

Managing Working Capital Requirement *by* C.B. GUPTA

The management of working capital refers, broadly speaking, to (i) the determination of its size and the sources from which it is obtained and (ii) its effective utilisation. If the size of the working capital is increased or decreased in relation to a firm's fixed capital without any change in its level of production the firm's profitability is affected. Likewise, if the turnover of the working capital is decreased through an interruption in the flow of funds generated by the movement of the working capital through various business processes the rate of return on investment is decreased. Furthermore, if there is a lack of a proper balance between the various sources from which funds have been raised for investment in current assets, or if the repayment dates of these funds are not properly staggered the continuance of the business itself may become doubtful. Thus the management of working capital determines to a large extent not only a firm's profitability but also its continuance as a business enterprise. The purpose of this paper is first, to state certain concepts which are essential to this management process; second, to describe principles which are relevant in the determination of size and sources of working capital; and third, to discuss techniques which are used in controlling its size and effective utilisation.

Concepts of Working Capital

The term 'working capital' is used to connote two different aggregates: (1) the excess of current assets over current liabilities called the 'net' concept of working capital and (2) the total of all current assets or the 'gross' concept of working capital. Even though both these concepts are generally accepted their usefulness depends upon the purpose of the study.* Thus if it is desired to study the size or variation in the long term component of the working capital it is the net concept which has to be used, as is done in fund's flow analysis. But if a decision has to be taken about the size of investment in inventories, receivables or cash which may be most conducive to the productive process it is the gross concept which alone is relevant. Obviously it is this latter concept that has been used in this paper.

* cf. Brandt, Louis K., "Business Finance, A Management Approach" (1965), p. 345.

Determination of the size and sources of working capital.

The main determinants of the size of investment in working capital are : first, the management's attitude towards risk, and second, other factors influencing investment in cash, inventories, and receivables for a given level of output.

Influence of risk :—It is a generally accepted principle that greater the risk a management is prepared to undertake, greater shall be the opportunity for profit or loss to increase. In the area of working capital management risk implies operating with a lesser amount of current assets than are indicated by a given level of the firm's operational activity, or not ensuring proper liquidity, i. e., not being in a position to meet all financial obligations as and when they arise. Thus, if a management decides to operate with a lesser amount of working capital in relation to its level of production, it is carrying greater risk and there is greater opportunity for its profit or loss to increase. This assumes that there is an optimum size of working capital requirement for any given level of production. That is to say the amount of cash or lines of credit to meet all obligations as they occur, the size of inventories to assure economies of purchasing, production and sales, and the amount of receivables have a definite relationship with the level of a firm's activities. But in view of the uncertain business conditions their precise determination is not possible and as such management cannot achieve perfection in planning their working capital requirements. Predictions about sales volume may vary widely from the actual and consequently investment in working capital may become too large or too small in relation to operational activity of the firm. With a view to ensure maximum customer service and avoid loss of sales most managers try to have more investment in current assets than is indicated by their estimates. That is their attitude towards risk is negative and they reduce the opportunity of increasing their gains (or losses). A more enterprising management may opt for greater risk by keeping its investment very near the estimated optimum level and thus increase the chance of a higher rate of return on their investment.

It may be noted that a variation in the size of the working capital in relation to fixed capital has a more pronounced effect on the rate of return in those industries where the investment in current assets is relatively more than in fixed assets. This means that certain industries, for example, chemicals or retail trade have more to gain or lose by taking more risk and by following aggressive working capital policies than certain other industries like steel and automobiles. As such the managers should determine whether they operate in businesses which react favourably to changes in working capital levels. If this is not done, the gains

realised may not be commensurate with the risk assumed when the working capital is decreased.

So far we have been considering the effect of management's attitude towards risks associated with the size of working capital. Now we propose to show that managerial decisions as regards the methods of financing current assets also indicate the extent of risk which a management assumes.

Of the two methods of financing current assets debt capital is more risky than equity capital for the simple reason that while bargaining for the former the firm makes certain commitments, the failure to honour which may lead it into liquidation. As such if the management desires to reduce risks of this nature it could always go in for equity capital. But in so doing the opportunity for higher gains to its shareholders which arise as a result of leverage would be totally eliminated. As against this if the management desires to bargain for a higher rate of return even though it has to assume greater risk it would make use of the debt capital. A policy that concentrates on one source only and precludes the other, or makes an excessive use of anyone of these is not sound. The correct approach would be to strike a proper balance between these two—the debt capital should be very near the optimum risk that a firm can assume. A reasonably good measure of this optimum may be obtained by relating the periodic cash burden of the debt to the projected net cash flows. This leads to another rule which should be observed to ensure the solvency of the firm; the maturity of the various contracted debts should be so staggered that they fall when internally generated funds are available for their repayment. A lack of synchronization between the repayment dates and the availability of cash would tantamount to going in for risk without any opportunity for gain.

Other factors influencing the size of working capital—

For a given level of output it has been stated earlier there is an ideal or optimum size at which working capital should be maintained. The determination of this optimum level depends upon several factors: namely the credit status of the firm, the nature of the industry, the location of the plant, the percentage of installed capacity at which it is working and the prevalent trade practices in respect to the firm. How these factors affect the decision with regard to some important components of working capital is the theme of the following discussion.

Cash—The availability of adequate cash to meet firm's recurring financial obligations is one of the basic tests of sound management. What is 'adequate' depends largely upon the credit status of the firm. If it enjoys a reputation of being sound in its financial dealings it may, besides obtaining its supplies on credit, have lines of credit with financial

institutions who would come forward to supply the required amount of cash and in that way adequate cash would mean a considerably smaller amount than in the case of another firm having the same level of activity but not enjoying good credit worthiness.

It also depends on the manner in which the management synchronizes the maturity of its receivables with the dates on which the payments are to be made to trade creditors and for other obligations. If the outward and inward flows of cash are properly co-ordinated, the requirement of cash reserve would be considerably reduced. This co-ordination procedure is facilitated by a cash budget which is a financial counterpart of the sales, production and other budgets.

There is yet another factor which a financial executive has to consider in determining an optimum level of cash reserve. It is the yardstick that the financial analyst adopts for judging the short-term solvency of firms in respect of a particular line of business. In other words the ratio between cash and current liabilities that is considered safe in terms of sophisticated standards used in financial analysis for firms engaged in a certain industry is a factor which cannot be ignored and the cash reserves are largely conditioned by it.

*High level
customer
service
↑
Costs
↑
Direct
& indirect
balance*

Inventory—The determination of the optimum level of inventories is more complicated in as much as it is influenced by several variables pulling in opposite directions. A high level of customer service indicates larger inventory but the costs involved increase (though not necessarily in the same proportion) as its size becomes larger. The function of the management is to strike a balance between these opposing forces so that maximum return on investment may be obtained. To do this several factors have to be considered: first, the nature of business determines the minimum quantity which has to be carried as inventory if the firm is to continue. A small retailer who can obtain his merchandise every morning from the suppliers situated near at hand without sacrificing any ordering or transport economies may not carry any inventories. But if it is a manufacturing firm a certain minimum quantity as indicated by time duration required for the manufacturing process has to be carried. Thus if a firm manufactures 50 units a day of a certain product which quantity also represents its daily sales and if the manufacturing process takes six days, the minimum quantity of inventory that has to be maintained is 300 units in different stages of manufacture.

Another factor is the location of plant as regards the sources of supplies. If the replenishment of inventory involves ordering, transport and other costs another determinant of optimum size comes in the decision making process. In such a situation, the management has to decide about the lot size of the order which may be most economical to the firm. This is

done by an analysis of the different costs likely to be incurred (including inventory carrying cost) for orders of varying sizes. Once the economic lot size of the order is determined, one half of it is the average inventory which the firm has decided to maintain over and above the quantity indicated in the preceding paragraph.

The foregoing discussion has assumed a state of absolute certainty with regard to availability of supplies, the lead time, the smooth working of the plant and the sales. But this is not always so. Breakdowns do occur in supply lines as also in the production process and the sales programme. With a view to maintain a continuity in customer service some extra quantity is carried as safety stock. What this extra quantity is to be, again depends upon the management's attitude towards risk. Several instances may be cited where firms obtained as large supplies as they possibly could for fear of its non-availability or a rise in prices in future.

Third, the accounting system is also a determinant of the size of investment in inventories. In a period of rising prices the choice between LIFO and FIFO methods of valuing inventories reduces or increases, as the case may be, its book value.

Receivables—The size of investment in receivables is influenced largely by two factors : first, the trade practice in respect of terms of credit sales followed by firms engaged in the industry in that particular area and second, the degree of risk assumed.

Since the period for which credit is granted involves the investment of funds, a credit manager would like to reduce the duration of credit for in so doing he would be able to increase the turnover of working capital and ensure a higher rate of return on his investment. He would, if he possibly can, eliminate credit sales altogether. But if the firm has to be in business it shall have to offer the same credit terms as other firms in the same line are doing. For an industry the credit terms are usually governed by two factors: namely (1) the nature of the product and (2) the rate at which the product moves through various production and distribution processes. As a general rule, products that are closest to raw material are sold on shortest credit duration. Likewise, the faster a product moves through various production stages and distribution channels the shorter shall be the credit duration. This is so because the level of production can be quickly adjusted to the market conditions and excessive stock of finished product which usually necessitates liberal credit terms would be avoided.

The degree of risk assumed depends upon the paying practices of the firms to whom the credit is extended. If a credit sale is made to a firm which is not prompt in meeting its obligations or in other words

is a poor risk, the chances are that the turnover of investment in receivables would be reduced and the rate of return would consequently be lowered. That is why the credit manager would always try to have trading relations with firms which are good risk. But there may be certain factors which favour the assumption of risk of a higher degree: First, if the firm is operating at a low level of its installed capacity the increase in production brought about by assumption of poor risk reduces cost of production and in that way more than makes up for the decreased turnover of the working capital. Second, a firm having a high margin of profit can assume poor risk with a view to maximise its gain. Third, acceptance of poor risk may be helpful in improving the competitive position of the firm. On the other hand, if the cash position of a firm is not very sound or if it enjoys a monopolistic position it would abstain from accepting doubtful parties as its customers.

Control of Working Capital

Control in this context means a process whereby management may be able to ensure that the investment in current assets does not significantly deviate from estimated optimum levels of investment in cash, inventories and receivables. As such planning of working capital requirement is not only a prerequisite but an essential part of the control technique.

The other part consists of certain methods whereby it may be ascertained as to whether the actual investments are in conformity with estimated sizes, deviations, if any, analysed, and the operating personnel educated as to the manner in which such unhealthy trends may be avoided. These methods may be broadly classified as: 1) periodic comparisons with budgeted estimates, and 2) analysis of variations.

Periodic Comparisons:—It has already been stated that an effective control requires establishment of norms for each component of working capital. In case of cash, it is the cash budget which gives management's idea of its optimum level. If periodic comparisons of these with actual cash position as shown by cash or bank accounts is undertaken as a routine matter the effectiveness or otherwise of the cash plan would be regularly ascertained.

Inventories of a firm consist mainly of raw materials, work in process and finished products. Management decision about its norm is as such embodied in three different budgets, that is, a materials budget, a production budget and a sales budget. Even though these are mutually dependant and constitute complementary parts of the production and sales plans of the firm, this sort of breakdown is helpful in pinpointing which inventory component is responsible for how much deviation bet-

ween the actual and the estimated size of the investment in inventories. Since production and sales are continuous processes and the stock of materials and finished products is continuously depleted and replenished, there are bound to be rapid variations in the size of the inventory investment rendering the comparison technique somewhat less meaningful. To meet this there is a built-in device, commonly known as maximum and minimum limits, in the budget, which provides a range of sizes with which comparisons are to be made.

In the area of receivables also the predetermined norm provides a basis for useful comparisons with actual investments.

Another method commonly used for this purpose is the computation of certain relationships commonly known as 'turnover rates'. Thus the ratio which the cost of sales over a period bears to the cost of average inventory during that period (inventory turnover rate) indicates how effectively investment in inventories has been utilized. Though a high ratio apparently signifies a high level of managerial efficiency, it may not always be 'ideal' for maximum profitability. What is 'ideal' is determined by management's attitude towards risk and is the basis used in the framing of inventory budget. Similarly the ratio which the firm's receivable bears to the average daily sales indicates whether the collection department is moving in step with the credit policy of the firm.

Analysis of Variations :—The knowledge of the actual investment in the current assets being larger or smaller is not, by itself, very helpful to the management in its control function. But the determination of factors leading to this situation is a necessary step towards their avoidance. A careful scrutiny of the list of receivables may indicate either the ineffectiveness of the collection department or sales to parties who are poor risks and whom the credit department has approved without any justification. This would be helpful in taking corrective action. In the same manner a penetrating study of the various components of the inventory would indicate, 1) If the sales department is not procuring the budgeted sale or the production department is turning out more than scheduled in the given time, 2) Whether the purchase department is coordinating its activities with the production and sales department. The answers to these queries would bring out the causes of the variations and would enable the financial executive to correct the imbalance.

Since there exists a close relation between cash, inventories and receivables, a malfunctioning in one of the latter two components of working capital is likely to have repercussions on cash also. An ineffective collection department not only leads to greater investment in receivables but also reduces the available supply of cash. Likewise a lack of

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coordination between purchase, production and sales departments leading to larger or smaller inventories would be reflected in the firm's bank-balance and receivables. Thus it comes about that remedial actions which are directed to adjust the size of receivables and inventories would go a long way in correcting the cash position also.

SUMMARY AND CONCLUSIONS

- a good article*
- (1) A study of the 'problems of managing individual current assets in day-to-day operations' from the management angle would best be undertaken by a 'gross' approach to working capital. 'Gross working capital' implies the aggregation of all current assets.
 - (2) There is an optimum size of working capital relatable to a level of operations. Risk is increased when investment approaches near to the optimum and an outcome of this is a step-up in the rate of return. An optimal blending together of the sources of current finance via leverage benefits may further improve the rate of return. But while attempting to achieve the latter the periodic cash burden of the debt should be related to the projected net cash flows.
 - (3) An optimum working capital level involves a determination of optima for the various components configured into the aggregate 'working capital'. Thus, the *optimum level of cash reserve* is affected, inter alia, by the firm's credit status, the dovetailing of outward and inward cash flows, and the solvency ratio. An *optimum inventory size* is a more difficult objective to realise and a more elusive term as well. Here, a systematic excursion over a wide and variegated complex of mutually conflicting factors has to be undertaken. The nature of the business, proximity to sources of supply, the levels of economic lot sizes, the break-downs and interruptions in the sales-supply-manufacturing process and the consequent need to build cushion stocks (buffer), and the accounting systems are the more important influences over inventory levels. The *size of investment in receivables* is broadly a dependent variable of credit terms and degree of risk assumed by the firm. Credit terms, in their turn, are affected by the nature of the product and the fast or slow movement of the product through the production and distribution processes. Higher (or poor) risks could be assumed by a firm which operates under conditions of idle plant capacity, intense inter-firm competition, or a high margin of profit. As against this, where unsound cash position or monopolistic control situations are indicated, doubtful receivables may virtually be foreclosed.

—C. B. Gupta