UNIT 5 MANAGEMENT OF RECEIVABLES

Objectives

The objectives of this unit are to:

- Highlight the need for offering credit in the operation of business enterprises.
- Discuss and design various elements of credit policy.
- Analyse the impact of changes in the terms of credit policy.
- Discuss different credit evaluation models in evaluating the credit worthiness of customers.
- Discuss various techniques available in monitoring receivables in order to speed up the collection process.
- Explain options available before the credit managers in dealing with delinquent customers.
- Analyse the strategic importance of receivables management in designing business strategies.

Structure

5.1 Introduction
5.2 Credit Policy
5.3 Credit Evaluation Models
5.4 Monitoring Receivables
5.5 Collecting Receivables
5.6 Strategic Issues in Receivables Management
5.7 Summary
5.8 Key Words
5.9 Self Assessment Questions
5.10 Further Readings

5.1 INTRODUCTION

“Buy now, pay later” philosophy is increasingly gaining importance in the way of living of the Indian Families. In other words, consumer credit has become a major selling factor. When consumers expect credit, business units in turn expect credit from their suppliers to match their investment in credit extended to consumers. If you ask a practising manager why her/his firm offers credit for the purchases, the manager is likely to be perplexed. The use of credit in the purchase of goods and services is so common that it is taken for granted. The granting of credit from one business firm to another, for purchase of goods and services popularly known as trade credit, has been part of the business scene for several years. Trade credit provided the major means of obtaining debt financing by businesses before the existence of banks. Though commercial banks provide a significant part of requirements for working capital, trade credit continues to be a major source of funds for firms and accounts receivables that result from granting trade credit are major investment for the firm. The importance of accounts receivables can be seen from Table 5.1, which presents investments in accounts receivables for different industries over the years. This is expected to provide an idea of the size of investment in receivables in the Indian Industry.
Table 5.1: Industry-wise Investments in Trade Credit Receivables

<table>
<thead>
<tr>
<th>Industry</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
</tr>
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<tbody>
<tr>
<td>Chemicals</td>
<td>3502.22</td>
<td>3561.63</td>
<td>3412.65</td>
<td>3768.37</td>
<td>3614.45</td>
</tr>
<tr>
<td>Food &amp; beverages</td>
<td>7171.87</td>
<td>7195.32</td>
<td>7369.03</td>
<td>7172.42</td>
<td>6046.75</td>
</tr>
<tr>
<td>Machinery</td>
<td>21101.05</td>
<td>27928.26</td>
<td>28818.50</td>
<td>28980.45</td>
<td>28796.07</td>
</tr>
<tr>
<td>Metals &amp; metal products</td>
<td>3513.62</td>
<td>3885.98</td>
<td>4252.64</td>
<td>4606.84</td>
<td>3907.31</td>
</tr>
<tr>
<td>Non-metallic mineral products</td>
<td>12944.11</td>
<td>13147.85</td>
<td>13456.84</td>
<td>12196.30</td>
<td>11923.14</td>
</tr>
<tr>
<td>Textiles</td>
<td>21912.86</td>
<td>24989.77</td>
<td>28720.10</td>
<td>29531.06</td>
<td>27457.85</td>
</tr>
<tr>
<td>Transport equipment</td>
<td>7003.26</td>
<td>7304.55</td>
<td>7652.69</td>
<td>7622.18</td>
<td>7199.14</td>
</tr>
<tr>
<td>Diversified</td>
<td>5888.22</td>
<td>6631.51</td>
<td>6945.93</td>
<td>8620.85</td>
<td>8891.48</td>
</tr>
<tr>
<td>Miscellaneous manufacturing</td>
<td>2116.02</td>
<td>2478.04</td>
<td>2721.78</td>
<td>2951.06</td>
<td>2745.85</td>
</tr>
<tr>
<td><strong>All Manufacturing</strong></td>
<td>85184.14</td>
<td>97122.01</td>
<td>103200.16</td>
<td>105015.85</td>
<td>102012.04</td>
</tr>
</tbody>
</table>

Two important conclusions emerge from the analysis of Table 5.1:

- Investment in accounts receivable is high and shows a positive growth over the years; and
- Value of accounts receivable differs significantly between industries even after adjusting the differences in number of companies between industries.

The investment in accounts receivable is an important aspect which requires careful management. Besides the cost of investment, there are two types of risks which are associated with the accounts receivable management. One is the risk of OPPORTUNITY LOSS and the other LIQUIDITY risk. The firm has to extend credit to its customers to generate enough sales. The grant of credit is an important tool to realize the operating plans and budgets of the company. But at the same time management has to see that the company has not extended too much of credit to its customers which has resulted in high degree of liquidity risk. By liquidity risk we mean the ability to collect back the amounts due from the customers. This would happen if the company extends the credit to customers whose financial position is doubtful or week and subsequently the funds tied up with them are recovered after a long period or they are not at all realised. If this happens it would result in the companies ability to meet its own obligations and thus affecting short term and long term solvency of the company. The decision to extend the credit to its customers also determines the timing and amount of cash flows accruing to the company.

At the same time minimisation of liquidity risk would imply the risk of opportunity loss. The opportunity loss here means loss of sales by refusing the credits to its potential customers. This would further affect the loss of revenue and the loss of profits. Thus the objective of accounts receivable management is to arrive at an optimum balance of these two risks and help the company to realize its operating plans. This balancing is not a static but a dynamic one. To arrive at the balancing of these two risk, the company would frequently require to adjust their credit standards, credit terms and credit policies. Management of the company would also be required to consider general economic conditions while making such adjustments.
While high investments in accounts receivable warrant efficient management, significant differences between industries call for proper structuring of credit policy that match the industry norms. These two are essential issues in management of receivables. The receivables management system thus involves the following:

- Terms of credit
- Assessing customers’ credit worthiness to grant credit
- Monitoring the level of accounts receivables and improving collection efficiency.

Setting of terms of credit is first step in the receivables management. It is a corporate policy and thus has a close interrelationship with other corporate policies. For example, if a company pursues a policy of market leadership, then it requires aggressive credit policy to achieve maximum sales volume. Terms of credit requires management to decide period of credit, a broad guideline on the eligibility of credit, credit limit for different customers and discount rate offered to customers who settles the bill within a predetermined period. Credit policy is determined by trading off risk associated with granting credit and additional revenue available from granting credit. The credit policy once determined is fixed in the short-run and may warrant periodic adjustment depending on the changes in environment and corporate policies.

Determining creditworthiness of customers, first, requires a system to collect basic information about the customers and then fit the data into a Model that determines the suitability of the customer in granting credit and other credit terms. Once credit is granted, the focus is shifted to collection of dues in time. The efficiency of receivables management is measured by comparing the extent to which collection flows are in line with credit terms.

The objectives that drive the above issues of receivables management are:

1) Obtain maximum (optimum) volume of sales.
2) Maintain proper control over the quantum or amount of investment in debtors.
3) Exercise control over the cost of credit and collections.

**Activity 5.1**

1) Why companies sell/provide goods/services on credit basis?

2) How does the decision on granting credits affect the finance of the company?
5.2 CREDIT POLICY

Designing credit policy is the first step in receivables management. In designing credit policy, the management can follow two broad approaches. Firstly, the policy can be designed under the assumption of unlimited production/sales and funds available for investment in receivables. If credit policy is designed under this assumption and subsequently some constraints are experienced on sales or funds available for receivables, then managers have to restrict the credit at the time of implementing the credit policy. But this may cause certain difficulties to customers because of deviation from the announced credit policy. For example, if a company announces that credit will be unlimited to certain categories of customers based on unlimited funds assumption and subsequently refuse to grant credit due to limited funds available for investment in receivables, it will create hardship to the customer. Under the second approach, the credit policy could be designed keeping in mind the limitations on production/sales volume and funds available for investment in receivables. This is aimed to achieve optimum utilisation of production capacity and funds available for receivables. It also ensures consistency of credit policy.

The credit policy consists of the following components:

- Credit Period
- Discount
- Credit Eligibility
- Credit Limit

a) Credit Period

Decision on credit period is determined by several factors. It is important to check the credit period given by other firms in the industry. It would be difficult to sustain by adopting a completely different credit policy as compared to that of industry. For example, if the industry practice is 30 days of credit period, a firm which offers 120 days credit would certainly attract more business but the cost associated with managing longer credit period also increases simultaneously. On the other hand, if the firm reduces the credit period to 10 days, it would certainly reduce the cost of carrying receivables but volume would also decline because many customers would prefer other firms, which offer 30 days credit. In other words, granting trade credit is an aspect of price.

The time that the buyer gets before payment is due, is one of the dimensions of the product (like quality, service, etc.) which determine the attractiveness of the product. Like other aspects of price, the firm’s terms of credit affect its volume. All other things being equal, longer credit period and more liberal credit-granting policies increase sales, while shorter credit period and more stringent credit-granting policies decrease sales. These policies also affect the level and timing of certain costs. Evaluation of credit policy changes must compare with the changes in sales and additional revenues generated by the sales as a result of this policy change and costs effects. While additional volume and revenue associated with such additional volume are clear and measurable, the cost effects require further analysis.

Cost of Extending Credit Period

Lengthening credit period delays the cash inflows. For example, suppose a firm increases the credit period from 30 days to 90 days. Customers, old as well as
new, will now pay at the end of 90 days and the cash inflows from these sales would occur further into the future. That means, the firm has to delay in settling its dues to others or resort to short-term borrowing if the payments cannot be delayed. The **interest cost** of short-term borrowing arises mainly on account of extending the credit period.

**Example 5.1**

Flysafe Travels is one of the large air-ticket sellers in the city. It offers one-month credit for the air-tickets booked through the firm. Since it also gets one-month credit from the air-lines, the payables and receivables are by and large matched and there is no need of additional investment. The present annual turnover of the firm is around Rs.40 crores. The firm is now contemplating to increase the credit period from one-month to two-months and this is expected to increase the volume by 40% and nearly 80% of the customers (old and new) are expected to avail the new credit facility. The firm has just concluded a credit proposal with a nationalised bank to meet payment liability at 15%. How much more it costs for Flysafe Travels to meet the increased credit volume.

Revised Sales \( Rs. 40 \text{ cr.} \times 1.40 \) = Rs. 56.00 cr.

Customers, who are expected to use additional credit period = 80%

Sales which are likely to be collected at the end of second month = Rs. 56 x 0.80 = 44.80 cr.

Total Credit Period = 2 months

**Less:** Credit given by Air-line operators = 1 month

Funds required for additional credit period of 1 month

Interest cost per year = 15%

Additional interest cost to sustain 1 month credit = Rs. 44.80 x 15% = Rs. 6.72 cr.

The cost of Rs. 6.72 cr. is compared with the additional profit generated by the new sales to decide whether it is desirable to increase the credit period or not.

Changes in credit period also affect the **cost of carrying inventory.** This arises mainly on account of increased volume attracted by the extended credit period, which in turn requires more inventory to support increased volume. For example, if expected additional sales is Rs. 5 cr. and the firm’s present operating cycle requires an inventory at 20% of its sales value, the additional inventory requirement is Rs. 1 cr. Again, inventory is a idle investment and consumes cost in the form of cost of storage and cost of carrying inventory. If the two costs together amount to 17%, the changes in credit policy has caused an additional cost of Rs. 17 lakhs.

Another cost associated with extending credit term and increase in sales volume on account of extended credit term is **discount and bad debts expenses.** Increase in credit sales and period would prompt firms to announce attractive discount policy for prompt payment. Similarly, bad debts will also go up due to increased volume of credit sales.

The **cost of collection** also goes up when the credit period is increased and more credit volume is done. The cost of collection includes cost of maintaining records of credit sales, telephone calls, letters, personal visits to customers, etc. These costs tend to show an uptrend with increased volume and credit sales.

**Example 5.2**
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Suppose the cost of collection for the Flysafe Travels is 1% and bad debts are likely to increase from 0.50% to 0.75% due to increased credit period. These costs are to be added along with interest cost on additional investments in receivables arising out of changes in credit period. These two costs are computed as follows:

<table>
<thead>
<tr>
<th>Cost of Collection</th>
<th>Case</th>
<th>Present</th>
<th>Previous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales (Rs.)</td>
<td>56.00 cr.</td>
<td>40.00 cr.</td>
<td></td>
</tr>
<tr>
<td>Cost of Collection (Rs.)</td>
<td>0.56 cr.</td>
<td>0.40 cr.</td>
<td></td>
</tr>
<tr>
<td>Difference</td>
<td>16.00 cr.</td>
<td>0.16 cr.</td>
<td></td>
</tr>
</tbody>
</table>

Cost of Bad Debts

If we follow the methodology adopted earlier in computing cost of collection, then the additional bad debts works out to Rs. 0.22 cr. (i.e., 0.75% of Rs. 56 cr. less 0.50% of Rs. 40 cr.). However, the entire value of additional bad debts is not on account of change in credit period. A part of it is on account of increase in sales. The actual impact of increase in bad debts can be computed in two stages as follows:

Increased cost of bad debts for existing sales of Rs. 40 cr.
Bad debts as per revised percentage of bad debts, 0.75% of Rs. 40 cr.= 0.30 cr.
Bad debts as per earlier percentage of bad debts, 0.50% of Rs. 40 cr. = 0.20 cr.
Increased value of bad debts attributable to new credit policy = 0.10 cr.

Increased cost of bad debts for additional sales of Rs. 16 cr.
Bad debts as per revised percentage of bad debts, 0.75% of Rs. 16 cr. = 0.12 cr.
Bad debts as per existing percentage of bad debts, 0.50% of Rs. 16 cr. = 0.08 cr.
Increased value of bad debts attributable to new credit policy = 0.04 cr.
Total value of bad debts attributable to new credit policy (0.10+0.04) = Rs. 0.14 cr.
The balance of Rs.0.08 cr. is on account of increase in sales.

b) Discount

When a firm pursues aggressive credit policy, it affects cash flows in the form of delayed collection and bad debts. Discounts are offered to the customers, who purchased the goods on credit, as an incentive to give up the credit period and pay much earlier. For example, suppose the terms of credit is “3/10 net 60”. It means if the customer, who gets 60 days credit period can pay within 10 days from the date of purchase and get a discount of 3% on the value of order.
Since the customer uses the opportunity cost of funds and availability of cash in taking decision, the cash discount should be set attractive. The discount quantum should be greater than interest rate of short-term borrowings.

Example 5.3

Excel Industries is presently offering a credit period of 60 days to some of their customers. It now intends to introduce a discount policy of “3/10 net 60”. We will now see how a customer would evaluate the discount policy here. If a customer bought goods worth of Rs. 1 lakh, the amount due at the end of 60 days is Rs. 1 lakh and if he pays within 10 days, it costs Rs. 97,000. The customer evaluates the interest cost of Rs.97,000 for 50 days to take a decision on availing the discount and advancing the payment. Suppose the interest cost is 15%, then
cost of interest for 50 days on Rs.97,000 is Rs. \( 97,000 \times 0.15 \times \left( \frac{50}{365} \right) \), which works out to Rs. 1,993.15. Since the discount value is greater than the cost, it is profitable for the customer to pay the money earlier within 10 days and avail the discount. In other words, if the customer borrows money for 50 days at 15% interest cost in the short-term market or bank and uses the money to settle the account within 10 days, the loan amount due at the end of two months is Rs. 98,993.15, which is lower than Rs. 1,00,000 due at the end of the period in the normal course. If the cost of borrowing is 24%, the customer would take a different decision. The interest cost of borrowing for 50 days in this case is Rs.3189, which is greater than the discount benefit. Of course, the customer will look into the availability of funds and other options available to the firm before deciding whether to accept the offer or not.

How do we evaluate the discount terms of the company? Cost of funds is an important factor but it is not the only factor in evaluating the discount term. For instance, if the cost of borrowing is 15% of this firm also, then the discount value of Rs. 3000 is to be compared to the interest cost of Rs.97000 at 15% for 50 days, which works out to Rs.1993.15. In other words, if the company is in a position to raise a loan of Rs. 97,000 for 50 days at 15% cost, there is no need to raise Rs. 97000 in the form of offering discount to the customers, where the cost of offering discount works out to Rs.3000. But, there are other issues in deciding the discount policy. Cash discount reduces the probabilities of delayed collection as well as bad debts. In the above example, we have assumed that the customer, who has not availed the discount, promptly pays up the dues at the end of 50 days. The interest cost of Rs.1993.15 will undergo a change if the customer fails to pay at the end of 50 days. Further, the value of bad debts will go up if more credit sales are made and period of credit increases.

Example 5.4

Royal Textiles is contemplating to increase the credit period from 30 days to 60 days. This is expected to increase the sales from Rs. 20 cr. to Rs. 23 cr. but the bad debts is also expected to go up from 0.5% on sales to 1% on sales. Marketing Director felt that by giving 3% discount for payment within 10 days would prompt several customers to avail the facility and thus would bring back the bad debts value to 0.5% on sales. The interest cost of short-term borrowing is 15% and nearly 40% worth of sales are expected to be collected at the end of 10 days. Is it desirable to introduce the discount policy?

As far as interest cost component is concerned, our earlier working on Excel Industries shows the interest cost of 15% is higher than the discount value of 3%. We will work out the interest cost and discount value again. The 40% sales, which is expected to be collected at the end of 10 days works out to Rs. 9.20 cr. (23 x 0.4). The discount to be given on this value at 3% is Rs.0.276 cr. or Rs. 27,60,000 (i.e. 9.2 x 0.03). The net collection is Rs. 8.924 cr. (i.e. 9.2 - 0.276). If the company is in a position to borrow this money at 15%, the interest cost for 50 days would be Rs. 18,33,700 (i.e. 8.924 x .15 x (50/365)). Since the discount value is greater than cost of borrowing, 3% discount is not economical if interest cost alone is considered. However, it is not correct to ignore the impact of discount policy on bad debts.

The discount policy will bring down the value of bad debts from 1% to 0.50%. The savings in terms of values is Rs. 11,50,000 i.e. 23,00,00,000 x (1% - 0.50%). If this saving is deducted from the discount value of Rs. 27,60,000, the net discount cost is Rs. 16,10,000. When the net discount cost of Rs. 16,10,000 is compared with the interest cost of Rs. 18,33,700, then offering 3% discount for payment within 10 days is economical. (However, before implementing this new
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credit policy, the overall impact of the policy on profit is to be assessed and this will be discussed later).

The above analysis also highlights the factors that are involved in evaluating the discount policy. The discount policy is judged on the basis of discount percent (3%), discount period (10 days), percentage of customers expected to avail the discount term (40%), and interest cost (15%). For example, if 80% of the customers are likely to avail this facility, then the discount value and interest cost will double to Rs. 55,20,000 and Rs. 36,67,400 respectively. If there is no change in reduction of bad debts value, then the cost (Rs.55.20 - 11.50 lakhs) exceeds benefit (Rs.36.674 lakhs) and thus, the discount policy is uneconomical. To make the policy economical, the company has to reduce the discount rate from 3% to lower level, which will cut down the discount cost as well as percentage of customers using the discount offer.

Example 5.5: Cost-Benefit Analysis

American Pharma is a multinational pharmaceutical company selling certain premium tablets in the domestic market for the last three years. The company has not offered any credit on sales and the annual turnover for the year was Rs. 10 cr. Due to increased competition, the company is now evaluating new credit policy, which it intends to introduce. As per the policy, the company will offer 30 days credit and a discount of 2% if the amount is paid within a day (i.e., 2/1 net 30). Without this new credit policy, the sales are expected to increase to Rs. 12 crore and with the new policy, the sales will be Rs. 15 cr. It is estimated that 40% of the customers would avail the discount. The contribution margin for its sales is 30% and the company is operating above break-even point. The new credit policy will cause additional costs in terms of collection charges at 1% and bad debts at 0.5%. The interest cost is 16%. Evaluate the credit policy and its implication on profit.

Increase in sales on account of credit policy (Rs.15 cr. less Rs. 12 cr.): Rs. 3.00 cr.

Contribution from increased sales (30% on Rs. 3 cr.) : Rs. 0.90 cr.

Cost associated with credit policy
1. Collection charges @ 1% on Rs. 15 cr. Rs. 0.150 cr.
2. Bad debts at 0.5% on Rs. 15 cr. Rs. 0.075 cr.
3. Discount at 2% on 40% of Rs. 15 cr. Rs. 0.120 cr.
4. Interest cost on receivables @ 16%
   Sales not likely to take discount: Rs. 9 cr.
   Investments on 30 days receivable
   Rs. 9 cr. x (30/365) = Rs. 0.74 cr.
   Interest on Rs. 0.74 cr. at 16% Rs. 0.118 cr. Rs. 0.463 cr.
   Net benefit before tax Rs. 0.437 cr.

Net benefit before tax

C) Credit Eligibility

Having designed credit period and discount rate, the next logical step is to define the customers, who are eligible for the credit terms. The credit-granting decision is critical for the seller since credit-granting has economic value to buyers and buyers decision on purchase is directly affected by this policy. For instance, if the credit eligibility terms reject a particular customer and requires the customer to make cash purchase, the customer may not buy the product from the company.
and may look forward to someone who is agreeable to grant credit. Nevertheless, it may not be desirable to grant credit to all customers. It may instead analyse each potential buyer before deciding whether to grant credit or not based on the attributes of that particular buyer. While the earlier two terms of credit policy viz. credit period and discount rate are not changed frequently in order to maintain consistency in the policy, credit eligibility is periodically reviewed. For instance, an entry of new customer would warrant a review of credit eligibility of existing customers.

The decision whether a particular customer is eligible for credit terms generally involves a detailed analysis of some of the attributes of the customer. Credit analysts normally group the attributes in order to assess the credit worthiness of customers. One traditional way of organising the information is by characterising the applicant along five dimensions namely, Capital, Character, Collateral, Capacity and Conditions. These five dimensions are also popularly called *Five Cs* of credit analysis.

**Capital:** The term capital here refers to financial position of the applicant firm. It requires an analysis of financial strength and weakness of the firm in relation to other firms in the industry to assess the credit worthiness of the firm. Financial information is normally derived from the financial statements of the firm and analysed through ratio analysis. The liquidity ratios like current ratio, debt-service coverage ratio, etc. are often used to get a preliminary idea on the financial strength of the firm. Further analysis includes trend analysis and comparison with the other industry norm or other firms in the industry.

**Character:** A prospective customer may have high liquidity but delay payment to their suppliers. The character thus relates to willingness to pay the debts. Some relevant questions relating to character are:

- What is the applicant’s history of payments to the trade?
- Has the firm defaulted to other trade suppliers?
- Does the applicant’s management make a good-faith effort to honour debts as they become due?

Information on these areas are useful to assess the applicant’s character.

**Collateral:** If a debt is supported by collateral, then the debt enjoys lower risk because in the event of default, the debt holder can liquidate the collateral to recover the dues. The collateral causes hardship to other debt holders. Thus, the analysts should look into both the availability of collateral for the debt and the amount of collateral the firm has given to others. In computing the liquidity of the firm, the analysts should remove the assets used for collateral and take into account only the free assets. The credit worthiness improves if the customer is willing to offer collateral assets or the value of collateral asset backed loan is low.

**Capacity:** The capacity has two dimension - management’s capacity to run the business and applicant firm’s plant capacity. The future of the firm depends on the management’s ability to meet the challenges. Similarly, the facility should exist to exploit the opportunity. Since the assessment of capacity is a judgement on the part of analysts, a lot of care should be taken in assessing this feature.

**Conditions:** These are the economic conditions in the applicant’s industry and in the economy in general. Scope for failure and default is high when the industry and economy are in contraction phase. Credit policy is required to be modified when the conditions are not favourable. The policy changes include liberal discount for payment within a stipulated period and imposing lower credit limit.
The information collected under five Cs can be analysed in general to decide whether the customer is eligible for credit or fit into a statistical model to get an unbiased credit rating of the customer. Discussion on credit evaluation model is presented in the next section.

d) Credit Limit

If a customer falls within the desired limit of credit worthiness, the next issue is fixing the credit amount. This is something similar to banks fixing overdraft limit for the account holders. If a customer is new, normally the credit limit is fixed at the lowest level initially and expanded over the period based on the performance of the customer in meeting the liability. Credit limit may undergo a change depending on the changes in the credit worthiness of the customer and changes in the performance of customer’s industry.

Example 5.6

Alpha Electronics is presently grouping its customers into three categories. It offers unlimited credit to first group, a maximum credit of Rs. 1 cr. to second group and Rs. 5 lakhs for third group. It is presently doing a turnover of Rs. 50 cr. at 60% production capacity. One of the proposals received to increase the capacity utilisation during the annual review meeting is increasing the credit limit for second and third groups of customers. Instead of relaxing credit limit to all groups, the Marketing Chief felt it is desirable to upgrade some of the customers based on their past performance by relaxing the review procedure. The Marketing Chief felt this will also give a right signal to their customers. After completing the upgrading exercise, the marketing manager projected that the sales will go up by another Rs. 10 cr. Based on the average collection period of 40 days, the Finance Manager estimated the revised investments in receivables at Rs. 6.58 cr. against the earlier figure of Rs. 5.48 cr. The interest cost on short-term borrowing is 14%. No major change is expected in collection and bad debts values on account of this regrouping. The firm presently has a contribution margin of 20% and operating above break-even level.

The additional contribution on account of increase in sales works out to Rs. 2 cr. (20% of Rs. 10 cr.). The investment in receivables has gone up by Rs. 1.10 cr. and it costs additional interest burden of Rs. 0.154 cr. per year. Since additional contribution of Rs. 2 cr. is higher than the additional cost of Rs. 0.154 cr., the revision is profitable to the firm.

There are several reasons for limiting the credit facility to the customers. Some of the important reasons are:

- reduce the impact of deficiencies in credit-granting decision;
- reduce the scope for overbuying by the customers;
- rationally allocate the limited funds available for investment in bills receivable; and
- mitigate agency problem

The last reason, mitigating agency problem, requires further discussion. Agency problem arises on account of conflict of interest between the managers (agents) and equity shareholders (owners or principal). Agents will always try to maximise their return even if it is at the cost of principal. Two types of agency problems arise in credit-granting decision. Firstly, managers may collude with some of the customers and grant credit even to undesirable customers. Credit limit puts a cap on the potential loss. Secondly, managers may hesitate to give credit to even creditworthy customers when the performance of the managers is assessed on the basis of collection efficiency. Recently, many public sector
banks were criticised for not granting fresh loan despite comfortable monetary position and funds are simply used to buy government securities. The fear of default and delay in collection would prevent in granting credit even to good customers and thus, take away the opportunity to maximise the profit. Credit limit would to some extent take away this fear of managers since default is restricted and thus would encourage them to accept credit proposals. The situation will improve further if credit limits are built into the system of performance evaluation and managers are not penalised as long as they have restricted the credit.

Activity 5.2

1) What are the major components of credit policy?

2) List out important factors that are used in assessing credit worthiness.

3) How do you evaluate alternative credit policies? Identify the principle to be used in evaluating credit policies.

5.3 CREDIT EVALUATION MODELS

In the previous section, how the credit analysts collect the information required for processing credit application under five Cs was discussed. Credit evaluation models are useful for the analysts to process the information to decide credit worthiness of the customer. It is possible to structure credit evaluation model in different ways. An experienced credit analyst can evaluate the credit worthiness by simply scanning the information received or collected for the credit proposal. When the credit transactions increase or number of customer increases, it may be difficult to apply this methodology. It
Management of Current Assets

will also cause delay in processing credit proposals and lead to inconsistent decision. Thus, it is always useful to create a credit evaluation system and standardise the appraisal. Decision-tree model and multivariate statistical model are generally used to create credit evaluation system

**Decision Tree Model:** Under decision-tree model, credit applications are rated under different parameters. For instance, if a company uses five Cs factors, the analysts rate the credit applicant under each of the five Cs. Decision-tree is initially created for all possible routes and decisions at the end of each route are indicated. Figure 5.1 illustrates decision-tree model using three credit information namely capital, character and collateral. If a character, capital and collateral are strong, then the applicant firm is granted large amount of credit. On the other

![Decision Tree Credit Evaluation Model](image-url)

**Fig.5.1 : Decision Tree Credit Evaluation Model**
hand, if the first two are strong but the collateral is weak, a limited credit could be granted.

If character is weak but capital and collateral are strong, then credit is limited to collateral value. On the other hand, if all the three are weak, it is a dangerous credit proposal and hence to be rejected. In Figure 5.1, we have taken two broad ratings, which can be further divided into three or five scale rating. Increasing the credit variable and rating scale will lead to more branches and credit limit can be prescribed for each branch separately.

It is also possible to use the above decision-tree to decide whether a detailed credit evaluation has to be conducted. For example, if character, capacity and conditions are good but capacity and collateral are weak, it may require a detailed credit evaluation. That means, the information collected is inadequate and a rigorous analysis is required.

**Multivariate Statistical Model**: Many firms have started using sophisticated statistical techniques in conducting their credit analysis. Multiple Discriminant Analysis (MDA) employs a series of variables to categorise people or objects into two or more distinct groups. A credit scoring system utilises multiple discriminant analysis to categorise potential credit customers into two groups: good credit risk and bad credit risk. An important advantage of credit scoring system is that all of the variables are considered simultaneously, rather than individually as in the decision tree analysis. The model is capable of handling both numerical measures such as debt-equity ratio, current ratio, profit margin, etc., as well as non-numerical measures like character of the customer as good, bad, average. When a credit scoring model is constructed with historical data of a few customers, the model would produce an equation as given below:

\[
\text{MDA Score } Y = b_1 X_1 + b_2 X_2 + b_3 X_3 + \ldots + b_n X_n
\]

where, \(b_1, b_2, b_3, \ldots b_n\) are co-efficient values of variables \(X_1, X_2, X_3, \ldots X_n\).

\(X_1, X_2, \text{ etc.}\) are variables such as debt-equity, current ratio, etc.

The model produces the coefficient values and when a new application is received for credit scoring, the values of \(Xs\) are to be measured and substituted in the model equation to get the discriminant score. The discriminant is then compared with the point of separation to place the applicant in one of the two groups. For example, if the point of separation is 3.80, when the applicant’s score is above 3.80, then the applicant is placed in fair or excellent risk group. If the score is below 3.80, then it is risky proposal. Thus, it is possible to evaluate where a particular customer stands in terms of credit worthiness. No difficulty is felt when the scores are much above or below the separation point but credit worthiness of customers, whose scores are close to separation point, are difficult to assess. In such cases, further analysis is made to understand the credit worthiness of the customers. It is also possible to outsource credit rating evaluation from specialised credit rating agencies.

Credit scoring models are periodically updated to take into account changes in the environment and also reassess the credit worthiness of the customers. An outdated model may wrongly classify the customers and lead to heavy losses. Further, while developing the system, it is necessary to ensure good sample for developing the model. It is equally important that the model is validated before employing it. Many foreign banks and credit card agencies extensively use credit rating schemes and found them useful in taking credit decision.
Credit rating has become one of the professionalised services in the recent past. Though rating is more common with different securities offered by industrial units, there is also focus on the rating of individuals and institutions as credit applicants. For instance, CRISIL’s rating methodology includes the following key factors for deciding the credit worthiness of a borrowing company.

A. Business Analysis

- Industry Risk (nature and basis of competition, key success factors, demand supply position, structure of industry, cyclical/seasonal factors. Government policies etc.)
- Market position of the company within the industry (market share, competitive advantages, selling and distribution arrangements product and customer diversity, etc.).
- Operating efficiency of the company (locational advantages, labour relationships, cost structure, technological advantages and manufacturing efficiency as compared to those of competitors etc.)
- Legal position (terms of prospectus, trustees and their responsibilities: systems for timely payment and for protection against forgery/fraud; etc.)

B. Financial Analysis

- Accounting quality (overstatement/understatement of profits; auditors qualifications; method of income recognition; inventory valuation and depreciation policies; off balance sheet liabilities; etc.)
- Earnings protection (sources of future earnings growth; profitability ratios; earnings in relation to fixed income charges; etc.)
- Adequacy of cash flows (in relation to debt and fixed and working capital needs; sustainability of cash flow; capital spending flexibility; working capital management etc.)
- Financial flexibility (alternative financing plans in times of stress; ability to raise funds; asset redeployment potential; etc.)

C. Management Evaluation

- Track record of the management; planning and control systems; depth of managerial talent; succession plans.
- Evaluation of capacity to overcome adverse situations
- Goals, philosophy and strategies

The above factors are considered for companies with manufacturing activities. The assessment of finance companies lays emphasis on the following factors in addition to the financial analysis and management evaluation as outlined above.

D. Regulatory and Competitive Environment

- Structure and regulatory framework of the financial system
- Trends in regulation/deregulation and their impact on the company.

E. Fundamental Analysis

- Capital Adequacy (assessment of true net worth of the company, its adequacy in relation to the volume of business and the risk profile of the assets.)
- Asset Quality (quality of the company's credit-risk management systems for
monitoring credit; sector risk; exposure to individual borrowers; management of problem credits; etc.)

- Liquidity Management (capital structure; term matching of assets and liabilities; policy on liquid assets in relation to financing commitments and maturing deposits.)
- Profitability and Financial Position (historic profits; spreads on fund deployment; revenues on non-fund based services; accretion to reserves; etc.)
- Interest and Tax Sensitivity (exposure to interest rate changes; tax law changes and hedge against interest rate; etc.)

**Individual Credit Rating:** As indicated earlier, credit rating has become more popular now, with financial instruments than individuals. Nevertheless, there are now costing institutions like the Onida Individual credit Rating Agency (ONICRA), developing specific methodology to help in rating individuals as consumers. The ONICRA model considers the following three parameters as important:

### I. Individual Considerations

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>i)</td>
<td>Personal strengths</td>
<td>Qualification Occupation.</td>
</tr>
<tr>
<td>ii)</td>
<td>Stability</td>
<td>Job Tenure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Duration of stay in personal place of residence</td>
</tr>
<tr>
<td>iii)</td>
<td>Capability</td>
<td>Income</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Future Job Prospects</td>
</tr>
<tr>
<td>iv)</td>
<td>Strengths</td>
<td>Financial aspects</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Discipline</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Willingness to pay</td>
</tr>
</tbody>
</table>

### II. Transaction Considerations

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>i)</td>
<td>Risk</td>
<td>Security</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ownership of the asset</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Control over end use of the product collateral</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Exposure</td>
</tr>
<tr>
<td>ii)</td>
<td>Modalities of payment</td>
<td>Direct deduction from salary</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Advance post dated cheques</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Automated debiting of bank account</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Payment on due date</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Payment on demand</td>
</tr>
</tbody>
</table>

### III. Environmental Considerations

**Economy**

**Activity 5.3**

1) Why do we need models to evaluate credit proposals?

---

Management of Inventory
Management of Current Assets

2) List down some of the important inputs required in evaluating credit proposals.

…………………………………………………………………………………….

…………………………………………………………………………………….

…………………………………………………………………………………….

…………………………………………………………………………………….

3) Briefly explain multivariate discriminant model of credit evaluation.

…………………………………………………………………………………….

…………………………………………………………………………………….

…………………………………………………………………………………….

5.4 MONITORING RECEIVABLES

Managing receivables does not end with granting of credit as dictated by the credit policy. It is necessary to ensure that customers make payment as per the credit term and in the event of any deviation, corrective actions are required. Thus, monitoring the payment behaviour of the customers assumes importance. There are several possible reasons for customers to deviate from the payment terms. Three of these possible reasons and their implications in credit management are discussed below:

Changing Customer Business Characteristics: The customers, who have earlier agreed to make payment within a certain period of time, may deviate from their acceptance and delay the payment. For example, economic slow down or slow down in the industry of the customers business may force the customers to delay the payment. In fact, the bills payable become discretionary cash outflow item in economic recession. Thus, a close watch on the performance of customer’s industry is required.

Inaccurate Policy Forecasts: A wide deviation from the credit terms and actual flow of cash flows show inaccurate forecast and defective credit policy. It is quiet possible that a firm uses defective credit rating model or wrongly assesses the credit variable. For example, it is quiet possible to overestimate the collateral value and then lend more credit. If this is the reason for wide deviation, it requires updating the model or training the employees.

Improper Policy Implementation: Often wide deviation is noticed in practice while implementing credit policy. This may not be intentional but frequently in the form of accommodating special requests of the customers. For example, a customer may not be eligible for credit or higher credit as per the model in force. The customer may personally see the concerned manager and request her/him to relax the credit restriction. If there is no policy in place to deal with these types of request and ad hoc decisions are made, then wide deviation is possible. Often these deviations become costly for the firm. Intervention of top officials and ad hoc decisions are cited as major reasons for widespread defaults in many public financial institutions. Thus, it is necessary to ensure that policies are implemented in letter and spirit.

Monitoring provides signals of deviation from expectations. There are several
monitoring techniques available to the credit managers. The monitoring system begins with aggregate analysis and then move down to account-specific analysis.

**Investments in Receivables:** The decision to supply on credit basis leads to investments in receivables. Credit policy is designed in such a way that investment needs of receivables are optimised i.e. return is greater than cost associated with investments. Credit monitoring starts with an assessment of investment in receivables as a percentage of total assets. The investments in receivables are then compared with the budget. Any deviation from budgeted value shows delay in collection or managers deviating form the credit policy. For example, if a firm based on credit policy worked out that investments in receivables is 12%, the actual value for the last three months is around 18%, there are two possible reasons. Firstly, some of the customers are not paying and thus, the receivables value has gone up. Secondly, the managers would be giving more credit than the prescribed limit or extend the credit period. In either case, it requires an investigation and explanation from managers for the increased investment in receivables.

**Collection Period:** Receivables can be related to sales in different ways. The simplest form of analysis is comparing sales and receivables for different periods to know the trend. While this analysis gives a reasonable understanding on how the receivables have moved over the period, it fails to give an implication of the changes in the trend. For example, if sales and receivables of two periods are Rs. 90 lakhs, 120 lakhs and Rs.120 lakhs, Rs.140 lakhs respectively, the figures show (i) the sales value has gone up during the period, and (ii) receivables have also gone up along with sales. A shaper focus on changes in the trend can be obtained by computing the collection period of the two periods. The collection period is computed as follows:

\[
\text{Collection Period} = \frac{\text{Accounts Receivable}}{\text{Credit Sales per day}}
\]

Credit sales per day is computed by dividing the total credit sale of the period by the number of days of the period. If the sales value given above are related to quarterly sales value, then sales per day for the two quarters are Rs. 1 lakh (Rs.90 lakhs/90 days) and Rs. 1.33 lakh (Rs.120 lakhs/90 days) respectively.

The collection period for the two quarters are:

- Period 1: \(\frac{120}{1} = 120\) days
- Period 2: \(\frac{140}{1.33} = 105\) days

The collection period shows a decline and thus improved performance, which was not visible earlier in simple comparison. If the sales value for the second period is Rs. 100 lakhs instead of 120 lakhs, then average credit sales per day is Rs. 1.11 lakh and collection period is 126 days. The collection performance in this case has marginally come down. The collection period of manufacturing companies in BSE-30 index (Sensex) for the last five years is given in Table 5.2. The Table shows the average collection period for companies such as Hindustan Petroleum, Nestle, Hindustan Lever, Bajaj Auto, Gujarat Ambuja Cements, ACC, and Colgate are low whereas BHEL, L&T, Telco, Tisco, Grasim, etc., have experienced longer days for collection.

If customers are granted different credit periods, then customers of similar nature are to be grouped separately and then sales, receivables and collection period relating to each group of customers are to be computed separately. Otherwise, it will give a distorted figure. In addition to comparing collection period of one period with other periods, they are also compared with credit terms. Any abnormal deviation warrants customer-wise analysis. That is, all these three
values for two periods can be computed for each customer to know the trends in collection period of different customers. Such an analysis will help to narrow down the customers who take longer time for paying the dues.

<table>
<thead>
<tr>
<th>Company Name</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Associated Cement Cos. Ltd.</td>
<td>44.64</td>
<td>40.75</td>
<td>24.63</td>
<td>27.67</td>
<td>23.60</td>
</tr>
<tr>
<td>Bajaj Auto Ltd.</td>
<td>25.78</td>
<td>21.51</td>
<td>14.43</td>
<td>19.88</td>
<td>14.42</td>
</tr>
<tr>
<td>Bharat Heavy Electricals Ltd.</td>
<td>194.87</td>
<td>231.53</td>
<td>249.48</td>
<td>240.67</td>
<td>209.65</td>
</tr>
<tr>
<td>Cipla Ltd.</td>
<td>36.25</td>
<td>41.88</td>
<td>55.63</td>
<td>72.35</td>
<td>88.92</td>
</tr>
<tr>
<td>Dr. Reddy’s Laboratories Ltd.</td>
<td>137.37</td>
<td>107.27</td>
<td>113.40</td>
<td>99.74</td>
<td>97.09</td>
</tr>
<tr>
<td>Grasim Industries Ltd.</td>
<td>62.47</td>
<td>53.19</td>
<td>50.43</td>
<td>41.54</td>
<td>34.01</td>
</tr>
<tr>
<td>Gujarat Ambuja Cements Ltd.</td>
<td>8.37</td>
<td>9.30</td>
<td>11.26</td>
<td>9.62</td>
<td>10.30</td>
</tr>
<tr>
<td>Hero Honda Motors Ltd.</td>
<td>6.32</td>
<td>5.22</td>
<td>4.87</td>
<td>8.15</td>
<td>10.13</td>
</tr>
<tr>
<td>Hindalco Industries Ltd.</td>
<td>33.83</td>
<td>33.31</td>
<td>32.95</td>
<td>42.74</td>
<td>41.09</td>
</tr>
<tr>
<td>Hindustan Lever Ltd.</td>
<td>7.47</td>
<td>8.43</td>
<td>9.12</td>
<td>14.58</td>
<td>13.44</td>
</tr>
<tr>
<td>Hindustan Petroleum Corp. Ltd.</td>
<td>6.64</td>
<td>7.30</td>
<td>4.53</td>
<td>7.08</td>
<td>6.36</td>
</tr>
<tr>
<td>I T C Ltd.</td>
<td>35.03</td>
<td>10.91</td>
<td>9.17</td>
<td>14.07</td>
<td>13.64</td>
</tr>
<tr>
<td>Infosys Technologies Ltd.</td>
<td>60.76</td>
<td>56.27</td>
<td>58.13</td>
<td>47.28</td>
<td>51.68</td>
</tr>
<tr>
<td>Larsen &amp; Toubro Ltd.</td>
<td>52.51</td>
<td>67.63</td>
<td>71.29</td>
<td>69.09</td>
<td>82.16</td>
</tr>
<tr>
<td>Mahanagar Telephone Nigam Ltd.</td>
<td>40.63</td>
<td>42.77</td>
<td>36.20</td>
<td>67.69</td>
<td>65.97</td>
</tr>
<tr>
<td>Oil &amp; Natural Gas Corp. Ltd.</td>
<td>38.76</td>
<td>36.64</td>
<td>30.24</td>
<td>40.92</td>
<td>49.85</td>
</tr>
<tr>
<td>Ranbaxy Laboratories Ltd.</td>
<td>107.22</td>
<td>98.14</td>
<td>80.00</td>
<td>83.00</td>
<td>76.33</td>
</tr>
<tr>
<td>Reliance Energy Ltd.</td>
<td>109.72</td>
<td>112.03</td>
<td>140.27</td>
<td>118.62</td>
<td>73.58</td>
</tr>
<tr>
<td>Reliance Industries Ltd.</td>
<td>13.30</td>
<td>17.32</td>
<td>16.36</td>
<td>18.58</td>
<td>18.02</td>
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<tr>
<td>Satyam Computer Services Ltd.</td>
<td>100.64</td>
<td>117.04</td>
<td>112.33</td>
<td>83.53</td>
<td>86.70</td>
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<tr>
<td>Tata Iron &amp; Steel Co. Ltd.</td>
<td>75.53</td>
<td>64.70</td>
<td>61.95</td>
<td>53.33</td>
<td>37.18</td>
</tr>
<tr>
<td>Tata Motors Ltd.</td>
<td>103.42</td>
<td>43.79</td>
<td>33.60</td>
<td>41.93</td>
<td>42.49</td>
</tr>
<tr>
<td>Tata Power Co. Ltd.</td>
<td>48.91</td>
<td>77.59</td>
<td>63.59</td>
<td>76.55</td>
<td>78.32</td>
</tr>
<tr>
<td>Wipro Ltd.</td>
<td>64.98</td>
<td>71.91</td>
<td>74.06</td>
<td>68.28</td>
<td>72.63</td>
</tr>
<tr>
<td>Zee Telefilms Ltd.</td>
<td>199.26</td>
<td>167.21</td>
<td>162.35</td>
<td>246.44</td>
<td>246.62</td>
</tr>
</tbody>
</table>
Management of Inventory

Ageing Schedule or Age Analysis: Public limited companies in their annual report disclose debtors outstanding more than six months separately. The receivables outstanding more than six months as a percentage of total receivables of manufacturing companies in BSE-30 index (Sensex) for the last five years are given in Table 5.4. The outstanding receivables for more than six months as a percentage of total receivables is negligible in companies such as Bajaj Auto, Colgate, Hindalco, Nestle and Ranbaxy. The percentage is high in many of the commodity and engineering companies. While the above figures gives some insight on the nature of receivables, a more detailed analysis is normally done internally. Such analysis involves preparing an ageing schedule as shown below:

Table 5.3: Ageing Schedule for Four Quarters

<table>
<thead>
<tr>
<th>Interval</th>
<th>Quarter 1</th>
<th>Quarter 2</th>
<th>Quarter 3</th>
<th>Quarter 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 30 days</td>
<td>4340.00</td>
<td>5880.00</td>
<td>9100.00</td>
<td>13720.00</td>
</tr>
<tr>
<td>(in thousands)</td>
<td>52.69</td>
<td>56.62</td>
<td>51.89</td>
<td>55.97</td>
</tr>
<tr>
<td>31-60 days</td>
<td>2884.00</td>
<td>3430.00</td>
<td>5950.00</td>
<td>8232.00</td>
</tr>
<tr>
<td>(in )</td>
<td>35.01</td>
<td>33.03</td>
<td>33.93</td>
<td>33.58</td>
</tr>
<tr>
<td>61-90 days</td>
<td>840.00</td>
<td>840.00</td>
<td>2240.00</td>
<td>2002.00</td>
</tr>
<tr>
<td>(in )</td>
<td>10.20</td>
<td>8.09</td>
<td>12.77</td>
<td>8.17</td>
</tr>
<tr>
<td>91-120 days</td>
<td>168.00</td>
<td>224.00</td>
<td>238.00</td>
<td>546.00</td>
</tr>
<tr>
<td>(in )</td>
<td>2.04</td>
<td>2.16</td>
<td>1.36</td>
<td>2.23</td>
</tr>
<tr>
<td>Above 120 days</td>
<td>5.60</td>
<td>11.20</td>
<td>8.40</td>
<td>14.00</td>
</tr>
<tr>
<td>(in )</td>
<td>0.07</td>
<td>0.11</td>
<td>0.05</td>
<td>0.06</td>
</tr>
<tr>
<td>Total</td>
<td>8238.00</td>
<td>10385.00</td>
<td>17536.00</td>
<td>24514.00</td>
</tr>
</tbody>
</table>

The above analysis shows that while debtors for 0 to 90 days is more or less in line with previous quarters values, debtors for 91-120 days have gone up to the highest level. Further investigation in the form of break-up details would help to initiate corrective steps. While feeding this type of information to top management, the names and other details of the customers for the last two categories are also given.

Table 5.4: Receivables Outstanding more than 6 months as a percentage of Total Receivables

<table>
<thead>
<tr>
<th>Company</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Associated Cement Cos. Ltd.</td>
<td>28.15</td>
<td>23.08</td>
<td>21.01</td>
<td>22.09</td>
<td>34.14</td>
</tr>
<tr>
<td>ACC</td>
<td>35.15</td>
<td>42.29</td>
<td>27.47</td>
<td>43.42</td>
<td>46.74</td>
</tr>
<tr>
<td>Bajaj Auto</td>
<td>0.40</td>
<td>0.61</td>
<td>0.84</td>
<td>0.96</td>
<td>0.74</td>
</tr>
<tr>
<td>BHEL</td>
<td>39.16</td>
<td>38.60</td>
<td>41.86</td>
<td>44.07</td>
<td>37.60</td>
</tr>
<tr>
<td>Cipla</td>
<td>16.04</td>
<td>13.98</td>
<td>7.94</td>
<td>7.61</td>
<td>8.77</td>
</tr>
<tr>
<td>Dr. Reddy’S Laboratories</td>
<td>28.12</td>
<td>18.16</td>
<td>12.52</td>
<td>5.05</td>
<td>3.16</td>
</tr>
<tr>
<td>Grasim Industries</td>
<td>15.65</td>
<td>15.08</td>
<td>14.49</td>
<td>11.74</td>
<td>8.00</td>
</tr>
<tr>
<td>Gujarat Ambuja Cements</td>
<td>6.72</td>
<td>10.16</td>
<td>6.95</td>
<td>11.48</td>
<td>10.56</td>
</tr>
<tr>
<td>Hero Honda</td>
<td>0.53</td>
<td>0.68</td>
<td>0.50</td>
<td>1.04</td>
<td>0.59</td>
</tr>
</tbody>
</table>
The above two measures namely, average collection period and ageing schedule may give misleading picture when the sales are seasonal. Suppose the average sales per month of a quarter is Rs. 10 lakhs. The sales figures for the three months are Rs.10 lakhs, Rs.15 lakhs and Rs.5 lakhs. Suppose the collection pattern shows that 50 per cent of the sales is collected in the same month, 25 in the following month and the remaining 25 in the third month. If there is no outstanding receivables at the beginning of the quarter, then the receivables values at the end of each month are Rs. 5 lakhs, Rs.10 lakhs and Rs.12.5 lakhs. The average collection period for the last month will be very high compared to other months though there is no change in the payment pattern of the customers. In order to overcome this problem, particularly in a seasonal sales pattern, the following alternatives are suggested:

- Ratio of receivables outstanding to original sales, and
- Sales-weighted Collection Period.

Both the above measures require decomposing receivable outstanding at the end of each month to trace the receivables with original sales. Such a decomposition will be useful even for a non-seasonal firms.

Decomposing Receivables Outstanding at the End of Month: Another way to spot changes in customer behaviour is to decompose outstanding receivables at the end of each month. This is achieved by preparing a schedule of the percentage portions of each month’s sales that are still outstanding at the end of successive months. An illustrative table is given below:

<table>
<thead>
<tr>
<th>Table 5.5 Percentage of Receivables Outstanding at the end of month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage outstanding after</td>
</tr>
<tr>
<td>--------------------------------</td>
</tr>
<tr>
<td>Current Month</td>
</tr>
<tr>
<td>1 month</td>
</tr>
<tr>
<td>2 months</td>
</tr>
<tr>
<td>3 months</td>
</tr>
<tr>
<td>4 months and above</td>
</tr>
</tbody>
</table>

The following example will help you to understand the figures in the above Table. Suppose Rs. 40 lakhs is outstanding receivables at the end of January, this
Management of Inventory

consists of 94% of January’s sales, 70% of December’s sales, 21% of November’s salary, 6% of October’s sales and 1% of September’s sales. If the credit period is 30 days, the above analysis shows that a significant part of the debtors takes more than one month in settling dues. While a significant part of the customers settle down their dues by the end of second month, outstanding beyond 2 months is also high and more importantly growing. Receivables outstanding more than two months have gone up from 21% to 32%. The growing trend in non-collection of dues continues for other two months too. This clearly shows the customers have slowed down in settling their dues and thus requires more careful analysis. If this Table 5.5 is supplemented with the names of customers along with their dues for the second, third and fourth months, it is helpful for follow up and appropriate action.

Sales-weighted Collection Period: In the above Table 5.5, percentages of receivables outstanding to original sales are given. To compute sales-weighted collection period, the values are to be summed up for each month and then multiplied by 30. The sales-weighted collection period for January, February and March are 57.60 days (1.92 x 30), 64.80 days (2.16 x 30) and 66 days (2.20 x 30) respectively. The general equation is:

Sales-weighted Collection Period = \( \sum_{t=0}^{n} (\frac{AR_t}{S_t}) \times 30 \) days

Where, \( AR_t \) is Accounts Receivables of the month ‘t’ and \( S_t \) is Sales of the month ‘t’

A similar table prepared for each customer will be useful to evaluate the behaviour of each customer in settling the dues. An analysis of this behaviour for a year can be used to assign ranks to the customers and such ranking can be used while taking credit policy or credit decision. Instead of using outstanding receivables values, some organisations use the payment values. However, both should lead to same conclusion.

Conversion Matrix: This is a simple technique, whereby credit sales of each month are patterned as per their collection. This shows how the credit sales of a month are collected in the subsequent months. This reveals the laxity or otherwise of the collection department. Look at the following conversion matrix to judge whether the collection pattern is improving, stable or deteriorating.

<table>
<thead>
<tr>
<th>Month</th>
<th>Credit Sales (Rs.)</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>Aug</th>
<th>Sept</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan</td>
<td>1,00,000</td>
<td>10,000</td>
<td>40,000</td>
<td>30,000</td>
<td>20,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(10%)</td>
<td>(40%)</td>
<td>(30%)</td>
<td>(20%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feb</td>
<td>80,000</td>
<td>11,000</td>
<td>28,000</td>
<td>32,000</td>
<td>9,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(14%)</td>
<td>(35%)</td>
<td>(21%)</td>
<td>(24%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mar</td>
<td>1,20,000</td>
<td>18,000</td>
<td>48,000</td>
<td>25,000</td>
<td>29,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(15%)</td>
<td>(40%)</td>
<td>(21%)</td>
<td>(24%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apr</td>
<td>1,60,000</td>
<td>19,500</td>
<td>72,500</td>
<td>38,000</td>
<td>30,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(12%)</td>
<td>(45%)</td>
<td>(24%)</td>
<td>(19%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Management of Current Assets

<table>
<thead>
<tr>
<th></th>
<th>May</th>
<th>June</th>
<th>Total Collection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>20,000</td>
<td>1,60,000</td>
<td>10,000</td>
</tr>
<tr>
<td>Credit</td>
<td>72,000</td>
<td>14,500</td>
<td>51,000</td>
</tr>
<tr>
<td>Cash</td>
<td>60,000</td>
<td>56,000</td>
<td>76,000</td>
</tr>
<tr>
<td>Total</td>
<td>48,000</td>
<td>49,000</td>
<td>1,19,500</td>
</tr>
<tr>
<td>(10%)</td>
<td>(36%)</td>
<td>(9%)</td>
<td>(35%)</td>
</tr>
<tr>
<td>(36%)</td>
<td>(30%)</td>
<td>(31%)</td>
<td>(31%)</td>
</tr>
<tr>
<td>(30%)</td>
<td>(24%)</td>
<td>(25%)</td>
<td>(25%)</td>
</tr>
<tr>
<td>(24%)</td>
<td></td>
<td></td>
<td>(25%)</td>
</tr>
</tbody>
</table>

It may be observed from the above data that our Hypothetical company, making a sale of Rs. 1 lakh could collect only 10% in the same month and around 50% after two months. The above represents a case of deteriorating collection efficiency.

**Receivables Variance Analysis**: Receivables budget can be prepared from sales budget and credit policy. This information is any way required to prepare cash budget. In receivables variance analysis, the actual reason for actual value of receivables varying with budgeted value. Actual receivables vary with that of budget for two reasons - the level of sales and ratio of receivable outstanding. For example, if the budgeted sales for a month is Rs. 20 lakhs and normally 80 per cent of the sales are outstanding at the end of month, then receivables at the end of month as per the budget should be Rs. 16 lakhs. If the actual receivables is Rs. 18 lakhs, it could be due to increase in the actual sales from Rs. 20 lakhs to Rs. 22.50 lakhs or alternatively increase in the percentage of credit sales from 80 to 90 or combination of both. In order to compute the causes for variance, three inputs are required: budgeted receivables, revised budgeted receivables based on actual sales and actual receivables. The revised budgeted receivables is computed based on actual sales and credit policy. In other words, it is the budgeted receivables value for the actual sales. The difference between the first two values (budgeted receivables and revised budgeted receivables for actual sales) explains the part of receivable variance arising out of changes in the sales. The difference between the second and third values (revised budgeted receivables and actual receivables) is on account of changes in the collection efficiency. The difference between the first and last values is the total receivables variance.

Other simple measures of receivables management are ratio of credit sales to total sales, Number of credit proposals rejected to total credit proposals received and bad debt loss index.

**Activity 5.4**

1) Why customers often fail to adhere the credit terms?

…………………………………………………………………………………….
…………………………………………………………………………………….
…………………………………………………………………………………….

2) List down various indicators used in macro-analysis of receivables.

…………………………………………………………………………………….
…………………………………………………………………………………….
…………………………………………………………………………………….
3) How do you set right the seasonal variation in sales affecting some of the indicators used in receivables analysis?

5.5 COLLECTING RECEIVABLES

The analysis explained earlier are useful to know the trend of collection and identify customers, who are not paying on due dates. This should enable the management to take appropriate action to collect the dues, which is the main objective of receivables management. Collecting receivables begins with timely mailing of invoices. There are several procedures available to credit managers, who must judiciously decide when, where and to what extent pressure should be applied to delinquent customers. Management of collection activity should be based on careful comparison of likely benefits and costs.

Inexpensive procedures include periodical mailing of duplicate bills reminding the customers that the account is not settled or sending a formal letter informing non-payment of bill and requesting the customer to pay immediately. Written follow-up on an overdue account is referred to as dunning. If a customer fails to respond to these reminders, then expensive procedures are initiated. Personal telephone calls and reminder through registered post are initially tried. Even if these steps fail to deliver the desired results, a personal visit by the credit manager or representative to sort out the issue would be useful. If the credit manager realises that the customer is wilfully defaulting or is in deep trouble and hence unlikely to pay the dues, a formal legal action is initiated either to recover the dues or file a liquidation petition before the court to recover the dues. It is difficult to prescribe exactly as to which and when these collection procedures should be adopted. If collection policy is strict, then it would reduce the outstanding receivables but at the same time frightened many potential customers from doing business. On the other hand, a liberal collection policy would invite many wilful defaulters to do business with the company.

The above discussion assumes that the firm takes the responsibility of collection. Two alternatives are available to firms in collecting the receivables. The first one called factoring enables the firm to transfer the receivables to factoring agent, who takes the responsibility of collection. Some factoring agents takes the credit risk (i.e. the factoring agents bear the loss on account of bad debts) and others accept factoring without credit risk. In India, we have factoring subsidiaries of Canara Bank, SBI, etc. and Exim Bank does the factoring service relating to export bills. The second one is called receivables securitisation. Securitisation is somewhat similar to factoring but here the securitising agent sells the units of receivables to investors in the market. Though the concept of securitisation is popular in finance related receivables like housing loans, credit cards receivables, lease rentals, etc., the concept is slowly spreading to other types of receivables. A few securitisation deals have already been completed in India and the market will witness more such transactions in the near future.

5.6 STRATEGIC ISSUES IN RECEIVABLES MANAGEMENT

Business management today involves continuous formulation of strategies and
also, to develop and carry out tactics to implement the strategies to gain competitive advantage. The discussion on receivables management so far focused on operational issues such as how changes in credit policy affects investments in receivables, how to monitor collection pattern, what are the options available in dealing with delinquent customers, etc. Receivables management, however, can support the strategies being pursued by the organisation to gain certain competitive strength.

Firms pursuing strategies to acquire cost leadership need a suitable credit policy to support their strategies. For instance, if a firm is trying to achieve cost leadership through economies of scale of production, then it has to generate a large volume of sales. Since credit term is an economic variable in buying decision, the credit terms should be supportive to sell large volume. That means, the firm may have to offer more days of credit particularly for those who buy in large quantity. Of course, the cost of investment in receivables will go up initially but without a liberal credit policy, the assets created to achieve economics of sale will be idle. In fact, the additional cost of investments in receivables need to be considered while computing the benefit arising out of economies of scale.

Firms pursuing strategies to acquire product differentiation have limited customer base. In order to gain access to this segment, the firm may have to pursue liberal credit term but once the brand acquired the desired value, credit terms can be made tight. For instance, many established multinational firms now require the dealers and distributors to deposit the entire amount of the consignment before lifting the delivery. Similarly, firms pursuing market penetration may have to work with low profit margin or selling just above the variable cost. Liberal credit terms would add cost and increase bad debts value. Firms may be reluctant to have liberal policy at this stage unless it is essential to achieve penetration. Firms with a large market share in a low growth industry would not invest additional capital in receivables since the strategy is to harvest the benefit. In other words, instead of allowing the market to decide the credit terms of the company, it is possible for the firm to influence the market through credit policy.

Credit policy can also be used to change the product life cycle and investment pattern. For instance, the life cycle of a product X is 10 years, which is worked out on the basis of existing credit terms and volume of turnover. Assume the total sales during the period is 2,50,000 units. The volume achieved is initially low, then it increases to reach a peak at the end of 4th year and then declines over the remaining 6 years. Based on different capacity options, it is found that a capacity of 20,000 units for six-year period is optimum and offers highest net present value. The firm now found that by increasing the credit period, it can sell more units and thus can go for a capacity of 30,000 units and achieve same NPV in four-year period. The second option may be suitable on account of increased uncertainty on the product as the product moves into the latter part of the life cycle and also getting economies of scale, which was not possible with lower turnover in the first case. Shortening product life cycle has certain advantages as well as disadvantages. The advantages are obvious. It increases NPV and removes uncertainty. At the same time, it requires more R&D to come out with a new and improved product and additional investment much earlier than originally visualised. If competitors are able to come out with better product version, the firm has to suffer higher loss because of higher capacity. The firm has to develop various scenarios and study their impact on the overall organisation goal.

Credit policy and its terms assume strategic importance if a firm is primarily supplying its products or services to select firms. Suppose company R is one of the ten customers of Company L. Company R is now going for massive expansion and found it difficult to borrow to meet the normal credit terms of
Management of Inventory

Management of Inventory

Company R since the debt-capacity remaining is not adequate. If Company L has reasonable borrowing capacity or internal generation, it can extend the terms of credit. L&T had come out with a major issue some years back to provide suppliers credit to Reliance Industries for their expansion projects. Such kind of suppliers credit may also be feasible when the interest cost of a domestic firm is much higher than the interest cost of supplier firm located in a different country.

A firm dealing with a large number of customers may find it difficult to manage the receivables within the existing organisational set up. If a few other group companies also face similar problems, it may start a separate subsidiary to manage the receivables of all group companies. Many companies have started their subsidiary to manage share transfer jobs of group companies. It is also equally possible to centralise the credit rating service of the customers through subsidiaries. Instead of starting their own subsidiaries, it is also possible to go in for factoring services and credit rating agencies to outsource these services. Many foreign banks outsource the services not directly related to their core activities in order to keep the organisation lean. It is a way to convert many of the fixed costs into variable costs. All these decisions have strategic implications and thus, it is difficult to visualise the receivables management as a operational issues of management in the modern business environment.

Activity 5.5

1) List down a few inexpensive and expensive methods of credit follow-up.

2) A firm in high-growth industry would like to build up more market share. What type of credit policy is suitable to be consistent with this strategy?

3) How credit policy affects investment decisions?

5.7 SUMMARY

The use of credit in the purchase of goods and services is so common that it is taken for granted. Selling goods or providing services on credit basis lead to accounts receivables. Though a lot of discussion is going on in the Indian industry on how to cut down the investments in inventories through concepts such as Just-in-Time (JIT), MRP, etc., investments in receivables have gone up and firms are demanding more credit from banks and specialised institutions to deal with receivables. Since investment in receivables has a cost, managing receivables assumes importance. Receivables management starts with designing appropriate
Management of Current Assets

credit policy. Credit policy involves fixing credit period, discount to be offered in the event of early payment, conditions to be fulfilled to grant credit and fixing credit limit for different types of customers. It is essential for the operating managers to strictly follow the credit policy in evaluating credit proposals and granting credit. To evaluate the credit proposal, it is necessary to know the credit worthiness of the customers. Credit worthiness is assessed by collecting information about the customers and then fitting the values into credit evaluation models. There are number of credit evaluation models which range from simple decision tree analysis to sophisticated multivariate statistical models. The firm has to develop a suitable model, test the model with historical data to validate the model and use it for credit evaluation. Models also need to be periodically updated. Once the credit is granted, then it should be monitored for collection. Different methodologies are available to get a macro picture on collection efficiency. Micro analysis in the form of individual customer analysis is done wherever there is a deviation from the expectation. It is equally important in dealing with delinquent customers. There are several options, simple reminders to legal action, available before the credit managers in dealing with such default accounts and appropriate method is to be selected with an objective of benefit exceeding cost. The use of credit policy and credit analysis is not restricted to the operational managers in dealing with day-to-day activities of the firm. In the competitive world, credit policy and analysis provide a lot of strategic inputs. Credit policy of an organisation is in line with the desired strategy that the organisation wants to pursue to gain certain competitive advantages.

5.8 Key Words

Terms of Credit : These refer to eligibility conditions and payment details for granting credit by the company to a customer.

Creditworthiness : Capacity of the customer to meet payment obligations.

Credit Policy : Decision of the firm to grant or not to grant credit. It consists of the components such as credit period, discount, credit eligibility and credit limit.

Credit Period : Refers to the minimum and maximum time limits for which credit is granted.

Credit limit : Is the limit upto which credit is granted

Decision Tree : Is a model indicating decision points and chance events for taking a decision.

Credit Scoring System : A system which attempts to rank customers as good, bad or average by a scoring mechanism.

Business Analysis : An examination of risk factors influencing business prospects in terms of competition, demand and supply position, structure of industry, cost structure, labour relations, etc.


Fundamental Analysis : Refers to capital adequacy asset quality, liquidity management and interest over tax sensitivity.

Collection Period : Indicates the time taken by the collection department in collecting its book debts. A comparison of collection period with credit period tells us whether the debts were collected within the stipulated time or not.
Ageing Schedule: A method of classifying debts according to the number of days the debt remained outstanding.

Conversion matrix: Sequencing of debts in the order of their collection.

Variance Analysis: A comparison of Budgeted figures with Actuals to note down deviations.

9.9 SELF-ASSESSMENT QUESTIONS

1. Explain important components of receivables management system?

2. Why do we need a credit policy? How do you evaluate credit policy?

3. How do you assess the credit worthiness of customers?

4. Discuss a few important financial ratios and analysis used in managing receivables.

5. Assume a customer, who used to pay the dues in time earlier, has suddenly defaulted. A couple of reminders sent to him fail to get any response. As a credit manager, you have two issues to decide. You have to first decide whether to continue the supply to the customer on credit basis. The second issue is how to deal with the customer to recover the dues. In the normal course, you have to initiate legal process to recover the dues but this may strain your firm’s relationship with the customer. You can’t also be silent since the money involved is quiet high and your firm is incurring interest cost on this credit. How do you deal with this customer and decide the two issues?

6. Hindustan Automobiles is manufacturing heavy vehicles and presently offering a credit period of 45 days. In order to increase the sales from its current level of Rs. 400 crore., it is contemplating to increase the credit period to 60 days. This is expected to bring additional sales of Rs. 40 crore. There is no change in the collection and bad debts cost. The company is likely to earn a contribution margin of 20%. The short-term borrowing cost is 15%. Evaluate the new credit period and its impact on profitability.

7. Regal Industries found that a very few debtors avail the discount, which is “1.5/10 net 60”. The firm is presently borrowing at 15%. Since finance for receivables is limited, it is turning down many credit proposals and thus lose the opportunity to increase the sales. The firm now wants to revise the discount policy and make it attractive to motivate some of the existing customers to avail the discount. The funds released could be used for accepting new customers. The additional details available to you are: Contribution margin is 20%; Average collection period is 60 days; Sales could be increased to any level. With these additional details evaluate the proposed discount policy of “4/10 net 60”. Compute the impact of new policy on profitability of the firm.

8. The proposed credit policy of R.K. mills would cut down the bad debts from 4% to 2%. It will also improve the collection period from 60 days to 30 days. The firms current sale of Rs. 80 lakhs will decline by 20% on account of this new policy. If the contribution margin cost of borrowing are 15% and 14% respectively, how the new credit policy affect the profit of the firm.

9. Your firm is following a credit rating model developed internally to assess the credit worthiness of customers. The cut-off score is 4.8 points. Your analysis of historical behaviour of customers with different points shows the