.



Net Working capital: This view denotes that company should optimize liquidity and profitability by managing individual current assets and current liability and also by managing the interrelationship between each other. Therefore it can be put up as excess of current assets over current liabilities. It is alternatively known as 'Net Current Assets'. It can be either positive or negative. If the total current assets are greater than total current liabilities then you can assess it as positive working capital and on the other hand, if the sum of all current liabilities or short term obligations is greater than short term assets or current assets then you may have a negative working capital.

15.3.3 TYPES OF WORKING CAPITAL

Working capital is generally divided into two types as;

- i) **Permanent Working Capital or Fixed Working Capital**
- ii) **Variable or Fluctuating Working Capital**

Permanent Working Capital or Fixed Working Capital-The minimum level of current assets maintained by a company for meeting minimum long term needs is termed as Permanent Working Capital. The example of Permanent Working Capital is safety stock of cash and inventories. Thus, it can also be put it as the minimum limit in current assets which is required for enduring the business operations without intrusions. This level depends on the operating cycle period of the company and the policy of the management in respect to the degree of flexibility to the production and sales.

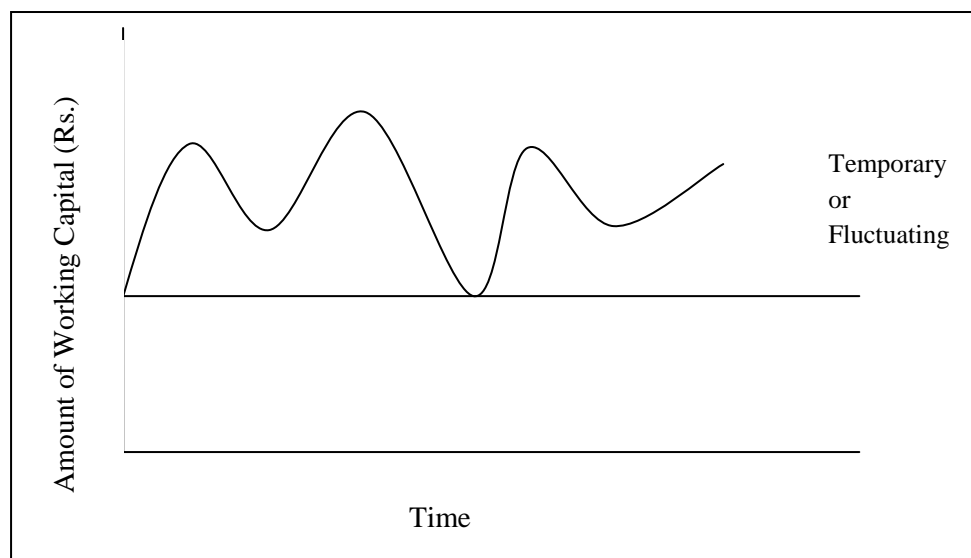
Fluctuating or Variable Working Capital-This is the additional working capital required to buffer for the changes in production or sales. It is the amount of current assets required over and above the minimum level and this varies according to the level of activities or operations. It is generally said as to have current assets in excess of the current liabilities as it will safeguard a company for meeting short term obligations within the ordinary operating cycle of a company. For example, woolen garment manufacturers or soft drink manufacturers are

required to maintain a larger amount in stocks in anticipation of increased sales in their season.

Traditionally, it is said that a higher level of current assets in comparison to the level of current liabilities will provide a shield against the liquidity crisis of a concern. It is a conventional rule that the company should keep twice the amount of investment in current assets *vis-à-vis* current liabilities. Further, one should also consider the quality and market value of short term assets in assessing the level of current assets in comparison with the level of current assets. Moreover, net working capital concept also helps managers in formulating policies for a judicious mix of short term and long term funds for financing current assets. Therefore, it subdivides the amount of working capital to be financed with permanent sources of funds like equity, share capital, debentures, preference share capital, retained earnings and long term loans.

Figure 15.1 denotes that permanent working capital is stable over time whereas fluctuating or temporary working capital varies with either the demand of outputs or supply of inputs. However, permanent working capital can also increase or decrease over a period of time.(Fig 15.2)

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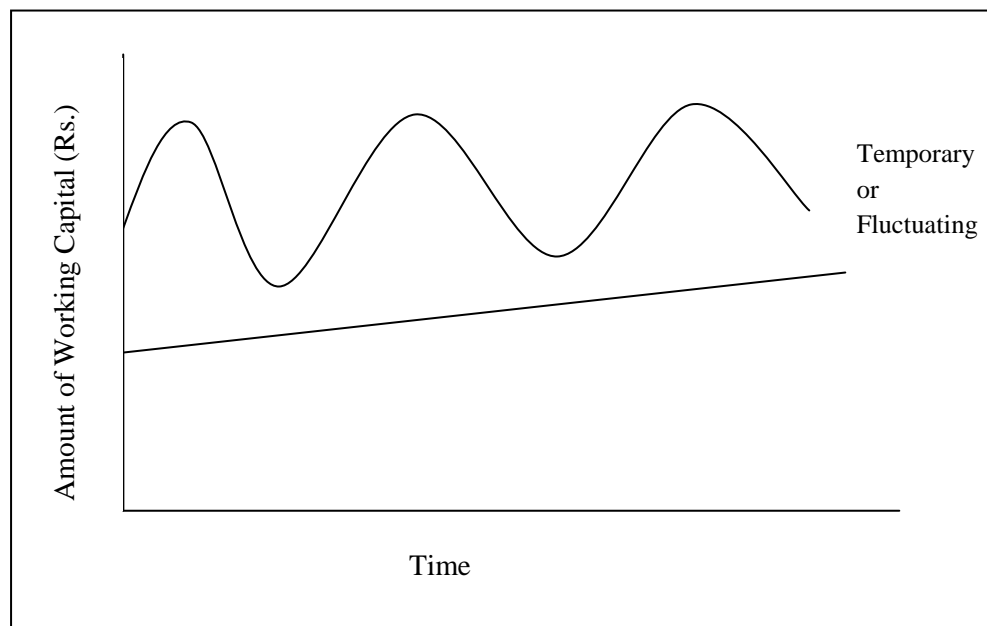


Figure 15.1 and 15.2 Temporary and Fluctuating Working Capital*

Further, the two decisions regarding types of working are in respect of;

- Financing pattern of current assets and
- The ratio of current assets to current liabilities.

15.4 COMPONENTS OF WORKING CAPITAL

Broadly, working capital is composed of current assets and current liabilities.

Current Assets- These are those parts of total assets which are liquid in nature and are either held in form of cash or can be easily converted into cash within one accounting period. Current assets generally include-

I) Inventories-

- a) Stock of Raw Materials
- b) Stock of Work in Progress
- c) Stock of Finished Goods
- d) Stock of stores, spares and fuel, etc.

II) Sundry Debtors

- a) Debts outstanding for a period exceeding six months.
- b) Other Debts

III) Bills Receivables

IV) Cash and Bank

- a) With Scheduled Banks
 - i) in current account
 - ii) in deposit account
- b) With Non-Scheduled Banks
- c) Cash and Cheque at collection centres
- d) With others

V) Marketable Securities**VI) Loans and Advances**

- a) Bills receivables granted by scheduled banks
- b) Secured loans
- c) Unsecured loans
 - i) Advances recoverable in cash or kind for value to be received
 - ii) Deposits
 - iii) Balances with customs and Excise Authorities
- d) Taxes paid in advances and deducted at source

VII) Prepaid Expenses

Current Liabilities-These are the obligations of the company which are to be paid within one accounting period, usually one year.

I) Acceptances**II) Sundry Creditors****III) Advances and deposits from customers****IV) Unclaimed dividend warrants****V) Unclaimed denture interest warrants****VI) Application money refundable****VII) Interest accrued but not due on loans****VIII) Hire purchase dues****IX) Short term loans and advances****X) Cash credit from banks****XI) Other short term payables****XII) Bank Overdraft****XIII) Provisions**

- a) Provision for Taxation
- b) Proposed dividends on preference and equity shares

XIV) Bills payable**XV) Income received in advance**

To have better insight, let us go through the company balance sheet illustrated as under and understand how practically working capital components are included and presented.

Balance Sheet as at 31 st March, 2016							
	Not e	As at 31 st March, 2019 (Rs. In Crores)			As at 31 st March, 2018 (Rs. In Crores)		
EQUITY AND LIABILITIES							
Shareholders' Funds							
Share Capital	1		804.72			801.55	
Reserves and Surplus	2		<u>32124.28</u>	32929.00		<u>29934.14</u>	30735.69
Non-Current Liabilities							
Long-term borrowings	3		25.83			38.69	
Deferred tax liabilities (Net)	4		1848.42			1631.60	
Other Long term liabilities	5		15.13			7.05	
Long-term provisions	6		<u>112.19</u>	2001.57		<u>100.72</u>	1778.06
Current Liabilities							
Short-term borrowings	7		3.60			0.02	
Trade Payables							
Total outstanding dues of micro enterprises and small enterprises			32.92			21.91	

Total outstanding dues of creditors other than micro enterprises and small enterprises		<u>2232.67</u>	2265.59		<u>1882.71</u>	1904.62	
Other Current liabilities	8		4000.08			3671.18	
Short-term provisions	9		<u>8318.59</u>	<u>14587.86</u>		<u>6106.09</u>	<u>11681.91</u>
TOTAL				49518.43			44195.66
ASSETS							
Non-Current Assets							
Fixed assets	10						
Tangible assets			13816.77			13777.14	
Intangible assets			387.76			401.35	
Capital work-in progress- Tangible assets			2470.08			2085.49	
Intangible assets under development			<u>30.75</u>			<u>28.65</u>	
			16705.36			16292.63	
Non-Current investments	11		6392.90			2441.64	
Long-term loans and advances	12		2285.43	25383.69		1506.36	20240.63
Current Assets							
Current Investments	13		6461.34			5963.82	
Inventories	14		8519.82			7836.76	
Trade receivables	15		1686.35			1722.40	
Cash and bank balances	16		6563.95			7588.61	

Short-term loans and advances	17		501.84			549.89	
Other Current assets	18		<u>401.44</u>	<u>24134.74</u>		<u>293.55</u>	<u>23955.03</u>
TOTAL				49518.43			44195.66

Exhibit 15.3 Balance Sheet of ITC Ltd.

In the above Balance Sheet, you may notice Short-term borrowings, Trade Payables, Total outstanding dues of micro enterprises and small enterprises, Total outstanding dues of creditors other than the micro enterprises and small enterprises, Other current liabilities and short term provisions as current liabilities that are reflected in the ITC's Balance Sheet. Further, you may also notice that Current investments, Inventories, Trade Receivables, Cash and Bank Balance, Short term loans and advances and other current assets are included in the head current assets.



Check Your Progress-A

Q1. Why is it necessary for you to assess working capital?

Q2. What are Current Liabilities?

Q3. Distinguish between

- i) Gross Working Capital and Net Working Capital
- ii) Permanent Working Capital and Temporary Working Capital

Q5. Which concept represents excess of current assets over current liabilities?

- a) Working Capital
- b) Gross Working Capital
- c) Net Working Capital
- d) Going Concern Concept

Q6. Which of the following is not a current asset?

- a) Cash in hand
- b) Debtors
- c) Bill Payables
- d) Goods on consignment

Q7. Fill in the Blanks with appropriate word or words.

- a) Assets and liabilities of a company can be classified on the basis of duration into..... and
- b) Operating assets are also called as
- c) The total stock in a company generally comprise of, and finished goods.

Q8. Which of the following statements are true or false in respect to working capital?

- a) The management of current assets is a tradeoff between liquidity and profitability.
- b) Net working capital is always positive.
- c) Current liabilities are the liabilities raised for the purposes of current production.

15.5 NEED AND SIGNIFICANCE

Working capital is considered to be a backbone of a business as it plays an important role in maintaining financial health and strength during the normal business operations of a company. As we know that during the normal course of business, sales do not convert into cash instantaneously. There is always a time gap between the sale of product and receipt of cash. Working capital is required for this period to support and sustain the process of production and sales activity.

Imagine you run a manufacturing company; you will need to invest your money in two types of assets. One is an investment in machinery, land, building which is termed as fixed assets whereas , the other is an investment in operating assets, namely assets enclosed by one operating cycle. These operating assets are also known as ‘working capital’. Thus, adequate working capital is needed to sustain the sales, purchase raw materials, pay wages, and other

expenses required for manufacturing the goods / products to be sold. After realizing that you need working capital to support day to day as well as the smooth functioning of a company, you will also recognize the fact that a company faces the uncertainty of demand, price, quality, availability of raw materials its products and those of suppliers, therefore it would be necessary for you to judge and decide the amount of investment in working capital so that it meets the needs of forecasted sales as well as to have a buffer in form of safety stocks to meet unforeseen contingencies. Hence you have to also understand that the working capital needs of the firm can be fluctuating with the changing business activity or may be same throughout the year. Thus as a manager, you have to initiate timely action and correct imbalances due to change in business operations.

Therefore, it can be stated in a nutshell that working capital is needed to run the day to day functioning of business. No business firm can work or succeed without sufficient working capital. In other words, to run the business, liquid surplus (current assets-current liabilities) is always needed and this difference of current assets and current liabilities which is termed as liquidity surplus by various authors is called as working capital gap and this gap can be identified by finding out operating cycle, which is sometimes termed as heart of the need for working capital.

15.6 OPERATING CYCLE

Operating cycle denotes the continuous flow from cash to suppliers, to inventory, to accounts receivables and back into cash. Thus, it is the time period required to convert sales after the conversion of resources into inventories and later in cash. A manufacturing firm moves through the various stages of the operating cycle, viz, carrying raw material or components in the store, carrying unfinished stocks during processing, holding finished goods until sale and average collection period before getting back cash along with profit.

The cycle commencing from holding of raw material or components and computing with finished goods production is known as 'Production Cycle'.

Thus, it can be put up in this way:-

Raw material Conversion Period+ Work in Progress Conversion Period+ Finished Goods Conversion Period=Production Cycle

Further, you have to offer a credit period to your customer for paying bills on account of sale. This cycle further extends finished goods holding to carrying receivables.

Raw material Conversion Period+ Work in Progress Conversion Period+ Finished Goods Conversion Period+ Receivables Conversion Period=Gross Operating Cycle

You also know that a company purchases raw materials and other components like tools, spares, etc. thereby giving rise to the spontaneous current liability which are account payables. Further, when the average payment period is deduced from the Gross Operating

Cycle the resultant period is known as 'Net Operating Cycle Period' or 'Operating Cycle Period'. Thus, the equation may now be written as;

$$\text{Raw material Conversion Period} + \text{Work in Progress Conversion Period} + \text{Finished Goods Conversion Period} + \text{Receivables Conversion Period} - \text{Average Payable Period} = \text{Net Operating Cycle}$$

The cycle which now extends further beyond the stage of receivables holding period to creditor's payable period due to creditors or suppliers, is called as 'Net Operating Cycle'.

Further, if depreciation is excluded from expenses in the computation of operating cycle, the net operating cycle also results to the cash conversion cycle.

$$\text{Raw material Conversion Period} + \text{Work in Progress Conversion Period} + \text{Finished Goods Conversion Period} + \text{Receivables Conversion Period} - \text{Average Payable Period} = \text{Cash Conversion Cycle}$$

It is net time gap between cash collections from the sale of the finished goods and cash payments for raw materials and other resources purchased by the company.

Step by Step calculation of the operating cycle shall be discussed later in the unit.

Thus, shorter the duration of the operating cycle period, faster will be the transformation of current assets into cash.

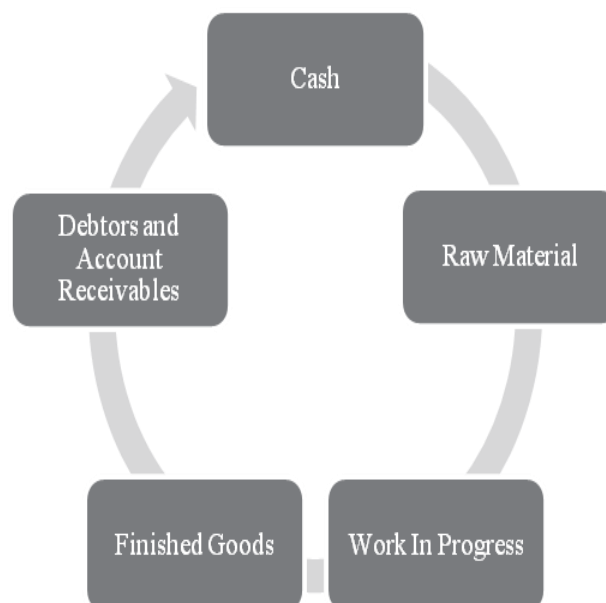


Figure No. 15.4 Operating Cycle of a Manufacturing Firm

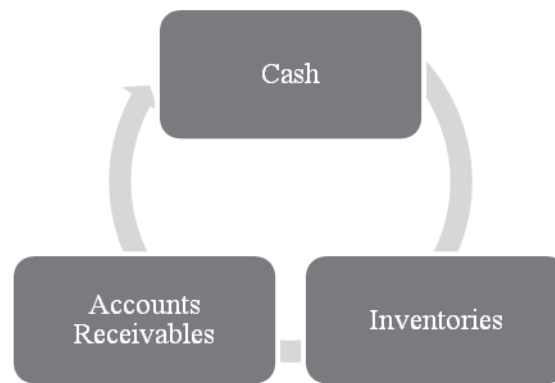


Figure 15.5 Operating Cycle of a Trading Firm

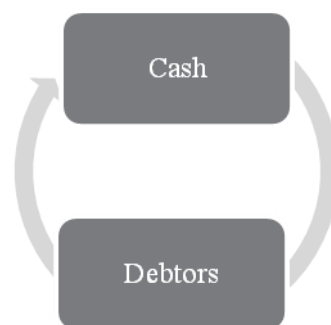


Figure 15.6 Operating Cycle of a Financing Firm

Applicability of Operating Cycle Approach-

Operating Cycle is used both in controlling and forecasting working capital. It is gradually used in estimating the working capital requirement of a company to support the forecasted level of sales. Operating cycle can be compared with a yardstick or benchmark or with the corresponding figure of the industry or previous accounting year. Noticeable deviations can be identified for further analysis to seek the reason for such occurrences and, thus remedial measures can be taken to correct imbalances. Thus, operating cycle can shed light on improving the efficiency of working capital management across the years.

Concept of Negative Cash Cycle and the Concept of Zero Working Capital

Internet –based bookseller Amazon.com manages its cash cycle extremely well. It turns its inventory over 26 times a year, making its inventory period very short. It charges its customer's credit card when it ships a book and its gets paid by the credit card firm usually in a day. Finally, it takes about 46 days to pay the suppliers. All this mean that Amazon.com has a negative cash cycle.

Many leading companies seek to have zero (or even negative working capital). This happens when inventories and receivables are supported by the credit provided by suppliers and the advances given by customers. On average, working capitals to sales ratio is about 0.20. Reducing working capital has two financial benefit (i) every rupee released by reduced working capital makes a one-tome contribution to cash flow, and (ii) periodically , the cost of money locked in working capital is saved. Apart from the financial benefits, reducing working capital forces a company to serve its customers quickly, lessens warehousing needs, and reduces obsolescence costs.

¹Prasanna Chandra, 2010, 'Financial Management: Theory and Practice, Page No.663 and 665 Tata Mc

Exhibit 15.7 Concept of Negative Cash Cycle and the Concept of Zero Working Capital

15.7 FACTORS AFFECTING WORKING CAPITAL REQUIREMENTS

Working capital, as we learned, is the sum of investments made in raw materials, or components, stock in progress, finished goods held in stock and value of bills unrealized on the account of credit sales. These investments of funds in working capital has a total cost viz. opportunity cost of loss of interest that would have been earned by the company if such funds had been invested in investment vehicles. Therefore, it becomes imperative for you as a manager to be careful in deciding on the amount of investment required in working capital, as working capital is termed as the lifeline of a business. But it is not an easy task to estimate the working capital requirements and to rank them because the influence on working capital components changes over the years as a company's internal policies and the environment in which it operates changes. The following factors are to be taken into consideration while making an estimate of working capital requirements of a concern-

1. **Nature of Business**-A working capital requirements of a business enterprise is to a great degree, is related to the nature and character of business it conducts. Firms engaged in trading and financing requires a large amount of funds in working capital and very small investments in fixed assets. On the contrary, manufacturing firms

would need relatively less amount of working capital and have to invest substantially in fixed or long term assets. Further, luxurious products producing companies and merchandising concerns have to carry big inventories of materials to meet customer's demand and have to grant greater credit period to attract customers, therefore, they will have to carry large amount of working capital. In contrast, public utilities concerns maintained a small working capital position because of continuous inflow of cash from their customers. Retail stores like Shopper Stop, Pantaloons, Reliance Mega Mart, Easy day and the likes must carry large stock of a variety of goods or products to satisfy varied and continuous demand of their business. Exhibit 15.8 gives highlight of relative proportions of investment in current assets and fixed assets for certain industries.

Proportions of Current Assets and Fixed Assets¹		
Current Assets (%)	Fixed Assets (%)	Industries
10-20	80-90	Hotels and Restaurants
20-30	70-80	Electricity Generation and Distribution
30-40	60-70	Aluminum and Shipping
40-50	50-60	Iron and Steel, Basic Industrial Chemicals
50-60	40-50	Tea Plantation
60-70	30-40	Cotton Textiles, Sugar
70-80	20-30	Edible Oils, Tobacco
80-90	10-20	Trading and Construction

¹Prasanna Chandra, 2010, 'Financial Management: Theory and Practice', Tata Mc Graw Hill Education Pvt. Ltd., New Delhi

Exhibit 15.8 Proportions of Current Assets and Fixed Assets in Certain Industries

- Size of business-**Companies producing the same products may differ in working capital requirements because of their varying sizes i.e. turnover. A company whose turnover is small requires greater investment in cash, receivables and inventories, whereas, a company with bulky turnover requires lesser investment in cash, receivables and inventories. Further, a small firm though even growing tend to be hard-pressed in working capital financing as they cannot access to capital markets or open markets and hence have to depend upon trade credit and short term loans for meeting the current assets requirements.
- Market and Demand Conditions-**Relationship between volume of sales and working capital requirement is directly proportional to each other. If there is a rise in demand and also in sales then there should be a corresponding investment in inventory, finished goods and account receivable to support the enlarged scale of operations by the company. The degree of competition prevailing in the market

should also be considered before estimating working capital needs. Under the boom conditions in the economy, sales will tend to increase, to support these additional sales, firm requires massive investment in inventories and receivables and thereby additional investment in working capital is brought into the company through short term borrowing generally from banks, financial institution and by marketable securities. On the contrary, under the conditions of recession in the economy, firm squeezes its short term borrowing as sales level dips because of which firm is forced to reduce its investment in inventories and receivables.

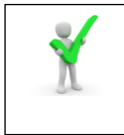
4. **Production Policies**-Level of working capital required in an enterprise depends on the speed and duration of the production cycle. For companies having extended production cycle, working capital requirements are comparatively higher as raw material introduced in the production may take a long period before it gets converted into finished goods for sale. Therefore, funds are blocked in raw material, labour expenses and overheads at the various stages of production. The process period also depends on the selection of manufacturing cycle. Therefore, a firm has to select steady or variable production policies in order to gear inventories to seasonal requirements in the demand for the firm's product. Inventories or stock of finished goods are kept to minimum levels during the off season by adopting variable production policy whereas if a steady production policy is adopted it can avoid changeability in production schedule but firm will have to bear greater inventory costs and risks. Thus, production policies will differ from firm to firm, depending on the demand requirements and intensity of seasonality of product.
5. **Competitive Position**-Competitive position of a company has an important bearing on the working capital needs. In order to combat competition, a firm may offer liberal credit terms to the customers resulting in higher debtors. Moreover, larger inventories may be maintained by the company to meet the customer's demand. However, a monopoly or monopolistic firm may have some relaxation in amount of working capital required as company can ask for advance payments from their customers. Therefore, when there is cut throat competition, a company has to increase its inventory level to satisfy customer's demand and to grant more liberal credit terms thereby causing increased investment in receivables.
6. **Trade Cycle**-An industry and a company undergoes different stages of business cycle i.e., boom, recession, recovery etc. these recurring movements of the business cycle influences working capital changes. In case of the boom, inflation prevails and business activities increases due to which needs for cash, inventories, etc. get amplified resulting in more blocked funds. On the contrary, during the recession, there is a reduction in business activities and therefore, there will be a fall in inventory and cash requirement. Thus, the company becomes cash poor as the economic prosperity surges and becomes cash-rich as it runs out of it.
7. **Credit Policy**- The credit policy illustrated the term and conditions on which goods are sold and purchased. The credit terms to be granted to the customer are generally governed by its industry and the demands of product by the customers. If the credit items are liberal, the amount blocked in receivables will be larger and in such cases, a

firm will be exposed to considerable amount of risk. However, in case of tight credit policy, there will be increased risk of loosening increased sales, especially, in case of intense competition. For example, in India in the 70's and 80's scooters and cars were sold on advance payment but now, if you intend to buy a scooter or a bike, you have an option of choosing from various models and companies without advance or down payment, rather sometimes sellers are willing to offer scooter on credit.

8. **Operating Efficiency-** Operating Efficiency means maximum production of goods with minimum utilization of resources and at minimum costs. Need for working capital depends on how well company deploys funds and resources, so as to optimize firm's rate of return and thus, helps in seeking advantage of balanced working capital, overall adding value to the firm. Since, it is not possible for a finance manager to predict about the changes in the price of raw material or wages or price of intermittent goods required in the production but he can certainly ensure efficient and effective utilization of resources. Further, management increasingly sophistication in handling the current assets and current liabilities will curtail the major working capital problems.
9. **Business Growth rate**—Assessment of working capital requirement is also influenced by the growth rate of a business concern. A large amount of working capital is needed if management anticipate robust growth of the concern. However, there is no clear cut rule demarcating the relationship between the growth of the company's relationship between the growth of the company's volume of production and the growth of its working but it generally follows that the increase in operations of a business concern will demand higher investment in working capital. In the nutshell, an increased volume of operations should always be supported and backed by the increased working capital. The need for puffy working capital does not contribute directly in the growth of business but it indirectly supports the growing operations of a business concern.
10. **Price Level Changes**—Inflation is indicated by the rise in the price of goods and services kindle changes on working capital requirements of the firm. Commonly, rising prices level leads to further investment in inventories, receivables and cash. During inflationary conditions companies also tends to increase their production volume as well as also accumulate inventories to reap the speculative gains, thus it forces a business to maintain larger working capital funds as compared to normal conditions of the economy. Further, magnitude of the impact of price level changes on the business differ company to company and industry to industry as some industries are badly affected by it and some may not be affected as severely.
11. **Availability of credit from suppliers**—Working capital requirements of a firm is also affected by the terms and conditions of purchase and sale. A firm, will need less working capital if liberal credit terms are available to it, In addition to it, duration and availability of credit from banks also influences the working capital needs of the firm.
12. **Dividend Policy** – The volume of working capital is also influenced by the dividend policies followed by the company and sometimes, changes in working capital may also bring about an adjustment of dividend policy. For example, these days many

companies provide ESOP (Employees Stock Option Plans) Scheme or Right Shares or Bonus shares to cover up or to avoid liquidity problems. However, if company desired to maintain stable dividend distribution in cash then accordingly it has to maintain higher amount of working capital.

13. **Degree of Seasonality-** Magnitude and form of working capital is also affected by how much a company is exposed to seasonal fluctuations. Companies that experience strong seasonal movements in demand also notice fluctuations in working capital for every change. For example, in a woolen mill, the demand will certainly be higher during the winter season and therefore, it has to build up high inventories and bigger base of receivables and subsequently additional working capital is required to maintain higher production especially before onset of winter. In India, inability to manage severe working capital fluctuations has forced companies to diversify into unrelated areas to compensate the factors of seasonality.



Check Your Progress- B

Q1. Mention in your own words, what you understand by profitability and liquidity.

Q2. List any five determinants of working capital.

Q3. Distinguish between Operating Cycle and Cash Cycle.

Q4. Generally , it is noticed that utility concerns like Indian Railways hold 10% of total assets in current assets , whereas, retail trading concerns like, shoppers stop hold 60% of total assets in current assets. Explain why or why not?

Q5. Multiple Choice Questions-

- i) **Which of the following factors influence(s) the composition of working capital?**
 - a) Nature of business
 - b) Dividend Policy
 - c) Degree of Seasonality
 - d) All the above
- ii) **The duration of the operating cycle can be reduced by;**
 - a) Increase in the time available for payments to creditors
 - b) Increase in the raw material storage period
 - c) Decrease in the work in progress period
 - d) Both a and c
- iii) **The time between cash disbursements and cash collection is;**
 - a) Cash Cycle
 - b) Inventory Period
 - c) Operating Cycle
 - d) Accounts Payable Period

Q6. State True or False for the statements given below-

- a) Carry of book debts by your firm will be influenced by the extent of demand that your products commands and the status it has in a competitive environment.
- b) Working capital investment also has a cost attached to it.
- c) Firms engaged in the same line of business activity may have different working capital requirements.
- d) Excise duties on the capital equipment's effects the working capital policies of a firm.
- e) Sugar mills have to carry a small reserve of working capital as they have to spend about two-third of their production expenditure in buying sugar canes.

15.8 ESTIMATION OF WORKING CAPITAL-

Estimation of working capital is the process of assessing as realistically as possible the quantities of raw material or components, stock in progress, finished goods inventory and bills receivables, you will need to analyze as a finance manager at any given time at such levels that will ensure smooth operations of the business.

There are different approaches available to estimate the working capital requirements of a firm. A finance manager can apply any of the following techniques for assessing the working capital requirements of a company-

- 1) Operating Cycle Approach**
- 2) Percent of Sales Approach**
- 3) Estimation of Components of Working Capital Method.**

1) Operating Cycle Approach-

We have already discussed that the concept of operating cycle helps in determining the time duration required to transform current assets into cash. In nutshell, the shorter the duration of operating cycle period faster will be the transformation of current assets into cash. Operating cycle approach is the most followed and is termed as the most systematic and logical approach in working capital computation. In this method, the working capital estimation is made on the basis of analysis of each component of working capital. However, we have already learned various components of working capital, let us figure out important points to be considered while their estimation-

- 1) Cash and Bank Balance- Require most vigilant estimation as it is least productive of all the current assets and it also provides liquidity to a concern.
- 2) The number of units to be required by the Manager to stock depends on raw material consumption rate time lag in procuring new stock, contingencies or buffer stock required etc.
- 3) The value of raw material, wages and other expenses locked up in work in process depends on the availability of technology. It may be noted that there will be different number of units in different stages of production. Therefore, for the purpose of easy and feasible computation the value of raw material blocked in W-I-P will be taken equivalent to full cost of number of units of raw material. It is also assumed generally that W-I-P units are on an average 50% complete with respect to labour and expenses.
- 4) Finished goods are valued on the basis of cost of units in terms of purchasing, procuring and production.
- 5) In case of receivables, it is better to calculate their value on the cost basis because the actual funds locked up in receivables are restricted to the cost of goods sold.
- 6) Creditors, for wages and expenses, are considered they have significant contribution in work in progress and finished goods but are paid usually at the end of the month.
- 7) Depreciation is generally not considered in working capital estimation as it is a non-cash expense and no funds are blocked in it. The working capital calculations ignoring depreciation is known as cash basis working capital whereas when in the calculations, depreciation is included in such estimate is known as total basis working capital.
- 8) Nature and quantum of safety margin or margin for contingency depend upon the characteristics of industry and company. It is generally expressed in terms of percentage of current assets and current liabilities.

Step by Step calculation of the length of operating cycle is presented as below:-

Step1: Raw Material Conversion Period-

$$\text{RMCP} = \frac{\text{Average Raw Material Stock}}{\text{Total Raw Material Consumption}} \times 365 = n_1 \text{ days}$$

$$\text{Where, Average Raw Material Stock} = \frac{\text{Opening Stock} + \text{Closing Stock}}{2}$$

Step 2: Work in Progress Conversion Period-

$$\text{WPCP} = \frac{\text{Average Work in Progress Stock}}{\text{Total Cost of Production}} \times 365 = n_2 \text{ days}$$

$$\text{Where, Average W-I-P Stock} = \frac{\text{Opening Stock} + \text{Closing Stock}}{2}$$

Total Cost of production = Opening Stock of W-I-P + Consumption of raw material + Other manufacturing costs such as wages and salaries, power and fuel etc. + Depreciation - Closing stock of W-I-P

Step 3: Finished Goods Conversion Period-

$$\text{FGCP} = \frac{\text{Average Finished Goods}}{\text{Total Cost of Goods Sold}} \times 365 = n_3 \text{ days}$$

$$\text{Where, Average Stock of Finished Goods} = \frac{\text{Opening Stock} + \text{Closing Stock}}{2}$$

Total Cost of Goods Sold = Opening Stock of Finished Goods + Cost of Production + Excise Duty + Selling and Distribution Cost + General Administration Costs + Financial Cost - Closing Stock of Finished Goods.

Step 4: Average Collection Period or Debtors/Receivables Conversion Period-

$$\text{DCP} = \frac{\text{Average Debtors}}{\text{Total Credit Sales}} \times 365 = n_4 \text{ days}$$

$$\text{Where, Average Debtors} = \frac{\text{Opening Balance} + \text{Closing Balance}}{2}$$

Step 5: Average Payment Period Creditors /Payables Deferral Period

$$\text{CDP} = \frac{\text{Average Creditors}}{\text{Total Credit Purchases}} \times 365 = n_5 \text{ days}$$

Where, Average Creditors = $\frac{\text{Opening Balance} + \text{Closing Balance}}{2}$

From the above calculations, the gross operating cycle period is obtained as;

Step 6: Gross Operating Cycle = $n_1 + n_2 + n_3 + n_4$

Step 7: Net Operating Cycle = $n_1 + n_2 + n_3 + n_4 - n_5$

Step 8: After completing the period of one operating cycle, the total number of operating cycles that can be completed during a year can be completed by dividing 365 with the number of operating days in a cycle. The total operating expenditure in the year when divided by the number of operating cycles in a year will give the average amount of working capital required. Let us, try to compute the working capital requirement for Diksha Pvt. Ltd. using operating cycle period approach-

Period Covered	365 days
Average Period of Credit allowed by suppliers	18 days
	(` in'000)
Average debtors outstanding	500
Raw Material Consumption	60,000
Total Production Cost	10,000
Total Cost of Goods Sold	10,500
Sales for the Year	20,000
Value of Average Stock Maintained:	
Raw Material	300
Work In Progress	380
Finished Goods	290

Solution:

Computation of Working Capital

$$1) \text{ Raw Material Conversion Period} = \frac{\text{Average Raw Material Stock}}{\text{Total Raw Material Consumption}} \times 365$$

$$= \frac{300}{6,000} \times 365 = 18 \text{ days} = n_1 \text{ days}$$

$$2) \text{ Work in Progress Conversion Period} = \frac{\text{Average Work in Progress Stock}}{\text{Total Cost of Production}} \times 365$$

$$= \frac{380}{10,000} \times 365 = 14 \text{ days} = n_2 \text{ days}$$

$$3) \text{ Finished Goods Conversion Period} = \frac{\text{Average Finished Goods}}{\text{Total Cost of Goods Sold}} \times 365$$

$$= \frac{290}{10,500} \times 365 = 10 \text{ days} = n_3 \text{ days}$$

$$4) \text{ Debtors Collection Period} = \frac{\text{Average Debtors}}{\text{Total Credit Sales}} \times 365 = n_4 \text{ days}$$

$$= \frac{500}{20,000} \times 365 = 9 \text{ days} = n_4 \text{ days}$$

$$\begin{aligned} \text{5) Credit Payment Period} &= \frac{\text{Average Creditors}}{\text{Total Credit Purchases}} \times 365 = n_5 \text{ days} \\ &= \frac{\text{Average Creditors}}{\text{Total Credit Purchases}} \times 365 = n_5 \text{ days} \end{aligned}$$

$$\therefore \text{Gross Operating Cycle} = n_1 + n_2 + n_3 + n_4 = 51 \text{ days}$$

$$\text{Net Operating Cycle} = n_1 + n_2 + n_3 + n_4 - n_5 = 51 - 18 = 33 \text{ days}$$

$$\text{Number of Operating Cycles in a year} = 365 / 33 = 11$$

$$\begin{aligned} \text{6) Amount of working Capital Required} &= \frac{\text{Total Operating Expenses}}{\text{Number of Operating Cycle}} \\ &= \frac{10,500}{11} = \text{Rs. } 955 \end{aligned}$$

Tutorial Note: - You will observe that the company has an Average Payment Period of 18 days and a collection of 9 days which gives the impression to the creditors that the company is late in paying its bills or credit. If a company can reduce its raw material storage period and work in progress conversion period, then it certainly require less amount of working capital.

☞ **Words Worth Remembering-**

1. In the above formulas, if only the closing balance is available, then it can be taken in substitute of Average balance.
2. 365 represents number of days in a year, sometimes even one can take it as 360
3. In case of RMCP, WPCP, FGCP, the denominator is calculated at cost basis and the profit margin has been excluded because there is no investment in profit.

2) **As a Percentage of Net Sales Method-** As you have learned in the previous discussion that working capital needs and the sales volume of a company are directly proportional to each other. Therefore, the higher the sales, the greater would be the need for working capital. Hence, one more method, which we can follow to compute working capital requirement is percentage of Net Sales Method. Under this method, working capital requirement is expressed in terms of percentage of expected sales for particular time period. Estimating sales is an exercise in prediction. This computation of working capital on the basis of expected sales is made logically, rationally and based on reliable data. Sales of past years are first plotted to analyze the trend in respect of sales growth and thereafter, we will then have to project and articulate the working capital requirement for the next year. We have to follow three steps in the estimation of working capital which are listed as under-

Step 1– Estimate Total Current Assets as a Percentage of Estimated Net Sales

Step 2– Estimate Current Liabilities as a Percentage of Estimated Net Sales

Step 3– Difference of Step 1 and Step 2, Net Working Capital as a Percentage of Net Sales

You will better understand this procedure, after going through the following data for ABC Company-

Particular (Expected)	Year 1	Year 2	Year 3	Year 4
Sales	5, 00,000	6, 00,000	7, 00,000	10, 40,000
Percentage of Growth	15 %	20 %	25%	30 %
Production (in units)	36	40	50	
Total Current Assets	80,000	1, 00,000	1, 60,000	1, 87,200
Total Current Liability	40,000	50,000	80,000	93,600
Step 1 Current Assets as a % of sales	16 %	16.6%	20%	18%
Step 2 Current Liabilities as a % of sales	8 %	8.3%	10%	9%

Step 3 Difference between = $18\%(16+16.6+20/3)-9\%(8+8.3+10/3)=9\%$

Average of Step1 and

Average of Step 2

Let project that sales of the company in Year 4 will increase by 30 % then Net Working Capital would be computed as 9% which is the difference between step1 and step 2 of Rs.10,40,000, which will be equal to Rs.93,600. Thus, this is one of the simple method of projecting working capital requirement.

4) Working Capital as Percentage of Total Assets or Fixed Assets-

As you learned that total assets of a firm consist of fixed asset and current assets. Now, under this approach working capital requirement is computed as a percentage of fixed assets or total assets. On the basis of past trends, and experience, a relationship between total current assets and total fixed assets or total assets is calculated.

We have to follow three steps in the estimation of working capital which are listed as under-

Step 1– Total Current Assets/ Gross Working Capital/ Net Working Capital

Step 2– Total Assets or Total Fixed Assets

Let us try to work out the working capital requirement for XYZ Industry using the data given below;

Particulars	Year1	Year 2	Year 3
Total Assets	10, 00,000	15, 00,000	20, 00,000(Expected)
Current Assets	1, 00,000	50,000	2, 00,000 (10 % of 20, 00,000)
Current Assets as a Percentage of Total Assets	10%	10%	10%

In the above data, company decided to increase its total assets under capital budgeting decisions to Rs.20,00,000 and it is noticed that company follows a policy of maintaining 10% of Total Assets in Current Assets , therefore, in the Year 4 company is required to keep Rs.2,00,000, worth of assets in working capital.

The major shortcoming of the last two approaches is that it is practically very difficult to establish a relationship and project about the next year sales or fixed assets on the basis of past experience.

15.9 WORKING CAPITAL: LIQUIDITY VS. PROFITABILITY TRADE OFF

One of the important discussions in working capital management is to keep such a balance in the working capital which can magnify profits and at the same time reduces cost. This important aspect emphasizes to determine the optimal amount of working capital which would add a positive impact on the value of the firm. A larger investment in current assets under the certainty conditions would curtail the rate of return on total assets and investments for the firm whereas smaller investment in short term assets would pose a company with the risks of stockouts, mounting payment obligations, production stoppages and lost sales from inventory shortage. It also reveals that greater investment in current assets will provide greater liquidity in making the firm's meet its payment schedules but as we learned above that it also has a cost attached to it, opportunity cost of loss of returns on idle liquid assets. So there exists a tradeoff between profitability and liquidity or tradeoff between cash crunch and cash surplus or tradeoff between risk and return with reference to working capital. In other words, the larger the amount of investment in current assets the less risky the firm will be and smaller will be the amount available for investment in various investment avenues. Thus, there is an inverse relationship between liquidity and risk of the firm with respect to working capital.

If a firm wants to increase profits by reducing the cost of maintaining liquidity, then it must also bear the risk and if it wants to decrease it, then it should also accept the decreased profitability. Therefore, a tradeoff between risk and return is important for a concern.

Another view of this risk –return tradeoff is in terms of the cost of keeping a certain level of current assets. Like most corporate financial decisions, working capital management also considers the decisions regarding cost. i.e. cost of liquidity and illiquidity. The cost of high investment in current assets which is low rates of return on idle current assets and it increases with the level of current assets. On the other hand, the cost of illiquidity is the cost of holding insufficient current assets which will adversely affect the goodwill of the firm as it will face difficulty in obtaining credit. Thus, as a finance manager, you have to balance risk and profitability or solvency and profitability by minimizing the cost of liquidity and illiquidity.

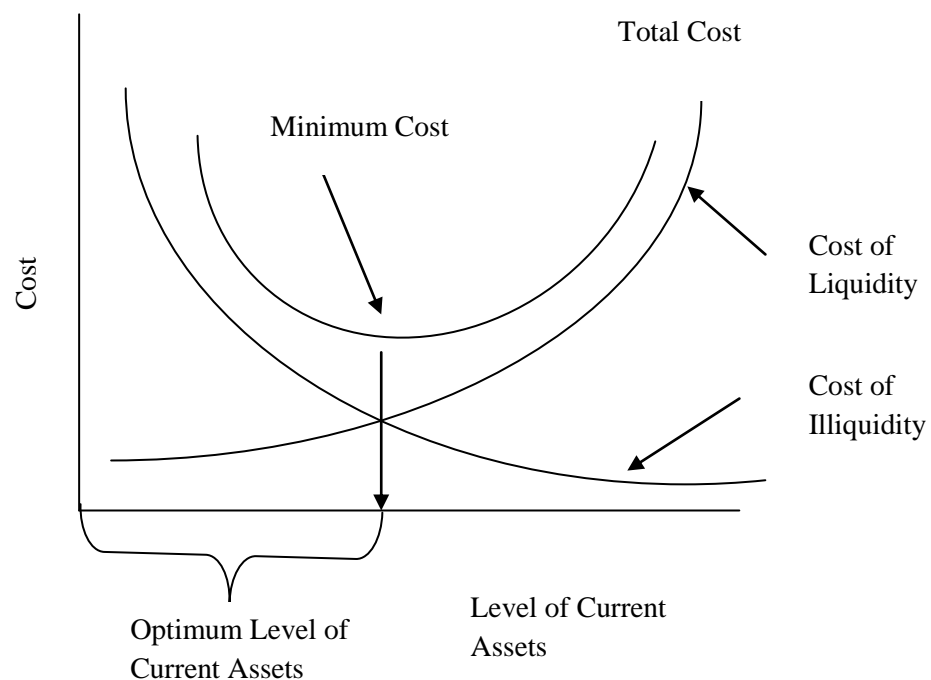


Fig. 15.9 Cost of Liquidity and Illiquidity Trade off

(Source: Pandey I.M. , “ Chapter 27 Principles of Working Capital Management” in Financial Management pp 588)

Figure 15.9 illustrates that when the level of current assets increases, cost of liquidity increases while the cost of illiquidity decreases and on the contrary if the level of current assets decreases, cost of illiquidity increases but cost of liquidity decreases.

15.10 SUMMARY

This unit has introduced us with the conceptual understanding of the various issues involved in working capital management. We learned that the success or failure of a business largely depends on it. This unit also explained that the gross working capital is the total of all current assets employed in the business whereas net working capital is the difference between current assets and current liabilities. We traced and examined that working capital management involves not only managing different components of current assets but also managing the current liabilities in particular financing aspects of current assets. We also witnessed that the how company start with cash and how it goes through the successive stages of the operating cycle before getting cash along with profits. Further, we saw how working capital requirement of a firm are influenced by several factors like nature of business, size of business, seasonality of operations, production policy and market conditions. An attempt has also been made to highlight the methods of calculating the working capital needs of a firm;

these are mainly ratio of sales method, operating cycle method and percentage of total assets method. We also learned that managing short term assets involved minimizing the two major costs i.e. cost of liquidity and illiquidity and the objective of working capital planning and management is to find the optimal tradeoff between these two costs. In the unit, we also looked that the segregation of working capital into permanent and temporary capital is relevant for working capital policy decisions relating to the financing of working capital requirements. Now, in the next unit you will learn about another important aspect of working capital that is Cash Management.



15.11 GLOSSARY

Gross Working Capital: It refers to the firm's investment in total assets or circulating assets.

Net Working Capital: It may be defined as the excess of current assets over current liabilities.

Temporary Working Capital: It is the amount of current assets required over and above the minimum level and this may vary according to the level of activities or operations.

Permanent Working Capital: This is the minimum limit in current assets which is required for enduring the business operations without intrusions.

Operating Cycle: It is the time period required to convert sales after the conversion of resources into inventories and later in cash.

Production Cycle: The cycle commencing from holding of raw material or components and computing with finished goods production is known as 'Production Cycle'.

Cash: The term is generally used for both cash, deposits in bank and marketable securities i.e. assets which are near to cash.

Credit Terms: It refers to the terms under which a firm sells goods on credit to its customers.



15.12 ANSWERS TO CHECK YOUR PROGRESS

Check Your Progress –A

5. c 6. c

7. i) fixed assets , current assets
ii) working capital
iii) raw material, work in progress
8) i) True ii) False iii) True

Check Your Progress –B

- 5, i) d ii) d iii) c
6. a) True
b) True
c) False
d) False



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15.15 TERMINAL QUESTIONS

- Q1. Explain the concept of working capital. How the working capital requirement can be ascertained?
- Q2. Define the term working capital. What factors would you take into consideration, on the formation of a new business, in estimating the amount of working capital requirement?

- Q3. Write a brief note on the significance of adequate working capital.
- Q4. Distinguish between
- a) Operating Cycle and Gross Operating Cycle
 - b) Operating Cycle and Cash Cycle
 - c) Gross Working Capital and Net Working Capital
- Q5. “Why at all we need working capital can we not do without it.” Discuss?
- Q6. ‘Can risk and return tradeoff be maintained by working capital policy’. Comment
- Q7. Write short note on ‘Inventory Conversion Period’.
- Q8. Using imaginary figures how working capital requirements are assessed using operating cycle concept.
- Q9. How do you plan for working capital in your organisation?
- Q10. What is meant by ‘operating cycle concept’ in management of working capital?
- Q11. What are the various components of working capital?
- Q12. How does efficiency of working capital management results to the growth of the firm?
- Q13. Working Capital is the lifeblood and the controlling nerve centre of a business. Comment
- Q14. ‘Liquidity and Profitability are the two faces of a same coin’. Comment
- Q15. Explain how working capital management policies affect the profitability and liquidity of a company. Highlight the strategies and policies which are successful in a company you are familiar with.

15.16 WEB EXERCISES

Go to website of BSE or NSE or SEBI; download the most recent Balance Sheets and Income Statements for any two companies in two different industries of your choice. Also collect information about their financial performance

- i) Using the information you gathered, calculate operating cycle for each company. Identify similarities and differences.
- ii) Carry out a detailed various working capital ratios for the two companies and identify the area where there is need for improving performance.