CHAPTER - IV

THE CONCEPT OF WORKING CAPITAL AND THE ISSUES

IN RELATION TO ITS EFFICIENT MANAGEMENT

It will be recalled that profitability of an enterprises whether it is in the private sector or in the public sector is measured by:

\[
\frac{\text{Net Profit}}{\text{Capital employed}} = \frac{\text{Net Profit}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Capital employed}}
\]

when capital employed is construed as fixed capital plus net working capital. On the basis of this definition of capital employed, the second part of the ratio becomes:

\[
\frac{\text{Sales}}{\text{Fixed Capital} + \text{Net Working Capital}}
\]

Scope of increasing efficiency of fixed capital is limited as one of the major factors is technological changes and their adoption which is slow to occur. Therefore, profitability of an enterprise, depends largely upon efficient management of its working capital. The first part of the ratio is \[\frac{\text{Net Profit}}{\text{Sales}}\]. This can be represented as \[\frac{\text{Sales} - \text{Cost of Sales}}{\text{Sales}}\] presuming that there is no other expenses. This ratio can be increased either by increasing sales or by reducing cost of sales. When
Increase in sales is associated with increase in variable costs requiring deployment of working capital, reduction of cost of sales is possible through an efficient management of working capital. Hence, it becomes crystal clear that management of working capital has an important bearing on the profitability of an enterprise.

Before proceeding further, it would, therefore be logical to examine the concept of working capital and the various issues involved with its management.

Conceptually, working capital represents that portion of the total financial or passive capital of a firm which is deployed for financing its day-to-day operations. To be more precise, working capital of a firm stands for the funds that remain invested to keep it moving without any stoppage of its operating cycle, starting right from the purchase of raw materials to the realisation of cash from the sale of its products. Hence, it may be considered as that segment of the firms' total capital which is employed in short term operations\(^1\). It has been referred to as 'Circulating Capital' by C.W. Gersternberg\(^2\). According to

Hastings, Paul, G. the term working capital is synonymous to short term funds\(^3\).

Professor Ralph D. Keneddy and Stewart Y. Mc Mullen defined working capital as the excess of current assets over current liabilities, i.e. the assets that have been supplied by the long-term creditors and the stock-holders\(^4\). In other words, working capital represents the amount of current assets that have not been supplied by current and short-term creditors. This view has also been endorsed by Professor J. Fred Weston and E.F. Brighan\(^5\). Professor H.G. Guthmann also viewed working capital as the excess of current assets over current liabilities\(^6\).

In the definition of working capital so far given, it seems that whole issue has been considered from the financial viewpoint, i.e. with reference to the sources of finance. Accordingly, working capital has been taken to be long-term financial sources deployed to finance the current assets in excess of what could be financed by current liabilities. This concept of working capital is also known as Net concept of

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working capital representing its qualitative aspect. And in favor of considering working capital in its net concept it is argued that (a) in the long run what matters is the surplus of current assets over current liabilities; (b) it is this concept which helps creditors and investors to judge the financial soundness of the enterprises; (c) what can always be relied upon to meet the contingencies is the excess of current assets over current liabilities since this amount is not to be returned, and (d) this definition helps to find out the correct financial position of companies having the same amount of current assets.

In this connection, it may be pointed out that the net working capital may be positive or negative. Excess of current assets over current liabilities produces a positive net working capital while excess of current liabilities over current assets gives rise to negative net working capital. A positive working capital denotes that amount available from current liabilities was not adequate enough to take care of current assets. A portion of current asset had, therefore, to be financed from long term sources. A negative working capital denotes that sources available from current liabilities were adequate enough to acquire the current assets and a portion of funds available from short term sources have been used to finance long term fixed assets.

But the economists like Mead, Mallot, Barker and Field are of the opinion that working capital should be considered from the application side of the funds raised to finance capital requirements of a firm. Accordingly working capital should be taken to mean the total of the investment in the current assets of a firm.

This concept of working capital is known as gross concept of working capital representing its quantitative aspect. Those who support this view of working capital argue that it is not only the excess of current assets over current liabilities that contributes to the profitability of the firm. It is rather the entire current assets that contributes to profitability. As such, management should be more concerned with the total current asset as they constitute the total resources available for operational purposes.

There is still another concept of working capital. It is the refinement of net concept. It views working capital as a pool of current funds from where all the operating expenses are met. This may perhaps be described as Cash Working Capital. With reference to time span of the use of working capital.

capital, Working capital again admits three fold classification viz, permanent or regular Working capital, seasonal or variable Working capital and precautionary Working capital. The first type refers to minimum amount of Working capital needed to keep the current assets of a firm in circulating so that its operating cycle is not interrupted in any way. This permanent or regular Working capital of a firm has been given the epithet of 'Core' Working capital in the report of the study group appointed by the Reserve Bank of India to frame guidelines for follow up of Bank Credit which is popularly known as Tandon Committee.11 The second one takes into account the amount of Working capital required by a firm to meet its seasonal fluctuations in demands. This type of Working capital predominates in the industries having seasonality in their activities, such as sugar, tea, coffee, tobacco industries etc. The third one is essentially a shock absorber. It is the outcome of the desire to provide a 'cushion' on Working capital to withstand the shocks that may result from the sudden decline in the value of any component of Gross Working Capital, especially inventory.12

In the current literature on Financial Management, this necessity for Working capital is sought to be explained with reference to what is known as operating cycle illustrated 

11. S.N. Saha, op.cit., p.3. 
12. S.N. Saha - ibid.
in Chart I that follows. Normally, the longer is the cycle the greater is the requirement of working capital.

The cyclical flow showed in Chart I is in a very simplified form though it has an extensive use due to the fact of being able to make the sense of an operating cycle clear in simple situations. But in reality, the business situation is not as simple and smooth going as appearing in Chart I. The complexities of business operations calling for investment in working capital can, perhaps, be best exhibited with the help of Cohen-Robins Chart\(^\text{13}\) with slight modification present in Chart 2 that follows.

The cycle repeats itself again and again. Consequently the enterprise values involve a series of transformations or change of forms as they move through the cash-to-cash path. Thus, the more and more the cycle moves, the less and less amount of working capital needs. That is why the volume of working capital is basically dependent upon its turnover.

Working capital has to be adequate i.e., neither in excess nor inadequate. Adequacy of working capital is
advocated because:

(i) It enables a concern to operate its business more efficiently, because there is no delay in obtaining raw materials etc.

(ii) It safeguards a business from the adverse effects of diminution in the value of current assets.

(iii) It makes it possible for a business to meet all the current obligations well in time and to take advantage of cash discount.

(iv) There may be a need to offset losses from operation.

(v) There may be a need to offset excessive non-trading and abnormal losses.

(vi) The management may have to present facts to obtain funds from different sources for expansion purposes.

(vii) There may be unnecessary accumulation of inventories.

(viii) It enables the concern to hold its own even during a period of business depression.

(ix) It enables a concern to extend favourable credit terms to customers.

(x) There may be a need to counter an unwise dividend policy.

(xi) Working capital funds may be invested in non-current assets.

(xii) The management may fail to accumulate funds for the redemption
of debentures. Incidentally, it may be mentioned that long term debts such as debentures becomes a part of current liabilities in the year of maturity.

Working capital of a firm become inadequate for reasons such as (i) shortage of liquid fund, (ii) no or under investment in marketable securities, (iii) under investment in receivables (iv) underinvestment in inventory.

If Working Capital becomes inadequate it cannot but have effect on the working of the firm. In particular it will cause (i) low liquidity; (ii) low profitability; and (iii) under-utilisation of production capacity.

When actual investment in working capital is more than the actually required amount, it is termed as an excess Working Capital. A business house may have excess Working Capital mainly due to the following reasons:

(i) Over-investment in inventory
(ii) Over-investment in receivables
(iii) Excess idle cash
(iv) Over-investment in marketable securities

Excess Working Capital is undesired as it causes unnecessary cost in respect of funds that cannot be effectively used and impairs both the liquidity and profitability.

position of a firm.

Determinants of Working Capital:

The requirement of Working Capital varies industry-wise, company-wise and also time-wise. The amount of Working Capital required by a business enterprise, may be grouped under two broad heads, viz, (i) External factors and (ii) Internal factors.

Conceptually the factors which are within the control and competence of management are called internal factors and those beyond the control of management are external factors. While the internal factors include risk of management, turnover of receivable and inventories, terms of purchase and sales credit rating etc., the external factors consist of nature of business, volume of production and sales and business cycle.\textsuperscript{15}

Internal Factors:

If the management of a firm can operate with a little amount of investment in Working Capital, the scope of earning profit becomes greater. But any effort to minimise investment in Working Capital must not lead to its inadequacy. Hence in the

determination of quantum of investment, the management has to be cautious. Since slight complacency in this regard may be risky. In this respect working capital leverage analysis and the application of modern techniques in working capital forecasting may be very much helpful.

As the volume of business expands, the quantum of working capital needed for the business goes up. But there is all likelihood that it may not be exactly in the same proportion to the growth of the business. It is possible that with the expansion of the volume of business, the requirement of working capital may go up or may even go down, depending upon the efficiency of management. Thus, the requirement of working capital may not be directly related to the volume of business, rather it depends upon the turnover of receivables and inventories. The turnover rates also influence the investment in working capital. The greater the number of times the inventories are sold and replaced i.e., inventory turnover ratio, the lower is the amount of working capital requirements. An effective inventory control therefore help minimising the amount, of investment in working capital.

Time taken in conversion of receivables into cash i.e., debtors turnover ratio also determines the amount of working capital requirement. If time taken in the collection of receivables becomes short, a firm can do with a very little amount of working capital. Effective control of receivables by wise-administration of
the policies relating to credit extension, terms of sales, business customer relationship and maximum collection, therefore, help to minimize investment in working capital.

The working capital requirement of a business is also affected by the times of purchase and sales. If the terms of credit on which purchases are made are favourable, less cash will remain invested in inventory. If payment for purchase is required within a short time after its delivery, larger amount of cash is needed to a given volume of business. If credits are granted to customers on more liberal terms, a larger amount of working capital will remain in the form of receivables.

Credit standing that a business enterprise build up in the world of business also determines the amount of working capital required. The management of working capital in an enterprise takes into account its own credit rating in respect of borrowing at a short notice. A firm with a high credit rating is required to have lesser working capital (Net) than the requirement of the firm with lower credit rating.

**External Factors:**

Among the external factors influencing the volume of investment in working capital the most important one is the nature of business. Public utilities for instance have the lowest requirements for current assets partly because of the cash nature
of their business and partly because their investments in inventories and receivable are rapidly converted into cash. Investment in inventories remain negligible and receivables are also collected usually within 10 to 15 days after the customers have been billed. As such, there is regular cash flow in public activities requiring little investment for providing working finance.

As against this any industrial enterprise has the problem of larger investment of capital in inventories and receivable due to various factors. As such an industrial enterprises require the larger amount of working capital.

The amount of working capital is also directly related to the time taken in the manufacturing process of an enterprise. The larger the time required for manufacture of the goods or the longer time required to obtain the goods, the larger is the amount of working capital. The reason is that a larger amount of inventory remains tied up in its manufacture. A distillery which has an aging process has to make particularly heavy investment in inventory. The other extreme is provided by bread baking units. These units sell their products daily and, therefore, notwithstanding their high percentage of investment in working capital, the actual working capital may not be very large.

The range of products also influence the requirements of working capital. It is possible for a single product
enterprises to operate on a lower working capital then the enterprises with a wide variety of products.

**Business Cycle**

Time taken in the manufacturing process, range of products, besides the nature of business, cyclical and seasonal changes also influence the size and behaviour of working capital. There is usually a need for larger amount of working capital to cover the lag between increased sales and receipts. The cyclical and seasonal changes effect the size of working capital through inventory stock. In the periods of prosperity business activity expands and there is a tendency to purchase goods in advance of current needs in order to take advantages of lower prices. But there is no unanimity of views among economists regarding behaviour of inventory during the business cycle. W.C. Mitchell says that stocks move in rough positive conformity with business activity. A few say that business activity depends upon the behaviour of the inventory of finished goods which is determined by credit mechanism and short-term rate of interest. Whatever be the view points, the fact is that the changes in business activity caused either because of cyclical or seasonal variations have a high correlation with the change in inventory stock.

Besides the external and internal factors detailed out, above, there are several other factors such as contingencies, amount of profit earned, depreciation and dividend policies and means of transport and communication etc. which influence the requirements of working capital in a firm. A firm operating in a field which is subjected to wide fluctuations in demand and price for its products or involving rapidly changing technology requires additional working capital to cope with these contingencies. In the firm where the margin of gross profit is larger the chances of recouping working capital pool are also greater. The dividend policy followed by an enterprise also directly affects the availability of cash for meeting the requirements of working capital. The import policy pursued by a firm does affect the requirement of working capital as the enterprise has to arrange funds for importing goods at specified times. If the means of transport and communications are not developed in an economy, the industries have to maintain greater amount of working capital as the industries are to carry larger inventory both in respect of raw materials and finished goods.

**Importance of Working Capital Management in the Field of Finance**

The bearing of efficient working capital management has

already been highlighted. In the field of finance working capital management has emerged as a distinct arena. According to J. Fred Weston and Eugent F. Brigham, this special importance of working capital in the field of financial management is due to the fact that current assets represent more than half the total assets of a business firm. Because they represent such a large investment and because this investment tends to be relatively volatile, current assets management requires careful attention of the Finance Manager.

Secondly, when firms can minimize their investment in fixed assets by renting or leasing plant and equipment, they cannot avoid investment in cash; receivable and inventories. As such current assets management becomes specially significant for the financial manager of any business unit especially for the small firms as the small firms have relatively limited access to the long-term capital markets and as such has to rely heavily on trade credit and short term bank loans, both of which affect net working capital by increasing current liabilities.

Thirdly, relationship between sales growth and the need to finance current asset is close and direct. In view of this direct and close relationship between the growth of sales and finance in current asset investment it is imperative that the financial manager keeps himself aware of developments in the working capital segment of firm.
Management of working capital has two aspects viz, structural and financial. In the structural side of it the problem is essentially one of predicting the precise level of investment in working capital and its optimum allocation among different components of current assets. As to the question what will be the precise level of investment in working capital, Ernest W. Walker pointed out that the quantum of investment in working capital depends first on the management's attitude towards risk and secondly on the factors that influence the amount of cash, inventories, receivables and other current assets components required to support a given volume of output. Risk in this connection refers to risk of not maintaining sufficient level of current assets to meet all financial obligations as they mature and the risk associated with holding of not sufficient current assets to support the proper level of sales.

In this respect, according to Walker, there is a set of guiding principles. The first one of these principles deals with the relation between the level of working capital and sales. It states that if working capital is varied along with the changes in the volume of sales, the amount of risk that a firm assumes also varies. In consequence the opportunity for gain or loss

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increases. In view of this positive relationship between sales and working capital, when the level of working capital in relation to sales decrease, the opportunity for gain (for example, reduced storage cost) from the investment increases but the opportunity for loss also increases and vice versa (may be stock out cost).

It may be pointed out here that while the gain from decreased level of working capital is measurable, the loss that may occur from the decrease in the volume of working capital cannot be measured.\textsuperscript{19}

What is more interesting is that, when decrease of investment in working capital results in gain, the rate of potential gain is initially greater than it is at the later stage but an exactly opposite phenomenon arises when losses arise from the decrease in working capital. A graphical description of this has been attempted overleaf. Since, the interest of the management lies in having a level of investment in working capital which optimises firm's rate of return with reference to risk, the ideal level of working capital investment becomes one that equilibrates return from investment in working capital with the firm's ability to assume risk, a phenomenon which is expressed as risk-return trade off. An increase in the level of investment in working capital decreases no doubt the element of risk but along

\textsuperscript{19} Ibid.
with it there is also the decrease in the possibility of gain or loss. The desired level of investment in working capital, as such is the point at which the incremental loss associated with a decrease in working capital investment becomes greater than the incremental gain associated with decrease in working capital investment.

The second principle associated is concerned with the ideal level of investment in each of the component of working capital. According to this principle investment in each component of working capital may continue so long there is scope to increase the equity base of the firm. It implies that investment in working capital is to contribute to the increase in the net worth of the firm so that the business risk is minimised.

The third principle deals with the risk resulting from the type of capital used to finance current assets. According to this principle, the type of capital used to finance the working capital directly affects the amount of risk that a firm assumes as well as the opportunity for gain or loss and the cost of capital. Generally, the cost of equity capital is greater than the cost of debt capital. An aggressive financial manager assumes higher degree of risks and employs therefore more debt capital to finance working capital since it has favourable effect on the rate of return on equity. But the return on equity by the deployment of borrowed funds for working capital purposes cannot continue
### Table - 14  
Showing the Working Capital Trends in the Selected Five Public Sector Undertakings in West Bengal over the Period Between 1980-81 to 1989-90

($ in lakhs)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Durgapur Project Ltd.</th>
<th>Durgapur Chemicals Ltd.</th>
<th>The Kalyani Spinning Mills Ltd.</th>
<th>West Dinaapur Spinning Mills Ltd.</th>
<th>West Bengal Electronics Industry Development Corporation Ltd.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Actual</td>
<td>Indices (base year 1980-81)</td>
<td>Actual</td>
<td>Indices (base year 1980-81)</td>
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<td>1980-81</td>
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</tr>
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</table>

**Source:** Published Annual Reports of the Companies - Results Computed

**NS** - Denotes 'Not Sale'
and infinitive. It can be increased only up to a certain point since gain from increase in the use of borrowed capital gets overshadowed by the risk associated with such a financing policy.

The best one of the four principles is concerned with the matching of maturities of receivables with the flow of internally generated funds in the interest of solvency and risk associated with the deployment of borrowed capital to finance working capital of a firm. It states that the greater the disparity between the maturities of firm's short term debt instruments and its flow of internally generated funds, the greater the risk and vice versa.

**Working Capital Trend in the**

**Selected Public Sector Undertakings in West Bengal**

Table 14 that follows is the projection of the working capital trend in public sector undertakings in West Bengal selected for the present study. It would be observed from the Table, that barring one company i.e. West Bengal Spinning Mills Ltd., for two successive years, i.e. 1988-89 and 1989-90, in all the other companies the working capital investment demonstrated an increasing trend in relation to its position in base year i.e. 1980-81. What is more significant is that there was no change in the trend even when the working capital (Net) had been in the negative, signifying diversion of funds from short-term sources to take care of
Table - 15: Showing the Original Working Capital and Trend Value of Working Capital in the Selected Five Public Sector Undertakings in West Bengal over the Period Between 1980-81 to 1989-90
(Rs. in lakhs)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Durgapur Project Ltd.</th>
<th>Durgapur Chemicals Ltd.</th>
<th>The Kalyani Spinning Mills Ltd.</th>
<th>West Dinajpur Spinning Mills Ltd.</th>
<th>West Bengal Electronics Industry Development Corporation Ltd.</th>
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</table>

Source: Published Annual Reports of the Companies - Results Computed

N S - Denotes 'Not Sale'
long term requirements of the company thus exposing a company to a high degree of risk. Instances on this point are Durgapur Chemicals Ltd. and The Kalyani Spinning Mills Ltd. In Durgapur Chemicals Ltd., in relation to the base year 1980-81, working capital in a negative direction increased by more than four times. In Kalyani Spinning Mills Ltd., in relation to the same increased by more than four times the base year 1980-81.

Table 15 shows the original and trend values of working capital in the selected companies for the purpose of present exercise. Based on the data available for the present analysis the quantitative tool of least square method has been used to indicate the working capital trend in the selected public sector undertakings under the ownership and control of the Government of West Bengal. It would be observed from the Table that the change in Trend value per X unit i.e., change in working capital per year in all the companies, viz., Durgapur Project Ltd., Durgapur Chemical Ltd., The Kalyani Spinning Mills Ltd., The West Dinajpur Spinning Mills Ltd., and West Bengal Electronics Industry Development Corporation had been Rs.52.27 lakhs, Rs.354.30 lakhs, Rs.202.98 lakhs, Rs.12.84 lakhs, Rs.316.95 lakhs respectively. It would further be observed that the trend value of working capital in all of them differed significantly both in the positive or negative, indicating the scope for improvement in the quantum of working capital investment in these companies.
Technique of Forecasting the Working Capital Requirements:

The traditional approach towards projection of working capital requirements of a firm is the 'Balance Sheet Approach'. Under this method, the working capital requirements is sought to be determined with reference to the gap between current assets and current liabilities. The technique of forecasting working capital requirement of a firm through the 'Balance Sheet Approach' is now criticised on the ground that, it does not indicate the exact position of working capital, as valuation put on some of the current assets items like finished products, work-in-progress, inventories and that on debtors include profit element. Neither depreciation nor profit element in debtors involve any cash payment. Again, Balance Sheet Approach to working capital includes certain non-circulating and non-convertible items like non-moving materials, spares, finished products, many of which become obsolete over a period of time, long standing receivables much of which become unrecoverable, and items of almost permanent nature, like deposits with statutory authorities etc.29. Secondly, working capital derived under this approach indicates, the status of a firm at a particular point of time and does not reflect the movement of value occurring in the same during the entire accounting period. Hence, the traditional "Balance Sheet Approach" to project Working Capital requirements is

now sought to be replaced by a modern approach which goes by the name of 'Operating Cycle Approach' or 'Cash Working Capital Approach'. Unlike, the conventional approach, consistent with the definition, this approach views working capital as a function of the volume of operating expenses. It suggests that actual level of working capital requirements of a firm in a period can be correctly determined only with reference to the length of the net operating cycle and the operating expenses needed for the period. The net duration of operating cycle is equal to the number of days involved in the different stages of operation commencing from purchase of raw materials and ending up with collection of sale proceeds from debtors against which the number of days credit allowed by suppliers are to be adjusted. The number of operating cycle in a period is determined by dividing the number of days in the same by the length of net operating cycle. Once the number of operating cycle has been determined, the actual working capital requirements is then arrived at by dividing the total operating expenses for the period by the number of operating cycle in that period.

The methodology of computation of the length of operating cycle and the actual working capital requirements thereunder, will, therefore, be as follows:

(a) Method of computation:

(1) Material consumed during the year
(ii) Average consumption per day = \( \frac{v}{365} \)

(iii) Average Material inventory during the period = PI

(iv) Number of days consumption in stock = IP \( \div \frac{v}{365} \)

(b) **Length of Conversion Period** :

This shows the average length of production cycle.

**Method of computation** :

(i) Cost of finished goods manufactured during the year = opening work-in-progress + Material consumed + wages + Manufacturing expenses - closing stock in progress = M

(ii) Average cut of finished goods manufactured per days \( \frac{M}{365} \)

(iii) Average work in progress during the year = L

(c) **Length of Finished Goods Inventory Period** :

This is the period for which finished goods are held in godown before sold to customer.

**Method of Computation**

(i) Cost of finished goods sold during the year = opening stock of finished goods (cost of finished goods mentioned during the year + Administration expenses + Selling expenses) - closing stock of finished goods = S
(ii) Average cost of finished goods sold = \( \frac{5}{365} \)

(iii) Average finished goods inventory during the year = 0

(iv) Average finished goods inventory period = 0 \( \div \) \( \frac{5}{365} \)

(d) **Length of Collection Period**;

This shows the average time taken in realisation of sale proceeds from the customers.

**Method of Computation**;

(i) Total credit sale during the year = \( x \)

(ii) Average daily credit sales during the year = \( \frac{x}{365} \)

(iii) Average Debtors balance = \( D \)

(iv) Average collection period = \( D \div \frac{x}{365} \)

(e) **Length of Credit Pay-off Period**;

This represents the time taken on an average to pay the credit allowed by suppliers.

**Method of Computation**;

(i) Total credit purchase during the year = \( P \)

(ii) Average credit purchases day = \( \frac{P}{365} \)

(iii) Average credit balance = \( C \)

(iv) Average credit period allowed by supplier = \( C \div \frac{P}{365} \)

Now the length of net operating cycle, \( T \)

\[
T = I \div \frac{X}{365} + L \div \frac{M}{365} + O \div \frac{S}{365} + D \div \frac{X}{365} + C \div \frac{P}{365}
\]
Once the length of operating cycle has been formed out, number of operating cycle \( N \) per annum is then ascertained as under:

\[
\frac{365}{T}
\]

And the actual working capital requirements of a firm becomes:

\[
\frac{\text{Total Operating Expenses}}{N}
\]

Regression Analysis Method:

The regression analysis method, in the sphere of working capital management helps in making projection of working capital requirements after establishing the average relationship between Sales and Working Capital and its various components over the past years. The analysis can be carried out through the graphic portrayals such as scatter diagrams or through mathematical formula.\(^{20}\)

The relationship between sales and working capital may be simple and direct, indicating complete linearity. It may be complex in different degrees involving simple linear regression or simple curvilinear regression and multiple regression situations. This method is suitable for simple as well as complex situations.

Working Capital Estimating Processes
in the Five Selected Public Sector
Undertakings in West Bengal and
Their Appraisal:

It has already been stated that the forecast for working capital requirements may be made on the basis of any one of the following - (i) 'Balance Sheet Approach' (ii) Operating Cycle Approach, (iii) Regression Analysis Method. Out of these three methods the first one is static, the second one is based on the actual cash requirements for working capital finance as such also known as Cash Working Capital and the last one is statistical. In practice, though the first approach is widely used now it is the second and third approaches which are increasingly becoming popular as these are considered to have the advantage of eliminating the factor which taint the working capital forecast under the first method namely the 'Balance Sheet Approach'.

The present study on the basis of selected sample companies reveal that none of the companies under study did use either the Operating Cycle Approach or the Regression analysis method for estimating their working capital requirements. The only method that these companies did use for forecasting their Working Capital requirement is the Balance Sheet Approach. So far as the management of Working Capital was concerned, this
Table - 16: Showing the Position of Working Capital in the Selected Five Sample Companies
Under Balance Sheet Approach over the Period Between 1980-81 and 1989-90

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<td>55.20(42158.83-)</td>
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Source: Published Annual Reports of the Companies - Results Computed
NS - Denotes 'Not Sale'
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<th>West Dinaapur Spinning Mills Ltd.</th>
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Source: Published Annual Reports of the Companies - Results Computed

NS = Denotes 'Not Sale'
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<td>Estimate</td>
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Calculated values of Chi-square: -553.23, -76.86, -23.82, -6.63, 29.85

Source: Published Annual Reports of the Companies - Result computed
NS - Denotes 'Not Sale'
could not but have a number of consequences, could be seen in Table 16, 17 and 18 that follow. First among them had been that in some companies the total of current liabilities exceeded the total of current assets signifying the employment or use of the very risky short-term funds to finance the fixed and other assets of the Company. Instances on the point are Durgapur Chemicals Ltd., and Kalyani Spinning Mills Ltd. The total of current liabilities in these companies exceeded the total of current assets in all the years under review. Similar position did also prevail in Durgapur Project Ltd., in the year 1985-86 and 1986-87. Another important consequence that did follow from the use of Balance Sheet Approach for working capital forecast had been the overinvestment in the working capital to the peril of their cost of funds and profitability. The extent of overinvestment in Working Capital, as could be observed from Table 16 and Table 17 in which working capital requirements in the sample companies on the basis of Operating Cycle Approach and Regression Analysis methods have been projected. Table 18 is the projection of Working Capital requirements in the selected Public Sector Undertakings in West Bengal by the actual and estimates application of Regression Analysis method. It would be observed from the Table that the least square equation in respect of Durgapur Chemicals Ltd., The Kalyani Spinning Mills Ltd. and West Dinajpur Spinning Mills Ltd., satisfied the test of 'goodness of fit' since the calculated value of chi-square are less than the permissible
The working capital estimates made on the basis of the equation fitted could be considered dependable and the deviation of the actual amount of working capital from the corresponding estimated amount could be taken to indicate either over or under investment in working capital. Judged by this criteria, it could be observed that working capital investment in these three companies in most of the years exceeded the actual requirements though there had been instances of under investment in the same in same years also whereas it was overinvestment or underinvestment it could safely concluded that investment in working capital in the aforesaid these companies. Companies had not been optimum one. In respect of two other companies namely, Durgapur Project Ltd., and West Bengal Electronics Industry Development Corporation Ltd., chi-square value exceeded the Table values in a significant manner. It is, therefore, doubtful whether any comment could be made about over-investment and under-investment in working capital in these companies by the application of the statistical tool of Regression Analysis Method.

From the discussions so far made and so far as the sample study revealed that it is obvious that at present there is hardly any exercise in the Public Sector Undertakings under the ownership and control of the State of West Bengal to estimate their working capital requirements on a rational basis. As such
one may be tempted to conclude that much of the profitability crises in the public sector undertakings under the ownership and control of the State Government is due to inability of the firms to optimise their investment in Working Capital Management through proper forecasting of the working capital requirement of these companies.