23.2 FACTORS INFLUENCING WORKING CAPITAL REQUIREMENTS

The working capital needs of a firm are influenced by numerous factors. The important ones are:

- Nature of business
- Seasonality of operations
- Production policy
- Market conditions
- Conditions of supply

Nature of Business The working capital requirements of a firm are closely related to the nature of its business. A service firm, like an electricity undertaking or a transport corporation, which has a short operating cycle and which sells predominantly on cash basis, has modest working capital requirements. On the other hand, a manufacturing concern like a machine tools unit, which has a long operating cycle and which sells largely on credit, has very substantial working capital requirements. Exhibit 23.3 shows the relative proportions of investment in current assets and fixed assets for certain industries.

Exhibit 23.3 **Proportions of Current Assets and Fixed Assets**

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

Seasonality of Operations Firms which have marked seasonality in their operations usually have highly fluctuating working capital requirements. To illustrate, consider a firm manufacturing ceiling fans. The sale of ceiling fans reaches a peak during the summer months and drops sharply during the winter period. The working capital requirements of such a

firm are likely to increase considerably in summer months and decrease significantly during the winter period. On the other hand, a firm manufacturing a product like lamps, which have fairly even sales round the year, tends to have stable working capital requirements.

Production Policy A firm marked by pronounced seasonal fluctuations in its sales may pursue a production policy which may reduce the sharp variations in working capital requirements. For example, a manufacturer of ceiling fans may maintain a steady production throughout the year, rather than intensify the production activity during the peak business season. Such a production policy may dampen the fluctuations in working capital requirements.

Market Conditions The degree of competition prevailing in the market place has an important bearing on working capital needs. When competition is keen, a larger inventory of finished goods is required to promptly serve customers who may not be inclined to wait because other manufacturers are ready to meet their needs. Further, generous credit terms may have to be offered to attract customers in a highly competitive market. Thus, working capital requirements tend to be high because of greater investment in finished goods inventory and accounts receivable.

If the market is strong and competition weak, a firm can manage with a smaller inventory of finished goods because customers can be served with some delay. Further, in such a situation the firm can insist on cash payment and avoid lock-up of funds in accounts receivable—it can even ask for advance payment, partial or total.

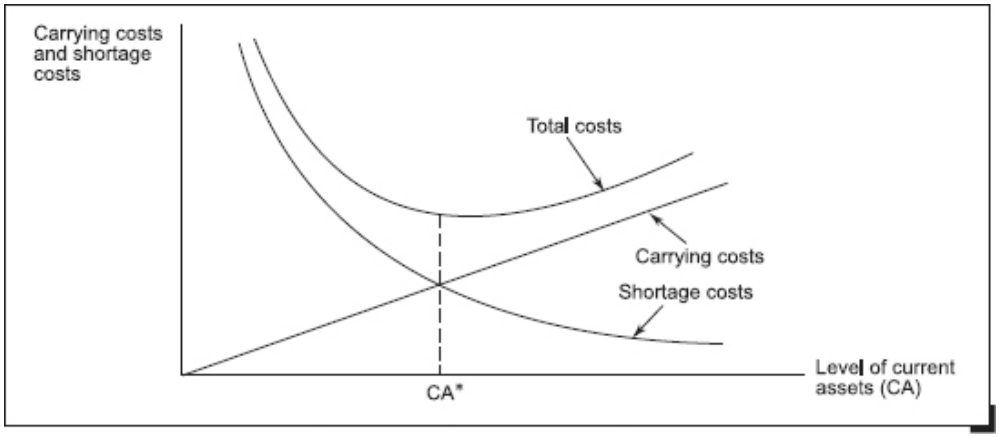
Conditions of Supply The inventory of raw materials, spares, and stores depends on the conditions of supply. If the supply is prompt and adequate, the firm can manage with small inventory. However, if the supply is unpredictable and scant, then the firm, to ensure continuity of production, would have to acquire stocks as and when they are available and carry larger inventory, on an average. A similar policy may have to be followed when the raw material is available only seasonally and production operations are carried out round the year.

23.4 CURRENT ASSETS FINANCING POLICY

After establishing the level of current assets, the firm must determine how these should be financed. What mix of long-term capital and short-term debt should the firm employ to support its current assets?

Exhibit 23.5 depicts how total assets - and hence the capital requirements - change over time for a growing firm. For the sake of simplicity, assets are divided into two classes, viz. **fixed assets** and **current assets**. Fixed assets are assumed to grow at a constant rate which reflects the secular rate of growth in sales. Current assets, too, are expected to display the same long-term rate of growth; however, they exhibit substantial variation around the trend line, thanks to seasonal (or even cyclical) patterns in sales and/or purchases.

Exhibit 23.4 **Carrying Costs and Shortage Costs**



The investment in current assets may be broken into two parts: **permanent current assets** and **temporary current assets**. The former represents what the firm requires even at the bottom of its sales cycle; the latter reflects a variable component that moves in line with seasonal fluctuations.

Several strategies are available to a firm for financing its capital requirements. Three strategies are illustrated by lines *A*, *B*, and *C* in Exhibit 23.5.

***Strategy* A:** Long-term financing is used to meet fixed asset requirements as well as peak working capital requirements. When the

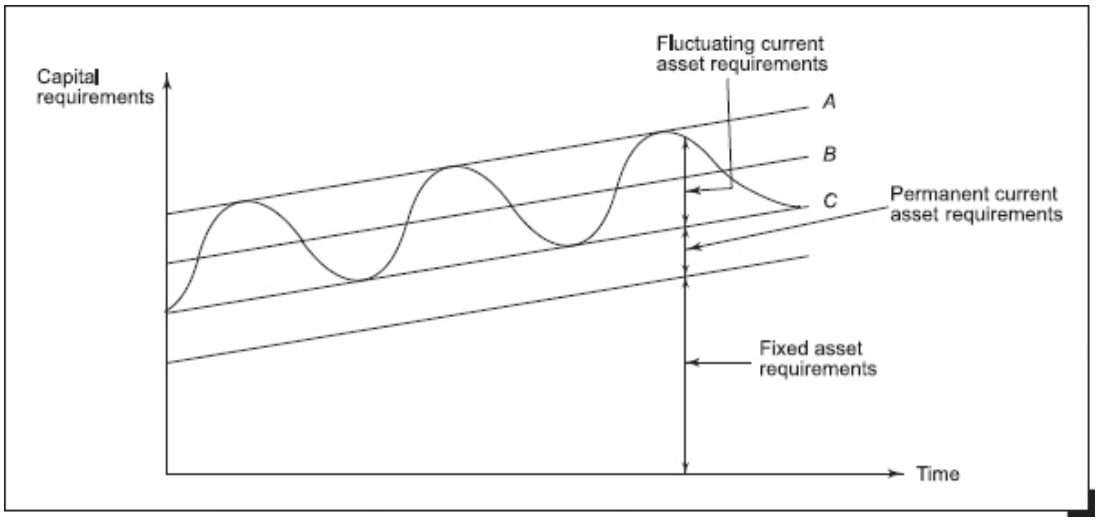
working capital requirement is less than its peak level, the surplus is invested in liquid assets (cash and marketable securities).

***Strategy* B:** Long-term financing is used to meet fixed asset requirements, permanent working capital requirements, and a portion of fluctuating working capital requirements. During seasonal upswings, short-term financing is used; during seasonal downswings, surplus is invested in liquid assets.

***Strategy* C:** Long-term financing is used to meet fixed asset requirements and permanent working capital requirements. Short-term financing is used to meet fluctuating working capital requirements.

The Matching Principle According to this principle, the maturity of the sources of financing should match the maturity of the assets being financed. This means that fixed assets and permanent current assets should be supported by long-term sources of finance, whereas fluctuating current assets must be supported by short-term sources of finance. Strategy *C* in Exhibit 23.5 reflects the matching principle.

Exhibit 23.5 **Capital Requirements and Their Financing**



The rationale for the matching principle is fairly straightforward. If a firm finances a long-term asset (say, machinery) with a short-term debt (say, commercial paper), it will have to periodically re-finance the asset. Whenever the short-term debt falls due, the firm has to re-finance the assets. This is risky as well as inconvenient. Hence, it makes sense to

ensure that the maturity of the assets and the sources of financing are properly matched.

23.5 OPERATING CYCLE AND CASH CYCLE

The investment in working capital is influenced by four key events in the production and sales cycle of the firm:

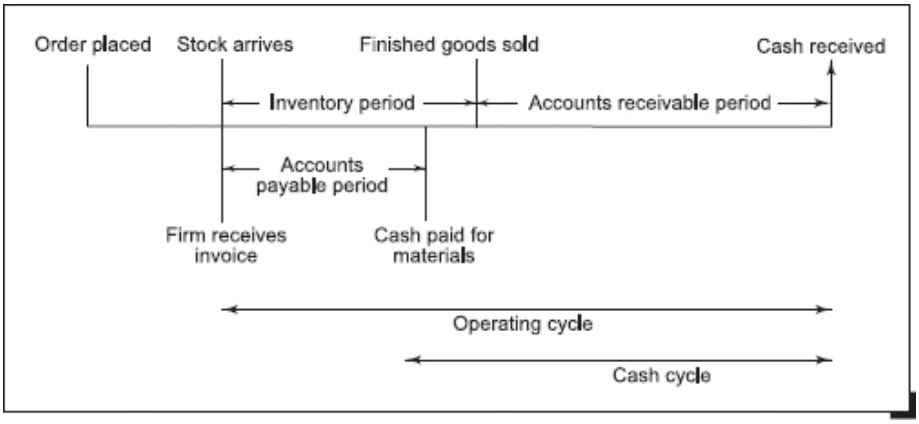
- Purchase of raw materials
- Payment for raw materials
- Sale of finished goods
- Collection of cash for sales

Exhibit 23.6 depicts these events on the cash flow line. The firm begins with the purchase of raw materials which are paid for after a delay which represents the accounts payable period. The firm converts the raw materials into finished goods and then sells the same. The time lag between the purchase of raw materials and the sale of finished goods is the inventory period. Customers pay their bills some time after the sales. The period that elapses between the date of sales and the date of collection of receivables is the accounts payable period (debt period).

The time that elapses between the purchase of raw materials and the collection of cash for sales is referred to as the **operating cycle**, whereas the time length between the payment for raw material purchases and the collection of cash for sales is referred to as the **cash cycle**. The operating cycle is the sum of the inventory period and the accounts receivable period, whereas the cash cycle is equal to the operating cycle less the accounts payable period.

From the financial statements of the firm, we can estimate the inventory period, the accounts receivable period, and the accounts payable period.

Exhibit 23.6 **Operating and Cash Cycle**



$$\text{Inventory period} = \frac{\text{Average inventory}}{\text{Annual cost of goods sold}/365}$$

$$\text{Accounts receivable period} = \frac{\text{Average accounts receivable}}{\text{Annual sales}/365}$$

$$\text{Accounts payable period} = \frac{\text{Average accounts payable}}{\text{Annual cost of goods sold}/365}$$

Exhibit 23.7 provides the relevant information for Horizon Limited. Based on this information, we calculate several things:

$$\text{Inventory period} = \frac{(96+102)/2}{720/365} = 50.1 \text{ days}$$

$$\text{Accounts receivable period} = \frac{(86+90)/2}{800/365} = 40.2 \text{ days}$$

$$\text{Accounts payable period} = \frac{(56+60)/2}{720/365} = 29.4 \text{ days}$$

$$\text{Operating cycle} = \underbrace{50.1}_{\text{Inventory period}} + \underbrace{40.2}_{\text{Accounts receivable period}} = 90.3 \text{ days}$$

$$\text{Cash cycle} = \underbrace{90.3}_{\text{Operating cycle}} - \underbrace{29.4}_{\text{Accounts payable period}} = 60.9 \text{ days}$$

Exhibit 23.7 **Financial Information for Horizon Limited**

			Balance Sheet Data	
	Profit & Loss Account Data		*Beginning of 20X0*	*End of 20X0*
Sales	800	Inventory	96	102
Cost of goods	720	Trade receivable	86	90
sold		Trade payable	56	60

Thus, Horizon Limited takes about two months to collect payment from its customers from the time it pays for its inventory purchases.

It is helpful to monitor the behaviour of overall operating cycle and its individual components. For this purpose, time-series and cross-section analysis may be done. In time-series analysis, the duration of the operating cycle and its individual components is compared over a period of time for the same firm. In cross-section analysis, the duration of the operating cycle and its individual components is compared with that of other firms of a comparable nature.

Negative Cash Cycle

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

People Involved in Managing the Operating Cycle

In a large organisation, a number of different financial and nonfinancial managers are involved in managing the various facets of the operating cycle, as illustrated in Exhibit 23.8.

Exhibit 23.8 **Managers Who Deal with Short-term Financial Problems**

Title of manager	*Duties related to short-term financial management*	*Assets/liabilities influenced*
Cash manager	Collection, concentration, and disbursement; short-term investments; short-term borrowing; banking relations	Cash, marketable securities, and short-term loans
Credit manager	Monitoring and control of accounts receivable; credit policy decisions	Trade receivables
Marketing manager	Credit policy decisions	Trade receivables
Purchasing manager	Decisions on purchases, suppliers; may negotiate payment terms	Inventory, trade payables
Production manager	Setting of production schedules and materials requirements	Inventory, trade payables
Payables manager	Decisions on payment policies and on whether to take discounts	Trade payables
Controller	Accounting information on cash flows: reconciliation trade payables application of payments to trade receivables	Trade receivables, trade payables

with current assets. The former are referred to as **carrying costs** and the latter as **shortage costs**.

- According to **the maturity principle**, the maturity of the sources of finance should match the maturity of the assets being financed. This means that fixed assets and permanent current assets should be supported by long-term sources of finance, whereas fluctuating current assets must be supported by short-term sources of finance.
- The **operating cycle** of a firm begins with the acquisition of raw materials and ends with the collection of receivables. It may be divided into four stages: (i) raw materials and stores stage, (ii) work-in-process stage, (iii) finished goods inventory stage, and (iv) debtors collection stage.
- To estimate the cash requirement for working capital, you may follow a two step procedure: (i) Estimate the cash cost of various current assets required by the form. (ii) Deduct the spontaneous current liabilities from the cash cost of current assets.

QUESTIONS

1. What are the two important characteristics of current assets? What are their implications for working capital management?
2. What factors have an important bearing on working capital needs?
3. What are the consequences of flexible and restrictive policies with respect to the level of current assets?
4. Discuss the kind of tradeoff involved in determining the optimal level of current assets.
5. How do total assets change over time for a growing firm?
6. What strategies are available to a firm for financing its working capital requirement?
7. What is the rationale for the matching principle?
8. What is operating cycle?
9. What is cash cycle?

SOLVED PROBLEMS

23.1 The following annual figures relate to XYZ Co. (CA May 1990)

	₹
Sales (at two months' credit)	3,600,000
Materials consumed (suppliers extend two months credit)	900,000
Wages paid (monthly in arrear)	720,000

Manufacturing expenses outstanding at the end of the year	80,000
(Cash expenses are paid one month in arrear)	
Total administrative expenses, paid as above	240,000
Sales promotion expenses, paid quarterly in advance	120,000

The company sells its products at a gross profit of 25 percent counting depreciation as part of the cost of production. It keeps one month's stock each of raw materials and finished goods, and a cash balance of ₹ 100,000.

Assuming a 20 percent safety margin, calculate the working capital requirements of the company on cash cost basis. Ignore work-in-process.

Solution

A. Current Assets

Item	*Calculation*	*Amount*
Debtors	$\frac{\text{Total cash cost}}{12} \times 2 = \frac{2,940,000 \times 2}{12}$	490,000
Raw material stock	$\frac{\text{Material cost}}{12} \times 1 = \frac{900,000}{12}$	75,000
Finished good stock	$\frac{\text{Cash manufacturing cost}}{12} \times 1 = \frac{2,580,000}{12}$	215,000
Pre-paid sales promotional expenses	Quarterly sales promotional expenses	30,000
Cash balance	A predetermined amount	100,000
	A : Current Assets	910,000

B. Current Liabilities

Item	*Calculation*	*Amount*
Sundry creditors	$\frac{\text{Material cost}}{12} \times 2 = \frac{900,000 \times 2}{12}$	150,000
Manufacturing expenses outstanding	One month's cash manufacturing expenses	80,000
Wages outstanding	One month's wages	60,000
Total administrative expenses outstanding	One month's total administrative expenses	20,000
	B : Current Liabilities	310,000
Working capital (A – B)		600,000
Add 20 percent safety margin		120,000
Working capital required		720,000

Working Notes

1. Manufacturing expenses
   Sales 3,600,000

Less: Gross profit (25%)		900,000
Total manufacturing cost		2,700,000
Less: Materials	900,000	
Wages	720,000	
	1620,000	
Manufacturing expenses		1080,000
2. Cash manufacturing expenses (₹ 80,000 × 12)		960,000
3. Depreciation: (1) –(2)		120,000
4. Total cash cost		
Total manufacturing cost		2,700,000
Less: Depreciation		120,000
Cash manufacturing cost		2,580,000
Add Total administrative expenses		240,000
Sales promotion expenses		120,000
Total cash cost		2,940,000

23.2 The relevant financial information for Xavier Limited for the year ended 20X1 is given below.

Profit and Loss Account Data (₹ million)			*Balance Sheet Data Beginning of 20X1*	*End of 20X1*
Sales	80	Inventory	9	12
Cost of goods sold	56	Accounts receivable	12	16
		Accounts payable	7	10

What is the length of the operating cycle? The cash cycle? Assume 365 days to a year.

Solution

Operating cycle : Inventory period + Accounts receivable period

Inventory period : $\frac{\text{Average inventory}}{\text{Annual cost of goods sold}/365} = \frac{(9+12)/2}{56/365}$ = 68.4 days

Accounts receivable period : $\frac{\text{Average accounts receivable}}{\text{Annual sales}/365} = \frac{(12+16)/2}{80/365}$ = 63.9 days

Accounts payable period : $\frac{\text{Average accounts payable}}{\text{Annual cost of goods sold}/365} = \frac{(7+10)/2}{56/365}$ = 55.4 days

Operating cycle = 68.4 + 63.9 = 132.3 days

Cash operating cycle = Operating cycle – Accounts payable period

= 132.3 – 55.4

= 76.9 days

PROBLEMS

23.1 Operating Cycle and Cash Cycle The relevant information for Zenith Limited is given below:

Profit and Loss Account Data		*Balance Sheet Data*		
			Beginning of 20X0	*End of 20X0*
Sales	500	Inventory	60	64
Cost of goods sold	360	Accounts receivable	80	88
		Accounts payable	40	46

What is the length of the operating cycle? The cash cycle?

23.2 Operating Cycle and Cash Cycle The relevant information for Apex Limited is given below:

Profit and Loss Account Data		*Balance Sheet Data*		
			Beginning of 20X0	*End of 20X0*
Sales	1000	Inventory	110	120
Cost of goods sold	750	Accounts receivable	140	150
		Accounts payable	60	66

What is the length of the operating cycle? The cash cycle?

23.3 Working Capital Requirement The following annual figures relate to XYZ Co.

	₹
Sales (at two months' credit)	300,000
Materials consumed (suppliers extend two months credit)	700,000
Wages paid (monthly in arrear)	600,000
Manufacturing expenses outstanding at the end of the year (Cash expenses are paid one month in arrear)	70,000
Total administrative expenses, paid as incurred	200,000
Sales promotion expenses, paid quarterly in advance	100,000

The company sells its products on gross profit of 20 percent counting depreciation as part of the cost of production. It keeps two months' stock each of raw materials and finished goods, and a cash balance of ₹ 80,000.

Assuming a percent safety margin, work out the working capital requirements of the company on cash cost basis. Ignore work-in-process.

MINICASE

Naveenbhai, the senior partner of Patel and Co., is furious that his bank has not increased their cash credit limit fixed two years back despite repeated requests for enhancement. He has been waiting only for the estimated financial statements for financial year that ended last week, to make a last and final request to their present bankers for a need based increase in the limit. Today the provisional papers are ready and he has asked the finance manager Malav to make out a strong case for a considerable hike in the cash credit facility.

From his frequent interactions with the credit manager at the bank, Malav knows that as the bank does not have any set norms for a manufacturing firm of their type, they usually rely on the financial statements of the previous year (see below) to decide on the appropriate holding levels for debtors, creditors, inventory etc., and the profitability margin. Based on the orders on hand and expected, he projects enhanced net sales of ₹ 800 million. To earn brownie points in the eyes of the bank, he decides to assume that for the current year there would not be any increase in the sales and administration expenses and depreciation and that the minimum cash holding would be drastically cut to just half of that for the previous year. He also decides to add only a very modest safety margin of just five percent over the amount of working capital to be calculated on total cash cost basis. He remembers in time to provide a hike of ten percent in the salaries and wages figure for the current year to keep up the promise made by Naveenbhai to the workers.

For simplifying the calculations, he assumes that the gross profit margin and the raw material purchases for the current year as a proportion to sales would remain unchanged.

Relevant information on the financial performances of the just completed year are as under:

(Amount in ₹ million)

Net sales	701	Holding period for raw materials	59 days
Cost of goods sold	552	Holding period for finished goods	11 days
Raw materials purchased	449	Average receivable collection period	47 days
Sales & administrative expenses (paid as and when incurred)	30	Average trade credit period enjoyed	55 days
		Average cash holding level	10
Depreciation	30	Cash manufacturing expenses are paid one month in arrear	
Salaries & wages paid (one month in arrear)	68		

(1) What would be the total cash cost for the current year?

(2) What would be the working capital requirement for the current year?

Show his detailed workings.

PRACTICAL ASSIGNMENT

Comment on the current asset policy and current asset financing policy of the company selected by you. Calculate the operating cycle of the firm, making suitable assumptions.

27.1 ACCRUALS

The major accrual items are wages and taxes. These are simply what the firm owes to its employees and to the government. Wages are usually paid on a weekly, fortnightly, or monthly basis - between payments, the amounts owed but not yet paid are shown as accrued wages on the balance sheet. Income tax is payable quarterly and other taxes may be payable half-yearly or annually. In the interim, taxes owed but not paid may be shown as accrued taxes on the balance sheet.

Accruals vary with the level of activity of the firm. When the activity level expands, accruals increase and when the activity level contracts accruals decrease. As they respond more or less automatically to changes in the level of activity, accruals are treated as part of spontaneous financing.

Since no interest is paid by the firm on its accruals, they are often regarded as a ‘free’ source of financing. However, a closer examination would reveal that this may not be so. When the payment cycle is longer, wages may be higher. For example, an employee earning ₹ 2000 per week and receiving weekly payment may ask for a slightly higher compensation if the payment is made monthly. Likewise, when the payment period is longer, tax authorities may raise the tax rates to some extent. Even when such adjustments are made, the fact remains that between established payment dates accruals do not carry any explicit interest burden.

While accruals are a welcome source of financing, they are typically not amenable to any significant control by management. The payment period for employees is determined by the practice in industry and provisions of law. Similarly, tax payment dates are given by law and postponement of payment normally results in penalties.

27.2 TRADE CREDIT

Trade credit represents the credit extended by the suppliers of goods and services. It is a spontaneous source of finance in the sense that it arises in the normal transactions of the firm without specific negotiations, provided the firm is considered creditworthy by its supplier. It is an important source of finance representing 25 percent to 50 percent of short-term financing.

Obtaining Trade Credit The confidence of suppliers is the key to securing trade credit. What do suppliers look for in granting trade credit? Among the things that suppliers consider are:

- *Earnings record over a period of time* If the firm has a fairly good earnings record with a good portion of it ploughed back in the business, it is looked upon favourably.
- *Liquidity position of the firm* Suppliers naturally look at the ability of the firm to meet its obligations in the short run. Such ability is usually measured by the current ratio and the acid-test ratio.
- *Record of payment* If the firm has been prompt and regular in paying the bulk of the suppliers in the past, it is deemed to be creditworthy.

Cultivating Good Supplier Relationships While a well-established, successful enterprise may have no difficulty in obtaining trade credit, a new company or one with financial problems will probably face difficulty in obtaining it. The confidence of suppliers, a pre-condition for obtaining trade credit, can be earned by discussing the financial situation, by showing realistic plans, and, more important, by honouring commitments. The last point, namely, honouring commitments is very important. Broken promises erode confidence more than poor operating results. It is better to make modest commitments which may not be fully satisfying to the supplier and honour them rather than make tall promises, that gratify the supplier, and fail to honour them.

Cost of Trade Credit The cost of trade credit depends on the terms of credit offered by the supplier. If the terms are, say, 30 days net, then trade credit is cost-free because the amount payable is the same whether the payment is made on purchase or on the 30th day. However, if the supplier offers discount for prompt payment and the terms are, say, 2/10 net 30, there is a cost associated with trade credit availed beyond the discount

period. In such a case, we may divide the 30-day period into two parts as follows:

$$\underset{\text{Discount period}}{\overset{10\text{ days}}{\overline{\qquad\qquad}}} \quad \underset{\text{Non-discount period}}{\overset{20\text{ days}}{\overline{\qquad\qquad}}}$$

The cost of trade credit during the discount period is nil. However, if the firm decides to take the additional 20 days credit, it has to pay a finance charge equal to the 2% discount it foregoes. So, the nominal cost, on an annual basis, of not taking discounts, when the terms 2/10, net 30 apply, is:

$$\text{Nominal annual cost} = \frac{\text{Discount percent}}{100 - \text{Discount percent}} \times \frac{365}{\text{Days credit} - \text{Discount period}}$$

$$= \frac{2}{98} \times \frac{365}{20} = 2.04\% \times 18.25 = 37.2\%$$

The nominal annual cost formula does not consider compounding. So, the cost of trade credit in terms of the effective annual interest rate is even higher. In our example, the periodic interest rate is .02/0.98 = .0204 and there are 365/20 = 18.25 “interest periods” per year. So the effective annual cost of trade credit is:

Effective annual rate = $(1.0204)^{18.25} - 1.0 = 1.4459 - 1.0 = 44.6\%$

So far we assumed that if the firm does not avail of discount it will pay by the 30th day. What happens if the firm pays late, say on the 50th day. In this case the effective interest period would become 50 − 10 = 40 and the number of times discount would be foregone in a year would fall to 365/40 = 9.13. Hence, the nominal cost would fall from 37.2% to 2.04% × 9.13 = 18.6%. And the effective annual rate would fall from 44.6% to 20.3%.

Effective annual rate = $(1.0204)^{9.13} - 1 = 0.203$ or 20.3%

From the foregoing discussion two things are clear:

1. In general the cost of trade credit is very high beyond the discount period and unless the firm is hard pressed financially it should not forego the discount for prompt payment.
2. If the firm is unable to avail of the discount for prompt payment, it should delay the payment till the last day of the net period, and even beyond if such an action does not impair the credit worthiness of the firm.

27.3 WORKING CAPITAL ADVANCE BY COMMERCIAL BANKS

Working capital advance by commercial banks represents the most important source for financing current assets. This section discusses the following aspects of this source of finance: (i) application and processing, (ii) sanction and terms and condition, (iii) forms of bank finance, (iv) nature of security, and (v) margin amount.

Application and Processing A customer seeking an advance is required to submit an appropriate application form and there are different types of application forms for different categories of advances. The information furnished in the application covers, *inter alia*, the following: the name and address of the borrower and his establishment; the details of the borrower's business; the nature and the amount of security offered. The application form has to be supported by various ancillary statements like financial statements and financial projections of the firm.

The application is processed by the credit department of the bank. This primarily involves an examination of the following factors: (i) ability, integrity, and experience of the borrower in the particular business, (ii) general prospects of the borrower's business, (iii) purpose of advance, (iv) requirement of the borrower and its reasonableness, (v) adequacy of the margin, (vi) provision of security, and (vii) period of repayment.

Sanction and Terms and Conditions Once the application is duly processed, it is put up for sanction to the appropriate authority. The sanctioning powers of various officials—like Branch Manager, Regional Manager, General Manager, etc—are defined by virtue of the position they occupy.

If the sanction is given by the appropriate authority, along with the sanction of advance the bank specifies the terms and conditions applicable to the advance. These usually cover the following: (i) the amount of loan or the maximum limit of the advance, (ii) the nature of the advance, (iii) the period for which the advance will be valid, (iv) the rate of interest applicable to the advance, (v) the primary security to be charged, (vi) the insurance of the security, (vii) the details of collateral security, if any, to be provided, (viii) the margin to be maintained, and (ix) other restrictions or obligations on the part of the borrower. It is a common banking practice to incorporate

important terms and conditions on a stamped security document to be executed by the borrower. This helps the bank to create the required charge on the security offered and also obligates the borrower to observe the stipulated terms and conditions.

Forms of Bank Finance Working capital advance is provided by commercial banks in three primary ways: (i) cash credits/overdrafts, (ii) loans, and (iii) purchase/discount of bills. In addition to these forms of direct finance, commercial banks help their customers in obtaining credit from other sources through the letter of credit arrangement.

Cash Credits/Overdrafts Under a cash credit or overdraft arrangement, a pre-determined limit for borrowing is specified by the bank. The borrower can draw as often as required provided the outstandings do not exceed the cash credit/overdraft limit. The borrower also enjoys the facility of repaying the amount, partially or fully, as and when he desires. Interest is charged only on the running balance, not on the limit sanctioned. A minimum charge may be payable, irrespective of the level of borrowing, for availing this facility. This form of advance is highly attractive from the borrower's point of view because while the borrower has the freedom of drawing the amount in installments as and when required, interest is payable only on the amount actually outstanding. This facility, typically sanctioned for a period of one year, is usually renewed each year subject to satisfactory conduct of the account.

Loans These are advances of fixed amounts which are credited to the current account of the borrower or released to him in cash. The borrower is charged with interest on the entire loan amount, irrespective of how much he draws. In this respect this system differs markedly from the overdraft or cash credit arrangement wherein interest is payable only on the amount actually utilised. Loans are payable either on demand or in periodical installments. When payable on demand, loans are supported by a demand promissory note executed by the borrower. There is often a possibility of renewing the loan.

Purchase/Discount of Bills Bills are of two types : commercial bills and accommodation bills. A commercial bill arises out of a trade transaction, whereas an accommodation bill is created to raise short-term funds and is not backed by a trade transaction. Our discussion relates to commercial bills. A bill arises out of a trade transaction. The seller of goods draws the bill on the purchaser. The bill may be either clean or documentary (a

documentary bill is supported by a document of title to goods like a railway receipt or a bill of lading) and may be payable on demand or after a usance period. Unless the buyer is a top rated party, the usual procedure is as follows: The seller's bank purchases/discounts the bill and sends it to the buyer's bank for collection. The buyer's bank releases the documents to the buyer on receipt of payment in case of a demand bill or on the buyer accepting to pay on due date, in case of a usance bill, which does not usually exceed 90 days. On acceptance of the bill by the purchaser, the seller offers it to the bank for discount/purchase. When the bank discounts/purchases the bill it releases the funds to the seller. The bank presents the bill to the purchaser (the acceptor of the bill) on the due date and gets its payment.

Letter of Credit A letter of credit is an arrangement whereby a bank helps its customer to obtain credit from its (customer's) suppliers. When a bank opens a letter of credit in favour of its customer for some specific purchases, the bank undertakes the responsibility to honour the payment obligation of its customer, should the customer fail to do so. To illustrate, suppose a bank opens a letter of credit in favour of A for some purchases that A plans to make from B. If A does not make payment to B within the credit period offered by B, the bank assumes the liability of A for the purchases covered by the letter of credit arrangement. Naturally, B would have less hesitation to extend credit to A when a bank opens a letter of credit in favour of A. It is clear from the preceding discussion that under a letter of credit arrangement the credit is provided by the supplier but the risk is assumed by the bank which opens the letter of credit. Hence, this is an indirect or non-fund based form of financing as against overdraft, cash credit, loans, and bill purchasing/discounting which are direct forms of financing. Note that in direct financing the bank assumes risk as well as provides financing.

Bank Guarantee A bank guarantee, like a letter of credit, is a non-fund based form of working capital financing. A bank guarantee is obtained by a buyer or seller to reduce the risk of loss to the opposite party due to non-performance of the agreed task. For example a buyer (B1), who is buying some product from a seller (S1), may obtain a bank guarantee and give to the seller (S1) to protect the seller from the risk of nonpayment. Likewise the seller (S1) may obtain a bank guarantee and give it to the buyer (B1) and protect him from the risk of getting lower quality goods or delayed delivery of goods. A bank guarantee can be revoked by the holder only in

the event of non-performance by the counter-party. To provide the bank guarantee, the bank charges a commission and may also ask for security.

Security For working capital advances, commercial banks seek security either in the form of hypothecation or in the form of pledge.

- *Hypothecation* Under this arrangement, the owner of the goods borrows money against the security of movable property, usually inventories. The owner does not part with the possession of property. The rights of the lender (hypothecatee) depend upon the agreement between the lender and the borrower (hypothecator). Should the borrower default in paying his dues, the lender (hypothecatee) can file a suit to realise his dues by selling the goods hypothecated.
- *Pledge* In a pledge arrangement, the owner of the goods (pledgor) deposits the goods with the lender (pledgee) as security for the borrowing. Transfer of possession of goods is a precondition for pledge. Possession of goods could be actual or constructive. An example of constructive possession is when the goods are stored in a secure godown of the borrower but the same is locked by the bank with its own locks. The lender (pledgee) is expected to take reasonable care of goods pledged with him. The pledge contract gives the lender (pledgee) the right to sell goods and recover dues, should the borrower (pledgor) default in paying debt.

Margin Amount Banks do not provide hundred percent finance. They insist that the customer should bring a portion of the required finance from own sources. This portion is known as the margin amount. How is the margin amount established? While there is no fixed formula for determining the margin amount, the following guideline is broadly observed: ‘Usually the margin is kept higher for raw materials and lower for accounts receivable.’

27.4 REGULATION OF BANK FINANCE

Concerned about such a distortion in credit allocation, the Reserve Bank of India (RBI) has been trying, particularly from the mid-1960s onwards, to bring a measure of discipline among industrial borrowers and to redirect credit to the priority sectors of the economy. From time to time, the RBI has been issuing guidelines and directives to the banking sector toward this end. These have stemmed from the recommendations of specially constituted groups. The following committees have significantly shaped the regulation of bank finance for working capital in India: the Dahejia Committee, the Tandon Committee, the Chore Committee, and the Marathe Committee. The key elements of regulation are discussed below.

Norms for Inventory and Receivables In the mid-1970s, the RBI accepted the norms for raw materials, stock-in-progress, finished goods, and receivables that were suggested by the Tandon Committee for fifteen major industries. These norms were based, *inter alia*, on company finance studies made by the Reserve Bank of India, process periods in different industries, discussions with industry experts, and feedback received on the interim reports. These norms represented the maximum levels for holding inventory and receivables in each period.

From the mid-1980s onwards, special committees were set up by the RBI to prescribe norms for several other industries and revise norms for some industries covered by the Tandon Committee. However, in the wake of liberalisation, banks have been freed from RBI-prescribed norms. Nevertheless, most banks seem to take into account the maximum permissible bank finance under the second method of Tandon Committee.

Maximum Permissible Bank Finance The Tandon Committee had suggested three methods for determining the maximum permissible bank finance (MPBF). To describe these methods, the following notation is used.

CA = current assets as per the norms laid down
CL = non-bank current liabilities like trade credit and provisions
CCA = core current assets - this represents the permanent component of working capital

The methods for determining the MPBF are described below:

Method 1	MPBF = 0.75 (CA − CL)
Method 2	MPBF = 0.75 (CA) − CL
Method 3	MPBF = 0.75 (CA − CCA) − CL

To illustrate the calculation of the MPBF under the three methods, consider the data for Ambex Company:

Current Assets[1]	₹ *(in millions)*
Raw material	18
Work-in-process	5
Finished goods	10
Receivables (including bills discounted)	15
Other current assets	2
Total	50
Current Liabilities	
Trade creditors	12
Other current liabilities	3
Bank borrowings (including bills discounted)	25
Total	40

The MPBF for Ambex Company as per the three methods is as follows:

Method 1	0.75 (CA − CL) = 0.75 (50 − 15)	= ₹ 26.25 million
Method 2	0.75 (CA) − CL = 0.75 (50) − 15	= ₹ 22.5 million
Method 3	0.75 (CA − CCA) − CL = 0.75 (50 − 20[2]) − 15	= ₹ 7.5 million

The second method is informally followed by many banks. Note that under this method the minimum current ratio works out to be 1.33. An example will illustrate this point. Suppose the current assets and current liabilities (excluding bank finance) for a firm are 100 and 50 respectively. The MPBF will be:

$$0.75\,(CA) - CL = 0.75\,(100) - 50 = 25$$

This means that the current liabilities including MPBF will be: 50 + 25 = 75. Hence, the current ratio works out to 100/75 = 1.33.

Other Methods for Assessing Working Capital Requirements

Apart from the maximum permissible bank finance (MPBF) method, two other methods are used for assessing the working capital financing need: turnover method and cash flow method.

Turnover Method The experience with the MPBF method suggested that small scale industries (SSIs) were not able to get adequate bank finance as many of them were not able to bring in 25 percent of their current asset requirement from long-term sources of finance. To address their problems, the turnover method was introduced, on the recommendations of the Nayak Committee. Under this method, the working capital requirement is assessed at 25 percent of the annual turnover (sales) and the borrower is expected to bring in 5 percent of the turnover. For example, if a company projects a turnover of ₹ 20 crore for the following year, the working capital requirement is estimated at ₹ 5 crore (25% of ₹ 20 crore) and the borrower is required to bring in ₹ 1 crore (5% of ₹ 20 crore). The working capital finance by the banks is limited to ₹ 4 crore (20% of the projected turnover).

Cash Budget Method A cash budget shows the projected opening cash balance, inflows, outflows, and closing cash balance, month by month, for the next year. It indicates when cash deficits would occur. Based on this, the bank may set the working capital limit equal to the peak deficit. However, the amount allowed to be drawn is limited to the actual deficit.

Forms of Assistance Traditionally, bank credit to industry has been mainly in the form of cash credit which was introduced by the Scottish bankers. Under the cash credit system, the bank bears the responsibility of cash management because the borrowers have the freedom to determine their drawals within the cash credit limit provided by the bank.

With a view to bringing about a better discipline in the utilisation of bank credit, in 1995 a “loan” system for delivery of bank credit was introduced. Under the new dispensation, within the MPBF so arrived at in terms of the extant guidelines, banks/consortia/syndicates are required to restrict sanction of cash credit limits to borrowers up to a certain portion (which is currently 25 percent)[3] of the MPBF. Where borrowers desire to avail of bank credit for the balance portion (which is currently 75 percent) of the MPBF, or any part thereof, this will be considered on merit by banks/consortia/syndicates in the form of a short-term loan (or loans) repayable on demand for working capital purpose for a stipulated period. Banks/consortia/syndicates will have the discretion to stipulate repayment of the short-term loan for working capital purposes by a borrower in instalments or by way of a “bullet” or “balloon” payment. In case the loan is repaid before the due date, it will be credited to the cash credit account.

Information and Reporting System The current information and reporting system followed by banks has been shaped largely by the Chore Committee recommendations. Its key components are as follows:

1. *Quarterly Information System—Form I* This gives (i) the estimates of production and sales for the current year and the ensuing quarter, and (ii) the estimates of current assets and liabilities for the ensuing quarter.
2. *Quarterly Information System—Form II* This gives (i) the actual production and sales during the current year and for the latest completed year, and (ii) the actual current assets and liabilities for the latest completed quarter.
3. *Half-yearly Operating Statements—Form III* This gives the actual operating performance for the half-year ended against the estimates for the same.
4. *Half-yearly Funds Flow Statement—Form IIIB* This give the sources and uses of funds for the half-year ended against the estimates for the same.

The thrust of the information and reporting system is (i) to strengthen the partnership between the borrower and the banker, (ii) to give the banker a deeper insight into the operations and funds requirements of the borrower, and (iii) to enable the banker to monitor closely the performance and efficiency of the borrower.

Credit Monitoring Based largely on the recommendations of the Marathe Committee, the RBI replaced its Credit Authorisation Scheme by its Credit Monitoring Arrangement in 1988. Under this, the RBI does post-sanction scrutiny of working capital limits provided by banks beyond the prescribed cut-off levels. The key issues examined in this scrutiny are:

- Whether the minimum current ratio is 1.33?
- Whether the estimate of sales, production, profit, current assets, and current liabilities are in line with past trends? If they differ, what is the justification for the deviation?
- Whether the unit has complied with the Chore Committee information system requirements?
- Whether the renewals of limits is in time?
- Whether the bank is following the norms for inventory and receivables prescribed by the RBI Standing Committee? If the bank has a different set of norms, what is the justification for the same?

27.5 PUBLIC DEPOSITS

Many firms, large and small, have solicited unsecured deposits from the public in recent years, mainly to finance their working capital requirements.

Cost The interest rate payable on public deposits was subject to a ceiling till mid-1990s. Just before the ceiling was withdrawn, it was 15 percent. Companies typically offer an interest rate varying between 8 to 12 or even more percent depending on the tenor of the deposit.

Regulation The regulation of public deposits underwent an overhaul with the introduction of stringent regulations under The Companies Act 2013. Chapter V of the new Act under Section 73 provides for several new requirements read with the rules framed thereunder. The important features of this regulation are:

1. Public deposits cannot exceed 25 percent of share capital and free reserves.
2. The maximum maturity period allowed for public deposits is 3 years and the minimum is 6 months. For Non-banking Financial Corporations (NBFCs), however, the maximum permitted maturity period is 5 years.
3. A company which has public deposits is required to set aside, as deposit or investment, by 30th April of each year, an amount equal to 15 percent of the deposits maturing by 31st March of the following year. The amount which shall be called a deposit reserve shall be deposited in a scheduled bank and can be used only for repaying such deposits.
4. A company inviting deposits from the public is required to disclose certain facts about its financial performance and position.
5. The company has to issue a circular to all its members disclosing its financial position, credit rating, details regarding existing deposits and other particulars as prescribed.
6. The company has to provide for deposit insurance.
7. The company has to provide security, if any, to secure the repayment of the deposits.

Evaluation From the point of view of the company, public deposits offer the following advantages:

- The procedure for obtaining public deposits is fairly simple.
- No restrictive covenants are involved.
- No security is offered against public deposits. Hence the mortgageable assets of the firm are conserved.
- The post-tax cost is fairly reasonable.

The demerits of public deposits are:

- The quantum of funds that can be raised by way of public deposits is limited.
- The maturity period is relatively short.

From the point of view of investors, public deposits have the following advantages:

- The rate of interest is higher than several alternative forms of financial investment.
- The maturity period is fairly short - one to three years.

The disadvantages of public deposits are as follows:

- There is no security offered by the company.
- The interest on public deposits is not exempt from taxation.

27.6 INTER-CORPORATE DEPOSITS

A deposit made by one company with another, normally for a period up to six months, is referred to as an inter-corporate deposit. Such deposits are usually of three types:

Call Deposits In theory, a call deposit is withdrawable by the lender on giving a day's notice. In practice, however, the lender has to wait for at least three days.

Three-months Deposits More popular in practice, these deposits are taken by borrowers to tide over a short-term cash inadequacy that may be caused by one or more of the following factors : disruption in production, excessive imports of raw material, tax payment, delay in collection, dividend payment, and unplanned capital expenditure.

Six-months Deposits Normally, lending companies do not extend deposits beyond this time frame. Such deposits, usually made with first-class borrowers, carry an interest rate that is higher.

Characteristics of the Inter-Corporate Deposit Market It may be of interest to note the following characteristics of the inter-corporate deposit market.

Lack of Regulation The lack of legal hassles and bureaucratic red tape makes an inter-corporate deposit transaction very convenient. In a business environment otherwise characterised by a plethora of rules and regulations, the evolution of the inter-corporate deposit market is an example of the ability of the corporate sector to organise itself in a reasonably orderly manner.

Secrecy The inter-corporate deposit market is shrouded in secrecy. Brokers regard their lists of borrowers and lenders as guarded secrets. Tightlipped and circumspect, they are somewhat reluctant to talk about their business. Such disclosures, they apprehend, would result in unwelcome competition and undercutting of rates.

Importance of Personal Contacts Brokers and lenders argue that they are guided by a reasonably objective analysis of the financial situation of the borrowers. However, the truth is that lending decisions in the inter-corporate deposit markets are based on personal contacts and market information

which may lack reliability. Given the secrecy that shrouds this operation and the non-availability of hard data, can it be otherwise?

27.7 WORKING CAPITAL FINANCE BY FINANCIAL INSTITUTIONS

Financial institutions extend working capital finance on a very selective basis to borrowers enjoying credit limits with banks, whether under a consortium or under multiple banking arrangement, when the banks are not in a position to meet the credit requirements of the borrowers concerned on account of temporary liquidity constraints.

27.8 RIGHTS DEBENTURES FOR WORKING CAPITAL

Public limited companies can issue “rights” debentures to their shareholders with the object of augmenting the long-term resources of the company for working capital requirements. The key guidelines applicable to such debentures are as follows:

- The amount of the debenture issue should not exceed (a) 20 percent of the gross current assets, loans, and advances minus the long-term funds presently available for financing working capital, or (b) 20 percent of the paid-up share capital, including preference capital and free reserves, whichever is the lower of the two.
- The debt equity ratio, including the proposed debenture issue, should not exceed 1:1.
- The debentures shall first be offered to the existing Indian resident shareholders of the company on a pro rata basis.

27.9 COMMERCIAL PAPER

Commercial paper represents short-term unsecured promissory notes issued by firms which enjoy a fairly high credit rating. Generally, large firms with considerable financial strength are able to issue commercial paper. The important features of commercial paper are as follows:

- The maturity period of commercial paper ranges from 90 to 180 days.
- Commercial paper is sold at a discount from its face value and redeemed at its face value. Hence the implicit interest rate is a function of the size of the discount and the period of maturity.
- Commercial paper is generally placed with investors who intend holding it till its maturity. Hence there is no well developed secondary market for commercial paper.

Regulation Since commercial paper represents an unsecured instrument of financing, the Reserve Bank of India has stipulated certain conditions meant primarily to ensure that only financially strong companies can issue commercial paper. According to these conditions, a company can issue commercial paper provided:

- It has a tangible net worth of at least ₹ 40 million.
- It can be issued in denominations of ₹ 5 Lakh or multiples thereof.
- The issuer should have working capital limits sanctioned by financing bank/institution/s.
- Its equity is listed on a stock exchange.
- Its commercial paper receives a minimum rating of P2 from CRISIL or equivalent thereof.
- It is classified as a standard asset by the financing bank/institution.
- The minimum maturity period is 7 days and the maximum one year.

Effective Cost Commercial paper is sold at a discount from its face value and redeemed at its face value. Hence, the effective pre-tax cost of commercial paper is:

$$\left(\frac{\text{Face value} - \text{Net amount realised}}{\text{Net amount realised}}\right)\left(\frac{360}{\text{Maturity period}}\right)$$

To illustrate the calculation consider the following example:

Face value : ₹ 500,000

Maturity period	: 180 days
Net amount realised	: ₹ 480,000

The pre-tax effective cost of commercial paper in this case works out to:

$$\left(\frac{500,000 - 480,000}{480,000}\right)\left(\frac{360}{180}\right) = 8.33\,\text{percent}$$

27.10 FACTORING

A factor is a financial institution which offers services relating to management and financing of debts arising from credit sales. While factoring is well-established in Western countries, only a few banks/institutions are offering this facility in India.

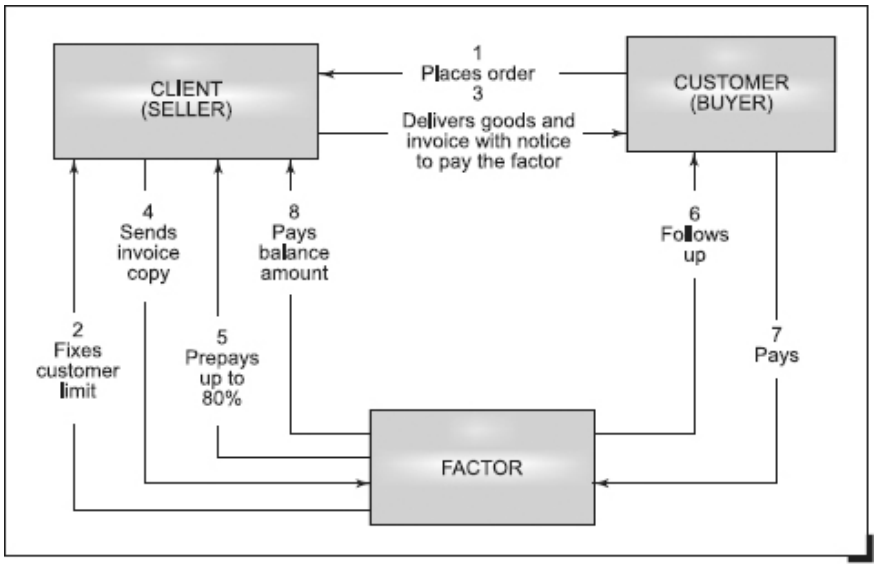
Features of a Factoring Arrangement The key features of a factoring arrangement are as follows:

- The factor selects the accounts of the client that would be handled by it and establishes, along with the client, the credit limits applicable to the selected accounts.
- The factor assumes responsibility for collecting the debt of accounts handled by it. For each account, the factor pays to the client at the end of the credit period or when the account is collected, whichever comes earlier.
- The factor advances money to the client against not-yet-collected and not-yet-due debts. Typically, the amount advanced is 70 to 80 percent of the face value of the debt and carries an interest rate which may be equal to or marginally higher than the lending rate of commercial banks.
- Factoring may be on a recourse basis (this means that the credit risk is borne by the client) or on a non-recourse basis (this means that the credit risk is borne by the factor). Generally, factoring in India is done on a recourse basis.
- Besides the interest on advances against debt, the factor charges a commission which may be 1 to 2 percent of the face value of the debt factored.

The mechanics of factoring are illustrated in Exhibit 27.1.

Evaluation Factoring offers the following advantages which makes it quite attractive: (i) Factoring ensures a definite pattern of cash inflows from credit sales. (ii) Continuous factoring may virtually eliminate the need for the credit and collection department. As against these advantages, the limitations of factoring are: (i) The cost of factoring tends to be higher than the cost of other forms of short-term borrowing. (ii) Factoring of debt may be perceived as a sign of financial weakness.

Exhibit 27.1 Mechanics of Factoring



SUMMARY

- Typically, the current assets of the firm are supported by a combination of long-term and short-term sources of financing. The following sources of finance more or less exclusively support current assets: **accruals**, **trade credit**, **working capital advance** by commercial banks, **public deposits**, **inter-corporate deposits**, **short-term loans** from financial institutions, **rights debentures for working capital**, **commercial paper**, and **factoring**.
- The major **accrual** items are **wages** and **taxes**.
- The **cost of trade credit** depends on the terms of credit offered by the supplier. When the supplier offers discount for prompt payment, trade credit availed beyond the discount period is quite costly.
- Working capital advance by commercial banks is provided in three primary ways: (i) **cash credits/overdrafts**, (ii) **loans**, and (iii) **purchase/discount of bills**. For working capital advances, commercial banks seek security either in the form of **hypothecation** or in the form of **pledge**.
- In the wake of financial liberalisation, the RBI has given freedom to the boards of individual banks in all matters relating to working capital financing. Notwithstanding this freedom, the practices in most of the banks are still based largely on the erstwhile regulatory framework of RBI.
- **Commercial paper** represents short-term unsecured promissory notes issued by firms which enjoy a fairly high credit rating. **Factoring** involves sale of accounts receivable to a factor who charges a commission and may or may not bear the credit risks associated with the accounts receivable purchased by it.

QUESTIONS

1. Enumerate the various sources of finance which more or less exclusively support current assets.
2. Accruals are a free source of finance. Comment.
3. What do suppliers look for in granting trade credit?
4. How would you calculate the cost of trade credit?
5. What are the factors examined by a bank while processing an application for working capital advance?
6. Discuss the important forms of working capital advance given by banks.
7. Explain the letter of credit arrangement.
8. What is the kind of security usually required by banks for working capital advance?
9. What is the main feature of the "loan" system for bank credit?
10. Describe the key components of the information and reporting system followed by banks.
11. What issues are examined in the post-sanction scrutiny done by the RBI under the Credit Monitoring Arrangement?
12. What regulations apply to public deposits?

SOLVED PROBLEMS

27.1 What is the annual percentage interest cost associated with the following credit terms?

(i) 2/20 net 50
(ii) 2/15 net 40
(iii) 1/15 net 30
(iv) 1/10 net 30

Assume that the firm does not avail of the cash discount but pays on the last day of the net period. Assume 360 days to a year.

Solution

$$\text{Cost} = \frac{\text{Discount \%}}{1 - \text{Discount \%}} \times \frac{360}{\text{Credit period} - \text{Discount period}}$$

(i) $\frac{0.02}{0.98} \times \frac{360}{50-20} = 24.5\%$ (ii) $\frac{0.02}{0.98} \times \frac{360}{40-15} = 29.4\%$

(iii) $\frac{0.01}{0.99} \times \frac{360}{30-15} = 24.2\%$ (iv) $\frac{0.01}{0.99} \times \frac{360}{30-10} = 18.2\%$

27.2 Consider the data for Amit & Co.