CHAPTER

21

International Working Capital Management

Learning Objectives

MNCs attach great significance to the working capital management at the international level that helps them lower the operating cost and maintain adequate liquidity. The present chapter discusses the issues concerned with the international working capital management. In particular, it is:

- To refer to the basics of working capital policy and the complexities arising in case of international working capital management.
- To discuss how funds move intra-firm when the host governments impose restrictions on the outflow of funds.
- To analyse the different steps in the international cash management.
- To detail the issues concerning the investment of surplus cash, if any.
- To discuss the management of intra-firm and inter-firm receivables.
- To explain how inventory is managed at the international level.

Multinational enterprises raise funds not only for financing the fixed assets but also for financing the current assets so as to help start and maintain operation. This chapter, therefore, discusses the management of current assets or working capital in multinational firms spread over different countries. In the beginning, it will refer to the very concept of working capital; and then, it will deal with the management of different segments of the current assets.

WORKING CAPITAL POLICY

The Concept

Working capital refers to investment in current assets—the assets that are normally convertible into cash within one accounting year. The current assets are:

1. Cash
2. Near-cash assets, such as short-term marketable securities
3. Bill receivables
4. Inventory including raw material, semi-finished goods and finished goods.

The firm's current assets are known as *circulating assets* because the value represented by these assets circulates among themselves. Cash is used for buying raw material. Raw material is processed into finished goods. Finished goods are sold usually on credit that creates bill receivables. When the bills are honoured, the bill receivables are translated into cash. The cycle is thus complete. Similar cycles go on till the firm is in operation.

Gross working capital means current asset. Net working capital is current assets minus current liabilities.

Working capital is often denoted in two ways. One is the *gross working capital* which is the sum of different current assets. The other is the *net working capital* which means current assets minus current liabilities. Current liabilities or short-term liabilities, or the sources of short-term funds, have already been discussed. Hence the discussion in this chapter will be related primarily to the management of current assets.

Before discussing about the management of various current assets, it is worthwhile to mention some of the major objectives of working capital management. *One objective is to determine the optimal size of current assets*. If the size is more than optimal, liquidity will be greater but profitability will be eroded insofar as part of the current assets will remain unutilised. If it is less than optimal, the operation will be affected for want of required current assets. This means it is the trade-off between liquidity and profitability that helps determine the size of current assets.

The other objective of working capital management is to see that there should be an optimal mix of long-term and short-term funds meant for financing the current assets. Long-term funds are liquid as compared to short-term funds but they involve greater cost. So again, it is the question of a perfect trade-off between profitability and liquidity.

In international working capital management when the current assets move across the border, there are many factors that influence their value. Changes in the exchange rate, changes in the inflation rate, exchange control mechanisms, and the political scenario in different countries are some of these important factors. The international manager has to see that the cost of holding the current assets is minimum on these counts without jeopardizing liquidity.

Here it would not be out of place to refer to a study conducted by Gentry, et al. (1979) in which 579 top executives working in different countries have been surveyed. The survey reveals that the most important objective of working capital management has been to support the expected sales. The objective has also been to minimise both the investment in current assets and the cost of short-term funds. In some cases, the objective has been to provide a financial cushion to absorb fluctuation in production and sales.

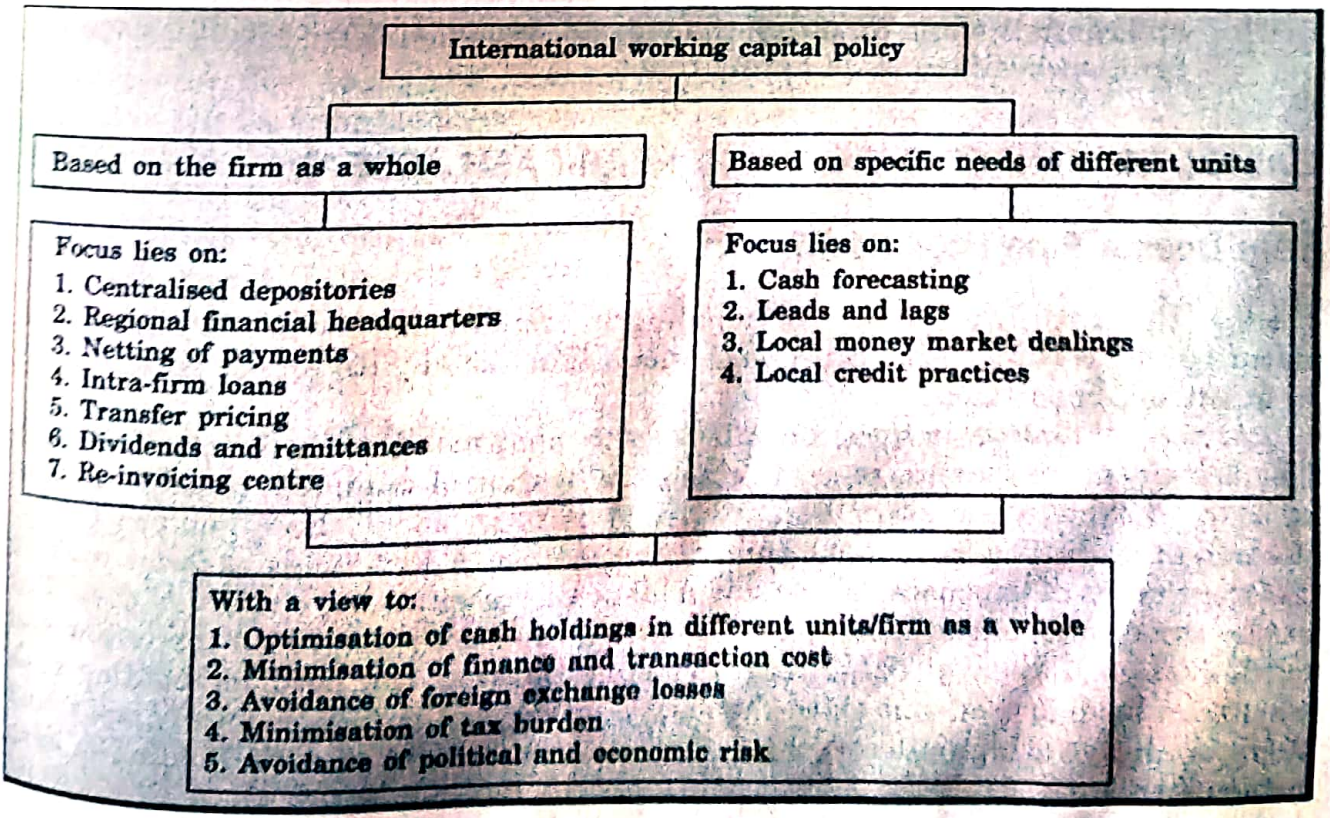
To sum up, the objectives of the working capital management in an international firm are:

1. Optimisation of cash holdings in different units through smoothening of the cross-border cash flows as well as in the firm as a whole.
2. Minimisation of finance and transaction cost.
3. Avoidance of foreign exchange losses.
4. Minimisation of the tax burden of the firm as a whole.
5. Avoidance of political and economic risk prevailing in different host countries.

To this end, the working capital policy in an international firm should be viewed from two angles: one based on the system/firm as a whole and the other based on the specific needs of different affiliates.

From the view point of the firm as a whole, profitability emerges as the prime consideration even if a particular unit may have to make sacrifice. Some of the subsidiaries, at a particular point of time, generate surplus funds for use elsewhere in the firm. The others with lower sales revenue vis-a-vis their investment requirements are the user of the funds. Again, there are financial co-ordinators that provide financial services in form of maintaining banking relationship, assisting currency risk hedge and promoting effective control over transaction cost. The working capital policy establishes an optimal linkage among them. The focus of this approach lies primarily on: creating and managing regional financial headquarters, managing centralised depositories, netting of payments, intra-firm loans, transfer pricing, dividend and remittances, reinvoicing centres, etc.

On the other hand, from the view point of an affiliate, international cash management strategy focuses more on its ability to budget and plan for more narrowly conceived objectives. Cash forecasting, leads and lags, local money market operations and local credit practices are some more important areas on which the focus lies.



Complexity in International Firms

The management of working capital in an international firm is more complex than in a domestic firm. The reasons are:

1. A multinational firm has a wider option for financing of current assets. Host-country funds can be used. Funds can flow from various units of the same firm. International financial market can be approached. Domestic firms too can approach international financial market, but it is not easy for them to do so.
2. A multinational firm is often subjected to foreign exchange risk when the value of inflow and outflow of funds or the value of export and import is influenced by exchange rate changes. It also faces political risk when the home-country government or the host-country government imposes restrictions on the flow of cash or the flow of inventory. On the other hand, the operation of a domestic firm is normally confined to the national boundary.
3. Intra-firm flow of funds is very common among the multinational enterprises. Viewing from this angle, cash positioning as well as cash mobilisation is an important aspect of international working capital management. In a domestic firm, such questions do not arise.
4. A multinational manager finds it difficult to manage working capital of different units of the firm because he does not have a detailed idea of politico-economic conditions prevalent in different host countries. It is a fact that with the growth of international communication system, the problem has become easier to a great extent, but it still exists.
5. Interest rates and tax rates vary in different countries. A multinational manager has to take into consideration the interest-rate and tax-rate differentials while financing the current assets. In the case of a domestic firm, such differentials hardly count.

Working capital management in MNCs is complex in view of:
1. Multi-directional flow of funds,
2. Exchange rate risk,
3. Political risk,
4. Complexities of cash positioning,
5. Varying environment in host countries,
6. Varying interest and tax rates among countries.

BASICS OF MANAGING CASH AND NEAR-CASH ASSETS

Why Does a Firm Hold Cash?

Cash is the most liquid asset. Its handling is complex in view of the complicated nature of cross-border financial transactions. This is why its proper management is of utmost importance.

At the very outset, a question arises as to what motivates a firm to hold cash. The principle of cash management believes in holding of minimum possible amount of cash that helps maintain liquidity. Keynes talks about three motives behind holding of cash. The first is the *transaction motive*. A firm holds cash for making different types of expenses. These payments cause a continual outflow of cash. But at the same time, sales and other incomes lead to cash inflow. Had the inflow and outflow of cash been of equal size and simultaneous, the need for holding cash would not have arisen. But since the size of inflow and outflow is hardly equal and there is always a lag between the inflow and the outflow of cash, holding of cash becomes essential.

The other motive behind holding of cash is known as *precautionary motive*. It explains that a firm holds cash for meeting exigencies that may arise. It may happen that when a big customer does not pay the bill or the raw material supplier eliminates the credit, the need for more cash will emerge suddenly without prior notice. Such needs are unforeseen but they are not a continual phenomenon. This is why a firm holds cash for this purpose in the form of near-cash assets. Whenever exigencies arise, near-cash assets are converted into cash.

Yet the other motive is the *speculative motive* that leads to additional requirements for cash. Sometimes unforeseen opportunities arise when it is profitable for the firm to invest. In order to exploit such opportunities, cash is required. Since such needs arise occasionally, the cash for this purpose is held in the form of near-cash assets.

In an international firm, cash holding is influenced also by *inter-firm* and *intra-firm flow of funds* and the various constraints influencing such flows. These flows are considerably influenced by the exchange control mechanisms adopted by different governments. Inter-firm flows are not solely within the control of a single multinational enterprise and so its manoeuvrability in this respect is very limited. On the other hand, the scope for its manoeuvrability in respect of intra-firm flows is quite large. The parent company can effect intra-firm flows even if there is exchange control and thereby it can manage the cash requirements. This is why it is worthwhile to mention the ways of intra-firm transfer of cash in the presence of exchange control.

Intra-firm Flow of Cash

Direction of flow

Intra-firm flow of funds manifests in funds moving (a) from parent to subsidiary, (b) from subsidiary to parent, and (c) among different subsidiaries.

The largest segment of the funds flowing from parent to subsidiaries is represented by initial and supplementary investment in working capital and transfer pricing. The reverse flow takes the form of dividend payment, payment of royalty and technical service fees, disinvestment by the parent company, interest and amortisation payments on loans given by the parent company, export proceeds, payment for imports, and transfer pricing. The flow from one subsidiary to another takes the form of export proceeds or the payment for import or transfer of funds for meeting the cash needs. Whatever the direction of the cash flow, it is very difficult to anticipate the timing and quantum of such flows, especially in view of exchange rate changes, exchange control mechanisms, and tax-rate differentials.

Forms of transfer of funds

When there is exchange control, a multinational enterprise adopts the following methods for transferring cash from one unit to another unit:

1. Transfer pricing
2. Parallel loans
3. Leads and lags
4. Changes in the rates of royalty and other fees
5. Changes in dividend pay-out ratio
6. Use of blocked funds.

Some of these modes have already been discussed. Transfer pricing is discussed in Chapter 23, on International accounting in Part VII. Parallel loans are covered in the chapter on the Management of Exchange Rate Exposure in Part III. Leads and lags have already been explained there, but they will be mentioned here exclusively from the view point of cash management. This will be followed by the discussion of other methods.

Leads and lags

Leading means shortening of credit terms in number of days, while lagging means extending or enlarging of the days of credit. Shortening of the period of credit causes greater flow of cash from the purchaser (importer) to the seller (exporter). Lagging, on the other hand, causes flow of cash from exporter to importer. Suppose Unit A is regularly supplying raw material to Unit B worth $ 2.0 million a month on 90-day credit. The average size of receivables will be $ 6.0 million. Suppose further that $ 4.0 million of cash has to be transferred from B to A, there will be a leading of the credit terms to 30 days. This will reduce the size of receivables to $ 2.0 million and it will result in the flow of cash worth $ 4.0 million from B to A. If, on the other hand, a sum of $ 6.0 million has to be transferred from A to B, the terms of credit will be lagged to 180 days. The average size of receivables will move up to $ 12 million. It will represent a cash flow of $ 6.0 million from A to B during the three-month period.

Lead means advancing payments. Lag means postponing payments.

Leads and lags are practised in the face of exchange control insofar as the governments are less likely to interfere with the payment terms. However, benefit from this process cannot be thought of in isolation of the borrowing and the lending rate. Suppose due to leading, the importer has to pay more during a particular period of time. For the payment, it borrows from the market, whereas the exporter invests that amount in short-term marketable securities earning a particular rate of return. The leading will be beneficial only when the rate of return from investment is greater than the interest rate on borrowing. This means that the technique of leading and lagging must be viewed against the differential between the interest rate on borrowing and the rate of return from investment.

Changes in the rate of royalty and other fees

The rate of royalty and other fees is fixed by an agreement between the parent company and the subsidiary. But when possible, the parent company makes changes in these rates for the purpose of transfer of liquidity. If the subsidiary is cash-surplus and it has to remit the surplus to the parent company, the latter will raise the rate of royalty and other fees. On the contrary, the rates will be lowered if the subsidiary is cash-deficit. The lowering of rates will help the subsidiary to conserve cash. However, the host government does not like such changes.

Changes in the dividend pay-out ratio

As in the case of royalty, an increase in the dividend pay-out ratio helps the subsidiary to transfer the funds to the parent company. The lowering of the ratio leads to a reverse flow. This is a very common method as about one-half of total remittances to the US firms by their affiliates is represented by such payments.

However, in view of uniformity in the dividend pay-out ratio in line with that of the parent company, any wide deviation in this ratio is not possible. Moreover, liquidity transfer through changes in the dividend pay-out ratio depends to a considerable extent on the cost of alternative sources of funds. This ratio can easily and preferably be raised if the cost of borrowing is lower than the opportunity cost of the cash balance in the host country. Again, the changes in the ratio depend also upon the differential between tax rate on dividend pay-out and the tax rate on retained earnings. If the latter is higher, the parent company will prefer to raise the dividend pay-out ratio. Nevertheless, strict control on the dividend flow by the host government comes in the way of this practice. Besides, some firms relishing the idea of dividend stability do not permit abrupt changes in the dividend pay-out ratio.

Use of blocked funds

If there exist blocked funds in a host country as a sequel to restrictions on the transfer of funds, it is the motive of the parent company to use that amount either in that host country itself or in any other country. To this end, the company adopts a number of techniques such as the following:

1. Transfer pricing
2. Leading and lagging
3. Use of fronting loans
4. Creation of unrelated exports
5. Forced reinvestment

The first two methods, namely transfer pricing and leads and lags, have already been discussed. The other three methods will be explained here.

Fronting loan is a parent-to-affiliate loan moving through a financial intermediary.

Fronting loan is a parent to affiliate loan channelled via a financial intermediary, usually an international bank. Suppose for the moment that a US subsidiary in India has blocked funds which could not be transferred to its US parent on account of exchange control prevalent in India. Now the US parent likes to use this fund. If it prefers to use a fronting loan, it will deposit that amount with an international bank which has an office in India. The bank will make a loan for that amount to the US subsidiary in India. In fact, it will simply front for the parent. After the lapse of a specified period, the subsidiary will repay the loan to the international bank and the repaid amount will be passed on to the parent. Here the bank will be interested in this function insofar as, first, the deposit made by the parent will serve as a collateral for the loan; and secondly, the interest paid by the bank on the deposit will be lower than the interest received on account of loan.

Creation of unrelated export is another method. Since the creation of additional export needs some amount of additional investment that will come out of blocked funds, the parent company emphasises on the creation of additional export by the subsidiary. Again, the additional export may be a barter deal in which the US subsidiary in India in our example may export normally those items that are not in demand abroad. This way the barter deal will not affect India's export to the general currency area; and at the same time, the blocked funds will be utilised for making exports.

Again, **forced reinvestment** of funds is made when blockage is only temporary. It is better to **invest the blocked funds** in the money market of that particular host country itself. If the money market is not well developed, the subsidiary can invest the blocked funds in some industries. If this channel too is not possible, the blocked funds can be used to purchase an asset, the value of which can rise with an increase in the inflation rate.

Thus, one finds that there are many ways for transfer of funds out of the host country circumventing the exchange control regulations. The choice of a particular method or a combination of methods depends upon the cost and benefit involved in them as well as on how far they are able to negate the restrictions imposed by the host government on the transfer of funds. The choice depends also upon the objectives that the different methods are going to serve. If the purpose is to avoid exchange control, the method will be different from that when the purpose is to save taxes.

Again, if the firm likes to reap the maximum advantage from the intra-firm transfer of funds, the parent should have a detailed information of the cash requirements of its different units and the cost of funds prevalent in the host country's financial market. It should possess also the knowledge of tax rates and the governmental regulations in the host countries.

STEPS IN MANAGEMENT OF CASH AND NEAR-CASH ASSETS

The management of cash and near-cash assets involves basically four steps:

1. Assessment of the cash requirements
2. Optimisation of cash need through restructuring of inflows and outflows
3. Selection of the sources from where cash could be brought in
4. Investment of surplus cash, if any, into near-cash assets

Selection of the sources of funds has already been discussed in Chapter 15. So in this chapter, we shall deal with the other three issues mentioned above.

Assessment of Cash Requirements

The first step in the international cash management is to establish the need for cash during a specific period which may be a week, a fortnight, or a month. It is computed on the basis of the expected amount of cash disbursements vis-à-vis expected inflow of cash during a particular period. The outflow and inflow of cash occur mainly on account of various transactions. The firm holds cash also to meet the precautionary and speculative needs, but as mentioned above, such needs are fixed, and the amount of cash for these purposes is determined on the basis of experience and the general trend of business environment.

For the assessment of cash needs, a *cash budget* is prepared for each of the subsidiaries. After assessing the cash need of each of the subsidiaries, the figures are consolidated in order to assess the cash need of the firm as a whole. This is so because in a multinational enterprise, it is the cash flow of the firm as a whole that is taken into account and it needs to be managed. The process of consolidation requires the translation of the host-country currency into the home-country currency which is always subjected to foreign exchange exposure. The readers are suggested

to consult any book on corporate finance for the cash budget preparation. They are also suggested to consult Part VII of the text for an understanding of the translation of currencies. Here we present a simple illustration of how the cash budgets of different subsidiaries are consolidated.

Suppose a US parent company has two subsidiaries A and B in two different countries. The budget of the two subsidiaries shows the expected inflow and outflow of cash during all the four weeks of a particular month. The cash flows can be consolidated with the cash flow of the parent company. However, at the present juncture, we show the consolidation of the two cash budgets only.

The figures in Table 21.1 show the cash position of the two subsidiaries. In the beginning of the month, Subsidiary A is cash-deficit, while Subsidiary B is cash-surplus. In this case, the parent company can instruct the latter to transfer the

TABLE 21.1 Cash Inflow and Outflow

(US $ '000)

	Subsidiary A			*Subsidiary B*		
	Inflow	Outflow	Net	Inflow	Outflow	Net
Cash position in the beginning			–300			+250
Forecast: First week	180	50	+130	200	300	–100
Second week	160	180	–20	150	270	–120
Third week	300	140	+160	100	50	+50
Fourth week	100	200	–100	100	120	–20
Four weeks' total			**+170**			**–190**
Cash position at the month-end			–130			+60

TABLE 21.2 Consolidated Statement

(US $ '000)

	Subsidiary A	*Subsidiary B*	*Total*
Cash position in the beginning of the month	–300	+250	–50
Cash required (precautionary & speculative)	–100	–100	–200
	+150	–250	
Forecast: First week	+130	–100	+30
Second week	–20	–120	–140
Third week	+160	+50	+210
Fourth week	–100	–20	–120
Four weeks' total	**+170**	**–190**	**–20**
Cash balance at the end of the month	–230	–40	–270

surplus funds to Subsidiary A. The rest of the deficit can be met either by the parent company or by raising funds from outside the firm. Similarly, in the first week of the month, Subsidiary A will meet the deficit of Subsidiary B. But in the second week, both the subsidiaries are in deficit. In that case, the parent company, if it is in a surplus position, has to meet the deficit. It may also ask the subsidiaries to raise funds from outside the firm. Now the decision of the parent company

whether to meet the deficit from the sources within the firm or to meet it by outside funds depends upon the cost of the funds to be raised from the market vis-à-vis the sum of the transaction cost involved in the intra-firm flow of the funds and the rate of return from the investment of the surplus funds in short-term marketable securities. If the former is higher than the latter, the parent company will insist on the intra-firm flow of funds. If the latter is higher, the parent company will prefer to raise funds from outside the firm.

In the third week, both the subsidiaries are in surplus position. In this case, the surplus funds will be invested in short-term marketable securities. When there is deficit in the subsequent week or weeks, the investment will be converted back into cash in order to meet the deficit. How to invest will be discussed in the subsequent section of this chapter.

Optimisation of Cash Needs

The required cash level can be minimised during a particular period through restructuring of the inflows and outflows. If, in the case of inter-firm payments, the inflows are accelerated and at the same time outflows are delayed, the cash needs at a particular point of time shall be lower. Again, if, in the case of intra-firm payments, netting of payments is adopted, the need for cash will reduce further. Yet again, the need for cash will be reduced if there is centralised holding and management of precautionary cash balance. Thus, after the assessment of cash needs for different subsidiaries individually and then for the firm as a whole, the firm steps into restructuring of the cash flows so as to minimise the cash need at a particular point of time. The restructuring includes three steps:

1. Accelerating inflows of cash and delaying disbursements
2. Netting of payments
3. Centralised management of precautionary cash balance.

Accelerating inflows and delaying outflows

There are two types of delays in the collection of cash. One is the mailing delay and the other is the processing delay. In collection from across the border, long procedural formalities and governmental restrictions too come in the way.

As regards *mailing delay*, the use of cable remittances is often suggested. The use of telex or cable transfers cuts short the mailing delay. In this respect, the Society for World-wide Inter-bank Financial Telecommunications (SWIFT) is doing a commendable job. It has brought into its fold around 1,000 banks among which funds are transferred electronically with ease. Again, the firm opens up regional mobilisation centres and instructs the customers to make their payments to the centres falling in their respective vicinity. Sometimes, the postal box with the post-offices falling in the customers' vicinity is set up. The postal box is operated by the local offices of the bank authorised by the firm. This method is commonly known as the *lock-box system*.

As far as *processing delay* is concerned, there are some multinational banks that provide "same-day-value" facilities. Under this facility, the amount deposited in any branch of the bank in any country is credited to the firm's account on the same day. This is done through electronic devices. Thus it is suggested that the firm should take help from such banks to cut short the processing delays.

Again, some of the firms adopt pre-authorised payment system in which they are authorised to charge a customer's bank account up to a specific limit.

Besides, disbursements are delayed in order to conserve cash at least for some time. But the firm should be careful that making such delay does not affect its creditworthiness. Again, when disbursements are delayed, there are chances for retaliatory measures. Thus the process of disbursements demands extra care.

Accelerating cash inflow and decelerating disbursements help improve the efficiency of cash management, but they do involve additional cost. Thus it is advisable for the company to adopt these techniques as long as their marginal returns exceed their marginal cost.

Netting of intra-firm payments

The other step towards lessening the requirements for cash is to encourage netting of intra-firm payments. There is usually a large volume of intra-firm payments. Such payments require not only huge amount of cash but they also involve transaction cost, inter-currency conversion cost and opportunity cost of float. Different units of a firm require cash, not only for making payments but also for meeting such costs. Netting is a solution to this problem.

Netting of payments means payment of only the net amount. It may be bilateral/ multilateral.

Netting is, in fact, the elimination of counter payments. This means that only net amount is paid. For example, if the parent company is to receive US $ 3.0 million from its subsidiary and if the same subsidiary is to get US $ 1.0 million from the parent company, these two transactions can be netted to one transaction where the subsidiary will transfer US $ 2.0 million to the parent company. The cost of transfer too will be lower. If the amount of these two payments is equal, there will be no movement of funds, and the transaction cost will naturally be zero.

Netting can be bilateral involving two units. It may be multilateral involving more than two units. Suppose A, B and C are the three units of a firm. A has to receive US $ 15.0 million from B and US $ 12.0 million from C. B has to receive US $ 20.0 million from C and US $ 20.0 million from A. C has to receive US $ 30.0 million from A and US $ 6.0 million from B. In the absence of netting, there will be six transactions involving US $ 103 million. If it is bilateral netting, there will be three transactions involving US $ 37.0 million. If it is multilateral netting, there will be only two transactions involving only US $ 23.0 million.

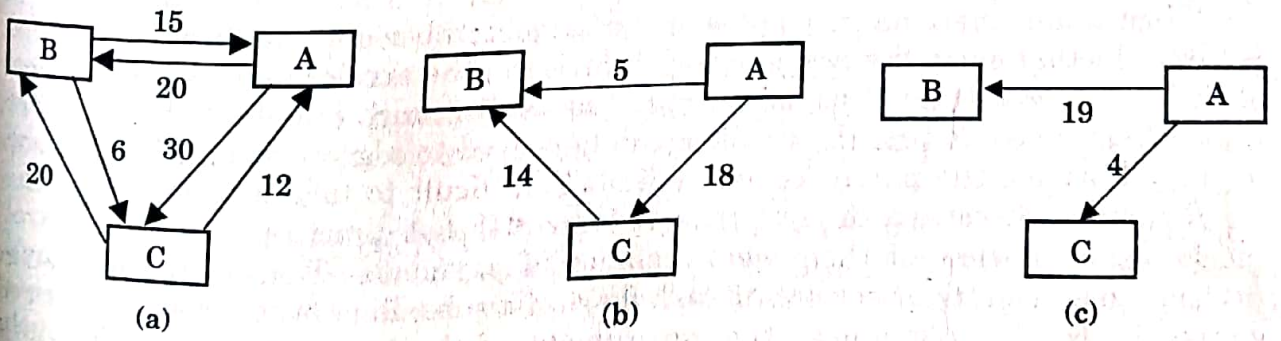


FIGURE 21.1 (a) No Netting; (b) Bilateral Netting; (c) Multilateral Netting.

However, for making netting successful, the parent company needs to maintain a close watch on all intra-firm transactions. The subsidiaries may not like it. Again, for netting, the units of a firm located in different countries have to take permission from the monetary authorities. The monetary authorities may not allow them on the conditions of injury to the external balance of the country.

Centralised management of precautionary cash balance

The centralised holding and management of precautionary cash balance helps reduce the requirements for cash without impairing the ability of the firm to cover unforeseen expenses. The size of such cash balances depends on how safe the firm deserves to be in its ability to meet unexpected transactions. The larger the precautionary balance, the less is the risk of financial embarrassment and loss of credit standing.

The management of precautionary cash balance is based on the theory of probability which means that there is specific percentage of probability of running into cash shortage for different units. The risk of cash shortage is explained through standard deviation. In the case of decentralised holding of precautionary cash balance, each and every unit has some amount of standard deviation. But when the cash holding is centralised, the risk of the firm as a whole is explained through portfolio standard deviation. And as the theory of portfolio standard deviation suggests, the portfolio risk will certainly be lower than the sum of risk faced by different units. This is because there is possibility for a negative correlation between the risk of different units. In short, the centralised holding of precautionary cash balance lowers the risk and helps lower the cash requirements of the firm. In case a particular unit runs short of precautionary cash balance, the centralised depository comes to the rescue immediately.

Problems with the cash optimisation process

The problems coming in the way of accelerating and decelerating of cash flows or the netting process have already been pointed out in this section. Yet they may be grouped as:

1. Firm-related problems
2. Governmental restrictions
3. Deficiency in the banking system
4. Opposition by subsidiaries

When a multinational enterprise has a large number of subsidiaries and there is large fluctuation in the host-country currencies, the acceleration or deceleration of cash flows or netting of payments may become too much complicated. It is a fact that owing to computers, the problem can be solved to a great extent. But in view of complications, the parent company finds it difficult to take a correct decision.

Secondly, there are many host governments that practise exchange control mechanisms in view of their weak balance of payments. The parent company's decision to accelerate or decelerate cash flows of a subsidiary or to net the payments cannot be carried out unless the government of the host country permits such actions.

Thirdly, there are still a number of international banks that have not developed a sophisticated system of collections and payments. In these cases, acceleration of collection and netting of payments cannot be effective.

Fourthly, the acceleration or deceleration of cash flows may be beneficial for one unit or one firm, but it may not be beneficial for the other unit or the other firm. In such cases, those subsidiaries or firms that are at loss resent such a move. The firms may take retaliatory measures. The subsidiaries in which the parent company has very little control may come in the way of such moves.

Investment of Surplus Cash

It has already been mentioned that the cash balance for precautionary and speculative purposes is held in the form of near-cash assets. Surplus cash over the transaction purposes too is held in the form of near-cash assets or short-term marketable securities. The reason is that the near-cash assets earn something for the firm and are definitely better than holding of idle cash balance.

In this context, a couple of questions are involved that need some explanation. They are:

1. Whether the surplus cash balance of the entire firm should be centralised and then only it should be invested.
2. How much of the surplus cash balance should be invested in near-cash assets.

Forms of centralisation process

The process of centralisation of surplus cash can take two forms. One is the centralised control of the parent company over the surplus cash of different units. In this case, cash does not actually move to a centralised pool, but its movement to a cash-deficit unit or for investment in near-cash assets is strictly guided by the parent company. The other form manifests in the actual movement of cash to a centralised pool. Any investment into the near-cash assets takes place only out of the centralised pool.

Centralised pool represents a pool of funds where the surplus cash of all the units of a firm is deposited.

Merits of the centralisation process

Since the working capital management among different units of a multi-national enterprise is designed to maximise the benefit of the firm as a whole, it is always better to have centralisation of decision. If the decision to invest the surplus cash is left to the individual units spread over different parts of the globe, the different units will think in their own terms only, and the objective of the maximisation of overall benefit will not be served. Moreover, it may happen that one unit does have surplus cash, while the other unit borrows at high interest rates from the external sources.

In the case of centralisation, the funds of the firm are invested in the most desirable fashion so as to avoid the weaknesses of some of the host-country currencies. Whenever any unit falls into liquidity distress, funds are immediately rushed to it.

Sometimes centralisation of surplus cash reaps the economies of scale. There are many investment avenues that need large sums of money. If investment is left

The centralisation process helps:
1. Meet global objective
2. Lower cost of funds
3. Avoid the impact of currency depreciation
4. Maintain firm's global liquidity
5. Achieve economies of scale.

to the individual units, the surplus may not be so large and the investment avenue can remain untapped. But that investment avenue can easily be tapped through centralised pool.

However, when the central pool is maintained, some precautions should be taken. *First*, each of the units should have smooth cash collection and disbursement procedures. *Second*, each of them should be aware of the quantum of cash inflow and cash outflow at a particular point of time. *Third*, the system of movement of cash to and from the pool should not have any restrictions. *Fourth*, the information system must be substantially improved.

Location of the centralised pool

The centralised pool may be located either in the host country or in the home country or in a third country. The location depends upon the following factors:

(a) *Strength of the currency of that country.* This means that the currency must be strong.

(b) *Strength of the money market.* The stronger and well developed the money market, the greater will be the investment avenues.

(c) *Tax rate.* Tax rate should be the lowest. In fact, this is the reason that most of the US multinationals locate their centralised cash pool in tax-haven countries, such as Panama, Cayman Islands, and the Bahamas.

(d) *Political stability.* The greater the political stability, the easier and safer it will be to locate the centralised pool of cash.

(e) *Attitude of the host government.* Pool is located only in those countries where the attitude of the government is congenial towards foreign companies.

How much of the surplus to be invested

Surplus cash should not lie idle. It should be invested. But the owner of the centralised pool must consider the benefit and cost of the investment. The larger the investment, the greater is the interest earned but at the same time greater is the risk of illiquidity. If the investment is lower, liquidity will improve but earning on the investment will be lower. Thus an *optimal division of funds between cash and near cash assets requires a trade-off between liquidity and profitability.*

Surplus cash is invested only to the extent where transaction cost = opportunity cost.

The optimal ratio between cash and near-cash assets is influenced also by the transaction cost or the cost of conversion from cash to securities and back in the form of brokerage, etc. The larger the near-cash assets, the greater will be the transaction cost. On the contrary, larger cash balance does involve large opportunity cost in form of interest foregone that the near-cash assets could have earned. *The optimal level, therefore, represents a point where the sum of transaction cost and opportunity cost is the minimum.*

While making investment in near-cash assets, the international finance manager has to take care of a number of facts, of which the following are important:

1. Portfolio should be diversified so as to maximise yield for a given level of risk.
2. Portfolio should be reviewed daily so as to decide which particular investment has to be liquidated or which particular securities should remain undisturbed.
3. Investment should be made in those assets only where liquidity prevails.

4. Maturity structure of investment should coincide with the need for cash so that securities can be easily converted back into cash whenever need for fresh cash arises.

Currency of investment

An important question concerning the investment of surplus cash into near-cash assets is related to the choice of currency/country. Normally, the surplus cash is invested in a country where interest rate is higher as higher interest means higher return. However, the answer is not so simple as it looks at first sight. In fact, the firm has to take into account the effective yield/return that depends not only on the rate of interest but also on the changes in the exchange rate. If the currency of the country where the funds are invested depreciates vis-à-vis the home-country currency, the return in terms of home-country currency will be lower. Basing on Eq. (15.1), the effective return,

Effective return from investment depends upon rate of interest and the exchange rate changes.

$$r = (1 + i_f)(1 + e_f) - 1 \qquad (21.1)$$

where i_f is the interest rate on foreign currency investment, and e_f is the changes in the exchange rate.

Suppose a US company invests its cash in French securities where interest rate is 8.0 per cent as compared to 6.0 per cent in the USA. But French franc depreciates during the period by 5.0 per cent vis-à-vis the US dollar. The effective return will be:

$$(1 + 0.08)[1 + (- 0.05)] - 1 = 0.026 = 2.6\%$$

Thus the US company will not invest its surplus cash in French securities even when the interest rate is higher since the effective return is lower.

The above example is not very uncommon. For, as the Interest Rate Parity theory tells us, the currency with higher interest rate tends to depreciate over time. Thus, interest rate differential is a better guiding factor. With the elongation of the time period, impact of interest rate differential on the forward rate tends to become more apparent.

One can say that the interest rate differential normally matters because it is not very easy to anticipate the changes in the exchange rate. However, there are many exchange rate forecasting agencies that predict the movement in the exchange rate. Moreover, one can guess it on the basis of probability. Suppose there is 40 per cent probability for 5.0 depreciation, 20 per cent probability for 3.0 per cent depreciation, and the remaining 40 per cent probability for 2.0 per cent appreciation. The expected value can easily be calculated.

More often, a firm makes multiple-currency investment and reaps the benefit of diversification. Uncertainty in exchange rate changes is greatly reduced if there is negative correlation in the changes in the exchange rate of different currencies.

Thus whenever a firm has surplus of cash, it is better to have a centralised pool located in the most suitable place. The centralised funds should be translated into multiple-currency investment. However, care should be taken that the cost of investment does not exceed the benefits from investment. To be precise, investment of surplus cash should be made:

1. through a centralised pool located in the most suitable place;
2. through a perfect trade-off between liquidity and profitability;
3. at a point where the sum of conversion cost and opportunity cost is the minimum; and
4. in multi-currency investment channels.

MANAGEMENT OF RECEIVABLES

Credit sales lead to the emergence of account receivables. The management of receivables focuses on two important facts. One is that the cost of the credit sale should not exceed the benefit from the credit sales. The other is whether the sale is confined within different units of the firm or it is an inter-firm sale.

Benefits and Costs of Receivables

Greater sale volume is the benefit of credit sale. It is because customers get more time to pay for the goods. But, on the other hand, there are costs involved with the credit sale that need to be balanced against the benefits. The costs are:

Receivables benefit in terms of greater sale. But the costs are: financing cost, administrative cost, collection cost, bad debt loss and loss owing to exchange rate changes.

1. Financing cost, that is, the interest on the funds tagged with receivables. The higher the interest rate or the longer the period of credit, the higher is the cost.
2. Administrative cost incurred on maintaining office for such sales. It includes the cost of maintaining records.
3. Collection cost which is incurred especially when the bills are not paid in time. Such costs move up with the gradual liberalisation of credit.
4. Bad debt loss when the sale proceeds are not realised in spite of best efforts.
5. Foreign exchange loss that arises if exchange rate changes against the exporter during the period of credit.

Thus the appropriate policy of managing account receivables should be that a firm extends credit only up to a point where the marginal profits on its increased sale are equal to the marginal cost of receivables.

If the size of credit sale is lower than this point or the optimal size, benefits shall be less than the maximum. On the other hand, if the size of the credit sale exceeds the optimal point, costs will turn higher to slash the benefit.

Selecting an Optimal Term of Credit

The terms of credit granted to the buyers influence the receivables' cost and the benefit. Liberal terms raise benefits but at the same time the costs too. Stringent terms, on the other hand, lower both the benefit and the cost. So the firm determines the optimal terms of credit that represents the maximum net benefit. The firm prepares proforma income statement assuming a particular size of sales and the size of different costs and then it arrives at the net profit. The term representing the maximum net profit is the optimal term of credit.

Credit Policy

Intra-firm sales

In case of intra-firm sales, the focus of receivables management is not on the quantum of credit sale or on the timing of payment but on the global allocation of firm's resources. There is often vertical integration among different units located in different countries. Different parts of the same product are manufactured in different units and exported to the assembly unit. In such cases, the size of receivables is very large. Similarly, early payment or late payment does not matter because the seller and the purchaser represent the same firm. A particular unit may delay the payment if it is suffering from cash shortage. The payment may be quick if the unit has surplus of cash. It is all a game of intra-firm allocation of resources. And to this end, leads and lags, explained earlier are frequently used. The readers are suggested to go through the explanation of this technique. It will be clear how far this technique is helpful in the intra-firm allocation of resources.

However, if a unit of the firm is located in a weak-currency country, it is asked to make a quick payment so that the cost of receivables borne by the firm as a whole may not be large. The impact of exchange rate changes may be illustrated here. Suppose credit period is 120 days. The financing cost is 1.0 per cent per month. The importer's currency is to depreciate by 2.0 per cent during the four-month period. The receivables are denominated in the importer's currency. The additional cost of receivables per unit of the exporter's currency, which is the product of the financing cost and the currency depreciation, is

Collection is expedited from a buying unit located in a weak-currency country.

$$1 - [(1 - 4 \times 0.01)(1 - 0.02)] = 0.059 = 5.9\%$$

Inter-firm sales

In the case of inter-firm sales or the sales to an outside firm, a couple of decisions are involved. One is about the currency in which the transaction should be denominated; while the other is about what the terms of payment should be.

As regards *currency denomination*, the exporter likes to denominate the transaction in a strong currency, while the importer likes to get it denominated in weak currency. In such a situation, it is the question of bargaining. However, the exporter may be ready to invoice the transaction in the weak currency even for a long period of credit if it has debt in that currency. It is because the sale proceeds can be used to retire the debt without any loss on account of exchange rate changes.

Inter-firm credit sale takes care of:
1. Currency of denomination
2. Terms of payment.

As regards the *terms of payment*, the exporter does not provide a longer period of credit and tries to get the export proceeds as early as possible if the transaction is invoiced in a weak currency. But sometimes, there is found deviation from this simple norm. The credit term may be liberal if the exporter is able to borrow from the bank on the basis of bill receivables and not on the basis of actual inventory. Again, the terms of credit may be liberal also in cases where competition in the market is tough forcing in turn the exporter to finance a part of the importer's inventory, and this act of the exporter is going to expand the sale significantly. But these conditions are not common.

MANAGEMENT OF INVENTORY

Complex Management In MNCs

Inventory accounts for the biggest share of the current assets. At the same time, it is the least liquid. This is why its management deserves sufficient care. To some extent, the management of inventory in an international firm is similar as in case of a domestic firm. But some additional factors are important in the case of an international firm. They are:

1. An international firm has to maintain inventory simultaneously in different countries.
2. Transit time is quite longer.
3. Customs procedures are quite lengthy.
4. Political risk along with exchange rate risk is there.

Based on these problems, there are some deviations from the simple norm of inventory management, which is practised in a domestic firm. These deviations are now explained at some length.

Deviation from the Economic Order Quantity

The economic order quantity (EOQ) is the optimal size of inventory that a firm orders at a particular point of time. The readers are suggested to consult any book on corporate finance where they will find an explanation of EOQ and the details about its calculation. However, it may be pointed out here that it is that quantity of order where the sum of the ordering cost and the carrying cost of inventory is the minimum. With the growth in the size of order, the number of orders in a particular period of time gets fewer and the ordering cost reduces. But, on the other hand, the carrying cost increases. Thus to arrive at the EOQ, the finance manager has to trade-off between the carrying cost and the ordering cost. The trade-off is complete where the sum of these two costs is the minimum.

EOQ represents the size of an order for inventory where the sum of carrying cost and order cost is the minimum.

The domestic firms adhere to this norm strictly. But the international firms possess normally a bigger stock than the EOQ which is often known as *stockpiling*. The different units of a firm get a significant part of their inputs from sister units located in other countries. This is more common in a vertical set-up. In such cases, political risk and the exchange rate risk cannot be overlooked completely. If there is political disturbance, there will be obstruction in the import. If the currency of the importing country depreciates, the imports will turn costlier. Thus in order to avoid this problem, stockpiling is favoured.

Stockpiling means inventory order for more than EOQ.

PROBLEM 21.1

Total demand for raw materials is 100 tonnes during time T. The carrying cost is \$ 10 per tonne of stock during time, T and the order cost is \$ 1 per order. Will you call it stockpiling if the firm makes an order for 6 tonnes of raw material?

Solution

First we have to find out the EOQ. EOQ lies where transaction cost is equal to order cost. In terms of an equation:

$$AQ/R = cTR/2$$

or $$2aQ/R^2 = cT$$

or $$R = (2aQ/cT)^{1/2}$$

Based on this equation,

$$EOQ = \{(2 \times 1 \times 100)/10\}^{1/2}$$

$$= 4.472 \text{ tonnes.}$$

If the firm makes an order for 6 tonnes, it is a clear case of stockpiling

However, stockpiling cannot be done indefinitely. The firm will have to decide against stockpiling if the cumulative carrying cost exceeds the expected increase in the price of the input on account of changes in the exchange rate. Nevertheless, if the probability of interruption in supply is very high, the firm may go for stockpiling even if it is not justified on the ground of higher cost.

Shifting of Re-order Point

The principle of financial management suggests that the next lot of inventory is to be ordered when the existing stock comes down to the sum of safety level of stock and the lead time—both expressed in terms of number of days. Suppose the existing stock based on the present usage rate can last for 30 days. If the firm maintains a safety level of stock for five days and if the lead time, that is, the time elapsed between making an order and the arrival of input is six days, the firm will make an order for the next lot only after 19 days of the arrival of the existing stock.

Re-order point depends on:
1. Usage rate of inventory.
2. Lead time which is often geater in international procurement.

However, in the case of the international firms, the lead time is larger as the different units are located far-off in different parts of the globe. Even if goods reach the port, there are a lot of customs formalities. Because of all these factors, the re-order point for international firms lies much earlier.

Nevertheless, the decision regarding stockpiling or regarding re-order point depends on how much of the goods are to be imported and how much of them are locally available. Dependence on imports varies from one case to another, but it is definitely large for vertical set-up.

FINANCING OF CURRENT ASSETS

The discussion on international working capital management is not complete in absence of any explanation of how current assets are financed. It has already been pointed out that financing of the current assets involves essentially a perfect trade-off between liquidity and profitability. With this view in mind, the international managers finance the current assets with both the long-term and short-term funds.

Short-term funds are required for financing the variable current assets and also a part of permanent current assets.

But they rely more on short-term funds to finance the variable part of current assets and also a part of the permanent current assets. The process needs probe primarily into two issues. One is the source of the short-term funds to which an MNC can have the access. The other is the criterion on the basis of which an MNC selects a particular source. These two issues need some explanation.

Sources of Short-term Funds

An MNC has wider options compared to a domestic firm. It can get funds from three sources. They are:

1. Funds from the cash-surplus units or from the centralised pool.
2. Borrowing from the international money market including euro-currency market and the international securities market.
3. Borrowing from the host-country sources of funds.

The channelling of the funds from the cash-surplus units/centralised pool has been discussed in the present chapter while discussing international cash management. Euro-currency market and international securities market are discussed in Chapter 17 and Chapter 18. Among the host-country sources, the most important source is the commercial bank, although the firms get funds also through promissory notes and commercial paper. Banks providing short-term and medium-term funds to the exporters and importers find a place in Chapter 22. Thus the focus of discussion in the present chapter falls on how an MNC selects a particular source of short-term funds.

Selection of a particular source of funds is based on a perfect trade-off between liquidity and profitability.

Selection of a Particular Source of Funds

The process of selection is guided by the objective of a trade-off between liquidity and profitability. It means that the cost of funds is to be minimised but, at the same time, sufficient liquidity needs to be maintained. It is because the lack of liquidity mars smooth operation.

In order to evaluate the cost of different types of funds, the finance managers compare between the costs of .

(a) Internal funds and the external funds.

(b) International money market funds and the host-country funds.

As far as the former is concerned, a comparison is made between the opportunity cost of the internal funds and the interest rate of the external funds. If the opportunity cost of internal funds or, in other words, the rate of return from the investment of the surplus cash of the firm is higher than the interest rate on the borrowing from the external sources, it means that the firm's own resources are earning more than what is spent on paying interest on the borrowed funds. The firm finances the current assets with external funds.

Similarly, for comparison between the cost of host-country funds and the international money market funds, the finance manager of an international firm finds out the cost of the two types of funds in terms of the home-country currency for a more meaningful evaluation. This is primarily because: first, the exchange

rate changes and that influences the cost of funds; second, the tax rate influencing the tax-adjusted cost of funds, varies among countries.

Changes in the exchange rate and tax rate influence the effective cost of funds.

Changes in exchange rate influence the cost of borrowing. Using Eq. 15.1, we find that the effective cost of funds is a product of interest rate and exchange rate. If a currency depreciates, the effective cost of borrowing it in terms of home-country currency will move down. If it appreciates, the opposite will be the case. Thus even if borrowing in a host country is costlier than in international money market but if the currency of the host country is expected to depreciate at a higher rate, it is advisable to borrow in the host country.

Similarly, the larger the tax rate, the lower is the cost of borrowing. Interest is tax-deductible and so the effective cost of borrowing is arrived at after multiplying the interest rate by one-minus-tax rate. Thus an MNC maintains care while selecting a source of funds and raises funds in a country where the tax rate is higher.

However, care is maintained to preserve liquidity. An MNC borrows from a source where availability of capital is easy and repayment terms are in tune with the liquidity norms. Liquidity cannot be ignored just in order to lower the cost of funds.

SUMMARY

- Working capital is concerned with the operational aspect of a firm. Gross working capital is represented by current assets, while net working capital is represented by current assets minus current liabilities.
- The objective of the working capital management is, among other things, to determine the optimal size of the current assets and to determine how current assets should be financed. In the case of international working capital management, a few complexities arise in view of proximity to international financial market, changes in exchange rate, tax rate differentials, etc. and so the objectives are tuned to suit both the individual units and the firm as a whole.
- As far as management of cash is concerned, a firm holds cash for transaction purposes, precautionary purposes, and speculative purposes. In an international firm, holding of cash is greatly influenced by intra-firm cash flows. Such flows are prominent despite exchange control regulations. They are then not direct but through transfer pricing, parallel loans, leads and lags, changes in various remittances and through the use of blocked funds.
- In the process of cash management, the important step is first to assess the need for cash, then to optimise the cash requirements through restructuring of inflows and outflows and through netting of intra-firm payments, and then to find the cheapest source of cash. The surplus cash, if any, is invested normally through a centralised pool and in the currencies where the effective return is the greatest.
- For management of receivables, the finance manager should create receivables only to the extent where marginal cost is equal to the marginal benefit. In the case of intra-firm sales, the size of receivables and timing of payment is not important. It is rather the intra-firm allocation of cash that is important. On the contrary, in the case of inter-firm sales, the currency of invoice and the terms of payments are important.

- As regards inventory management, international firms possess often larger stocks than the principle of EOQ permits. This is due to political risk and the exchange rate risk inherent in the transaction of goods. These firms have also a different re-order point in view of longer lead time.

REVIEW QUESTIONS

Objective-Type Questions

1. State whether true (T) or false (F):
   (a) Leads and lags are the tools to transfer funds among different units of a firm. ☐
   (b) Mailing delay lessens the need for cash. ☐
   (c) Netting increases the transaction cost. ☐
   (d) Investment of surplus cash depends upon a trade-off between liquidity and profitability. ☐
   (e) Effective return from investment of cash includes changes in the exchange rate. ☐

2. Choose the correct answer:
   (a) Stockpiling means:
      (i) size of inventory less than the economic order quantity
      (ii) size of inventory greater than the economic order quantity
      (iii) size of inventory equal to the economic order quantity
   (b) Lead time means:
      (i) time between making of order and arriving of goods at the factory
      (ii) time between arrival of the goods and complete use of the goods
      (iii) none of these
   (c) Centralised cash pool is located in a country where:
      (i) tax rate is very high
      (ii) tax rate is very low
      (iii) political instability is a big problem
   (d) Fronting loan:
      (i) is a parent to affiliate loan channelled through a financial intermediary
      (ii) is an inter-firm loan
      (iii) none of these
   (e) Current assets are financed normally by:
      (i) current liabilities only
      (ii) long-term liabilities only
      (iii) a mix of current and long-term liabilities

Short-Answer Questions

1. Do you agree that intra-firm flow of funds influences the cash holding in a particular unit?
2. Explain parallel loans.
3. Describe the concept of leads and lags.
4. Distinguish between bilateral netting and multilateral netting.
5. Mention the problems related to the process of cash optimisation.
6. Do you justify stockpiling in respect of international inventory management?
7. Name the main factors responsible for greater lead time in international inventory management.

Long-Answer Questions

1. Is international working capital management more complex than the domestic working capital management?
2. How is cash need assessed? Can it be optimised?
3. What do you mean by cash positioning? Should the surplus cash be centralised?
4. How much and in which currency should surplus cash be invested?
5. What should be the shape of optimal receivables policy?

Numerical Problem

1. Unit A has to pay US $ 20 million to Unit B and $ 15 million to Unit C. Unit B has to pay $ 15 million to Unit A and $ 10 million to Unit C. Unit C has to pay $ 5 million to Unit B and $ 9 million to Unit A. Find out what will be the amount of funds movement after multilateral netting.
2. If order cost is $ 2,000 per order, holding cost is $ 500 per order size, and if total demand is 300 tonnes, what will be the EOQ?
3. If the size of one order is 50 tonnes lasting for 30 days, if lead time is 10 days and two days are the safety level of stock, find out the re-order point.

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