# Investment Banking – I


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# Chapter I

# Projects

**After reading this chapter, you will be conversant with:**

- The Importance and Process of Resource Allocation at the Corporate Level
- Process of Resource Allocation at the Business Unit Level
- Identification of Opportunities
- Issues in Recapitalization of Projects
- Effects of Time and Cost Overruns
- Tools for Timely Completion of a Project

Every firm should have a strategic plan if it wants to succeed in the long run. The strategic plan should be laid out carefully, keeping all variables in view. Once it is done, all subsequent actions of the firm, particularly those relating to allocation of substantial amounts of resources, should conform to the plan. Only luck can help a firm whose strategies are aimed in one direction while its resources are deployed in another direction. Wise allocation of resources or wise capital expenditure decisions are the stepping stones for any firm's success.

Resource allocation is generally done at two levels: One, at the firm or corporate level. At this level, the distribution of resources among various departments or business units is considered. Two, at the department or business unit level. At this level, how the department or unit should utilize the resources allocated to is decided.

## THE IMPORTANCE AND PROCESS OF RESOURCE ALLOCATION AT THE CORPORATE LEVEL

Resource allocation by a corporate may be made in different ways. It may be on the basis of business functions (marketing, finance, production, etc.) or geographical areas (as in the case of a multinational firm) or according to the importance of the service rendered (like in public service). The basis chosen should always be such that it results in the optimal allocation of resources. This, in turn, depends on how best the firm can be divided into divisions, in such a way that each division's contribution to the achievement of the strategic objectives of the firm can be identified and measured.

The pattern of allocation of resources generally depends on two factors: The need for a change in the existing pattern of allocation, in the perception of the management and how centralized the decision making process is. In addition, it also depends on whether the resources of the firm are growing or declining and whether a change is called for in the overall resources and their pattern of deployment. Let us now discuss how resource allocation takes place in various situations. The same has been depicted in a summary form in figure 1.

**Figure 1: Allocation of Resources**

| Extent of Central Control | Need for Change: Low | Need for Change: High |
|---|---|---|
| High | Formula | Imposed Priorities |
| Low | Free Bargaining | Open Competition |

*Source: Exploring Corporate Strategy by Johnson and Scholes, 3/e, Prentice Hall India, p.314.*

i. **Growth in the Resources:** When the resources are increasing it is easy to bring about a change in their relative distribution. It can be achieved by simply directing fresh inflows to the areas where they are required. An alternative method is to have a central pool of funds and make allocations from the pool. When there is growth in the resources, and central control is strong, allocation is generally imposed by the center. On the other hand, the divisions may indulge in competitive bidding. Whichever division offers highest returns will get the funds first.

   If the need for change in the present pattern of allocation is not felt strongly, the allocation is made based on a predetermined formula or on the existing pattern. If the central control is not strong enough, then funds will be allocated by free bargaining between the divisions and the center.

ii. **Decline in the Resources:** When there is a declining trend in the resources available, no firm can allow resource allocation based on a formula or free bargaining. Allocation is made either by centrally imposed priorities or competitive bidding. There are two interesting techniques that are commonly followed in such circumstances. One is amalgamation of one or more divisions. Savings in resources made by the amalgamation of two or more hitherto separate divisions, including the surplus staff, are put into the new venture proposed. The second is reducing the resources of all other units a little. The total of the amount reduced is pooled and invested in a separate unit. If the objective is to provide resources to one of the units, the newly created unit will be eventually merged with the other unit. Otherwise, the new unit continues to be separate.

iii. **Few Changes in Resources:** If the firm feels that new investments to be made or the strategy to be implemented do not call for a change in the overall pattern of allocation of resources, the allocation will again be based on either a formula or free bargaining. The formula may be, for example, that 5% of the total revenues of the firm should be used for capital investments, and they should be shared among different units in predetermined proportions. The formula method, generally, does not satisfy all the divisions. Objections may be raised about the validity and also the fairness of the formula. The other extreme of a formula is free bargaining, where the allocation to each unit is started at zero and increased based on its requirements. In practice, many firms follow a middle path. The allocations are first made based on a formula and then adjustments are made to the allocations through free bargaining.

## PROCESS OF RESOURCE ALLOCATION AT THE BUSINESS UNIT LEVEL

If resources are allocated to different units of a firm based on the formula, then the units have to think of the best ways to deploy them. If allocation is based on open competition or free bargaining, units will have to be ready with their investment plans. In small firms where there is only one unit, there is only one level of allocation. But, whatever may be the levels of allocation, the investment needs of a unit depend on two factors: one, whether it can identify investment opportunities from its environment and two, whether it has the strategic abilities to take-up the opportunities. Analysis of its strategic abilities itself may often lead the unit to identify the areas where it can invest and where it cannot. So, investment alternatives can be identified in two steps:

i. Analysis of the environment.

ii. Analysis of the strategic capabilities.

All ideas which arise outside the framework of these two analyses will have to be tested to see whether they are feasible. There is no point in allocating resources to something that is not feasible in the environment of the firm or which is beyond the capabilities of the firm.

### Analysis of the Environment

There are various techniques and models put forth to analyze the various components or factors in the environment. In this section, we will discuss two most popular models, namely, the PEST model 1 and Michael Porter's five force model.

1 Exploring corporate strategy by Johnson and Scholes, 3/e, Prentice Hall India, P.82.

## PEST ANALYSIS

In this model, the environment is assumed to consist of four components:

i. **Political/Legal Factors:**

Stability of the government

Labor legislations

Tax laws

Foreign trade regulations

Monopolies legislations

Environmental protection laws.

ii. **Economic Factors:**

Interest rates

Business cycles

Trends in GNP

Money supply

Inflation

Unemployment

Disposable income levels

Availability of fuel and its cost.

iii. **Socio-cultural Factors:**

Changes in lifestyle

Attitudes towards work and leisure time and changes in them

Prevalence of consumerism

Population demographics

Income distribution

Social mobility

Levels of education.

iv. **Technological Factors:**

New discoveries and developments

Levels of government spending on research

Speed of technology transfer

Rates of obsolescence.

Analysis on these lines will generally throw light on whether a firm should invest in a particular area, or not. If levels of personal disposable income are falling and interest rates are rising, a firm producing consumer durables should think twice before increasing its capacity. A firm with a strong research and development base may choose without hesitation a product in which technological obsolescence rate is high.

## MICHAEL PORTER'S MODEL

This is a very popular model for analyzing the competitive position of a firm. It has been developed by Michael Porter and this discussion on the model draws extensively from his book 'Competitive Advantage'. The model is based on a set of five forces which according to him determine the competitive position. Let us now briefly discuss each of the forces.

i. **Threat of Entry:** 'Threat of Entry' indicates how likely is the entry of more and more competitors into the market, which can threaten the position of the firm. The likelihood of entry of more players is influenced by how easy or

difficult it is to enter into the market. There are certain factors in each market which make entry difficult to newcomers. Such factors are known as entry barriers. Following is a list of such entry barriers:

- Economies of scale, which give advantage to larger players.
- Minimum capital required to set-up a profitable venture in that industry.
- Access to channels of distribution.
- Cost advantages to one or more of the existing players due to possession of proprietory technology, etc.
- Expected retaliation from the existing firms.
- Legislations governing entry into the market, licensing requirements, etc.

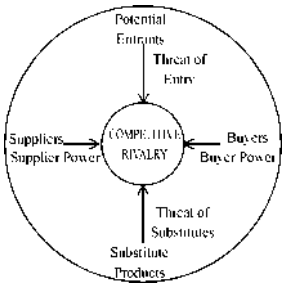
Level of differentiation of the product, i.e., whether consumers have any reason to prefer the product to be produced by a specific firm among all those present in the market. (e.g., Branding of products such as wheat flour, etc.)

All these factors may never be present in a single market. But, looking out for all of them will provide a comprehensive view of the likelihood of entry of new firms.

ii. **Bargaining Power of Buyers:** If the buyers have strong bargaining power, the producer can never be sure of getting a fair price for his product. The bargaining power of buyers will be high when:

- The buyers are few and volumes are high.
- Alternative sources of supply are available.
- The material cost makes up a substantial part of the total cost (low value addition).
- Backward integration by the buyers is not difficult.

**Figure 2: Bargaining Power of Buyers**




*Source: Competitive Strategy by Michael Porter, Macmillan Publishing Co.*

iii. **Bargaining Power of Suppliers:** The circumstances in which suppliers of the firm will have strong bargaining power can be deduced from those relating to bargaining power of the buyers:

The suppliers are few,

- Alternative sources of supply are not available,
- Switching from one supplier to another is difficult or expensive,
- Suppliers have strong brand image,
- Forward integration by the suppliers is not difficult.

iv. **The Threat of Substitutes:** The threat of substitute products may take different forms. Telephone may be substituted by Fax. Retail items like household furniture, cookers, televisions, videos can substitute each other, depending on the amount available, the householder may buy one rather than the other. That is, if the householder has a saving of $10,000, and cannot get a television for it (which he wants), he may buy other items such as furniture for his house, which is also equally necessary.

The availability of substitute products can almost act as a ceiling on the price at which the product can be sold. The principal issues in evaluating the substitute products are:

- Whether the substitute product provides a higher value than the product of the firm.
- Ease or difficulty for the consumer in switching from the original product to the substitute product.

v. **Extent of Competitive Rivalry:** Competitive rivalry will be high in an industry where the threat of entry is high, both buyers and suppliers exercise tight control and substitute products abound. Apart from these, there are also other factors which can increase the competitive pressure:

- The relative sizes of the players. If all are of equal size competition will be high.
- Stagnation, for a long time.
- High fixed costs, leading to a scramble to sell the break even quantity.
- High exit barriers.

## Analysis of Strategic Capabilities

The importance of analysis of strategic capabilities has already been discussed. In this section, we will discuss the steps in the analysis.

### RESOURCE AUDIT

As a first step, the firm considers all the resources available to it. A list is made of all the resources available, classifying wherever possible those that are readily available and those that can be obtained when required. Both quality and quantity of the resources is taken note of.

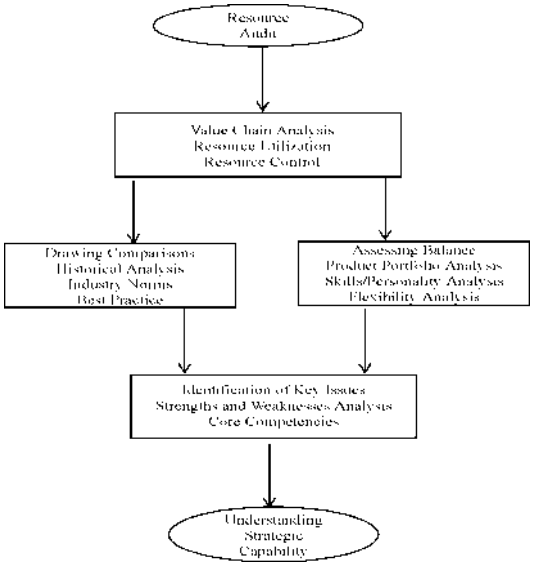
Resources are generally classified into physical, human, financial and intangible resources. All physical assets, such as land and building, plant and machinery are classified as physical resources while personnel constitute the human resources. Intangible resources are intangible assets like goodwill, etc.

### VALUE CHAIN ANALYSIS

Value analysis, another wonderful tool developed by Michael Porter, is aimed at identifying the activities of the firm that contribute value to the firm and those that do not. This is also a structured tool like the five force model.

In this model, all the activities of a firm are grouped into two: Primary activities and support activities. The primary activities are in turn divided into five groups.

**Figure 3: A Framework for Analysis of Strategic Capabilities**




*Source: Exploring Corporate Strategy by Johnson and Scholes, 3/e, Prentice Hall India.*

These five groups are as follows:

i. ***Inbound Logistics*:** Activities like receiving, storing, and distributing inputs, transportation of inputs, etc.

ii. ***Operations:*** Activities that convert the inputs into the final product like machinery, assembling, packaging, etc.

iii. ***Outbound Logistics:*** Activities related to collecting, storing and distributing the final product.

iv. ***Marketing and Sales:*** Activities relating to creation of consumer awareness about the product and sale of the product, like sales administration, advertising, sales campaigns, etc.

v. ***Service:*** Activities aimed at enhancing or maintaining the value of a product.

Each of these groups of primary activities is related to the support activities. Support activities make-up the following four groups:

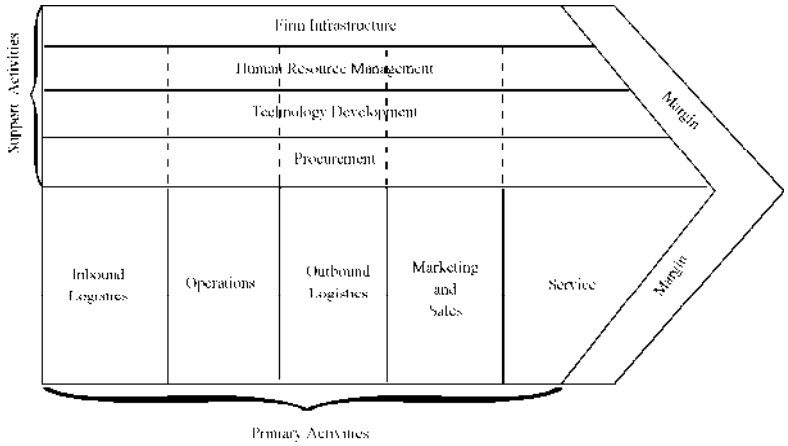
i. ***Procurement:*** Activities relating to purchase of inputs to the primary activities.

ii. ***Technology Development:*** Activities relating to acquisition or development of technology, whether the technology relates to a product or process or just a raw material.

iii. ***Human Resource Management:*** This group consists of activities such as recruiting, training, developing and rewarding the people in an organization.

iv. ***Infrastructure:*** This group consists of the development and maintenance of various structures and functional routines in an organization.

**Figure 4**




*Source: 'Competitive Advantage' by Michael Porter Resource Utilization*

Once the value activities – Primary and support are identified and their inter-linkages are established, the next step is to identify the activities and linkages that create value for the firm.

The factors that create and/or sustain the competitive advantage of a firm are the critical factors and they are called the cost drivers or value drivers. For example, a firm's competitive advantage may be its low cost of transportation consequent to its proximate location to both its suppliers and consumers. In such a case, a strategy of geographical expansion or shifting the location is unadvisable to the firm.

Sometimes, value may be created by linkages between different primary activities. For example, keeping more inventory will reduce the tightness of production schedules and enable faster reaction to customers' demands. But higher inventories will result in increased storage costs. A trade-off has to be made between the two.

An assessment of whether the value added by keeping more inventories is higher than the additional cost should be made. If it is more, the linkage becomes a value driver for the firm.

Similarly, linkages may also exist among support activities and between primary activities and support activities. All these activities and their linkages have to be carefully nurtured. Only they sustain the firm in the marketplace.

## DRAWING COMPARISONS OR COMPARATIVE ANALYSIS

In the foregoing discussion on the value chain analysis, we have seen how various primary and support activities and linkages between them can add value to a firm and what these activities are. The value chain system of analysis encourages (or rather enables) the firm to take a critical look at the various activities undertaken by it. However, it is also necessary to study how the value system of the firm has evolved over the years and why the firm has chosen to allocate its resources in a particular manner and not in any other manner. This provides valuable insights into the desirability or otherwise of changes in the resource base to be made in the future.

The past resource base is generally analyzed in three ways: One, study of the changes in the resource base and its deployment over the past; two, comparison of the performance of the firm with the performance of the industry as a whole; and three, comparison with the best practice outside the industry in which the firm operates.

Study of the changes in the resources of a firm over the years is called historical analysis. Historical analysis may reveal trends which are not otherwise very clear. For instance, a stock broking firm may find that over the years the proportion of its capital getting locked in investments has increased substantially. In other words, the firm has changed its focus from stock broking to investments. The revelation of the change in its area of business should make the firm reassess its strategies thoroughly.

Historical analysis can often be made more meaningful by comparing it with the performance of the industry as a whole and with the performance of similar companies. That is because, it is the relative position of the firm that matters the most. Care should be taken, while performing industry comparison, to check whether the industry as a whole is losing to competitors from other countries. In such a situation, it may be of no use even if the firm does better than the rest of the industry.

In best practice analysis, benchmarks (standard values for comparison) are arrived at based on the performance of those firms which are considered the best in each particular value activity. For instance, distribution is one of the value activities of a firm. The benchmark to be used by this firm is the distribution cost of the firm that is considered the best in distribution, not just in that industry to which the firm belongs, but all industries put together. This will enable the firm to overcome the drawback faced while comparing its performance within the industry.

## ASSESSMENT OF THE BALANCE OF RESOURCES

In the previous sections, we have seen how the strategic capabilities can be analyzed through study of value activities and their inter-linkages and how the activities and linkages create and maintain value. There is, however, another issue of no lesser importance that should be considered by firms – whether the resources of the firm as a whole are well balanced or not. Study of this aspect involves three factors:

i. Whether the activities carried out by various business units are complementary to each other or not (called portfolio analysis).

ii. Whether the stock of skills (or personalities) is well balanced or not.

iii. Whether the resources are flexible and adaptable to future needs or not.

## Portfolio Analysis

The BCG Matrix (named after the Boston Consultancy Group which developed it) is one of the first models of portfolio analysis. In this model, all the business units are classified into four different categories based on two criteria: whether the market share is high or low and whether the growth of the market in which the unit operates is high or low. The following figure shows the classification and the names given to each type of unit based on the two criteria.

**Figure 5: Classification of Business Units**

| | | Market Share: High | Market Share: Low |
|---|---|---|---|
| Market Growth | High | Stars | Question Marks |
| | Low | Cash Cows | Dogs |

The implications of the above classification for resource allocation are as follows:

i. The cash cow produces a lot of surplus, but has no potential for reinvestment as the growth of its market is low. Therefore, the surplus generated by cash cows should be invested in stars and question marks which offer high growth potential. But, at the same time the employees of the cash cow may experience if the surplus is diverted to other units.

ii. Question marks and stars are very demanding – not just in terms of financial resources, but also in terms of creative talent. Converting the growth potential offered by them into a useful opportunity calls for considerable amount of attention and creativity on the part of the managers. Firms should, therefore, make sure that their inventory of talented personnel is also adequate before pumping funds into them.

iii. Dogs, the name used for units which neither have a good market share at present nor promise growth in future, should be sold off immediately and the proceeds should be diverted to stars and question marks. However, if the dog proposed to be sold off is the brainchild of one of the powerful persons in the organization, selling it off can be politically troublesome. This fact should also be considered before proposing to sell off a dog.

## Analysis of Balance of Skills

It is essential for organizations to make sure that they have stock of the right skills in the right proportions. The skills required to manage the production and marketing, as well as the finances and the personnel should be available in the required quantities. The skills required, obviously, change with the position in the hierarchy and also with the nature of work in the department. An ideal machinist may be an introvert, tense that something may go wrong and always concerned with doing things in an orderly manner. The supervisor of a team of machinists, on the other hand is required to be an extrovert and dominant, one who always concentrates on achieving the goals and one who can put people into the job they can do right. He need not have original thinking, which is an essential feature for a chief executive. Not only the available various skills, but the relationships between different personalities should also be taken stock of. The relationships between different departments are more important in professional organizations where rivalry between different groups with their own specialized skills can be very serious.

## Flexibility Analysis

The resources available with an organization should be flexible enough to enable it to modify its strategy in the face of any uncertainty. For analyzing an

organization's position from this angle, the first step is to identify the areas which present uncertainty. The second step is to identify the impact of an adverse happening in the areas presenting uncertainty. The third step is to design the tactical and strategic changes the organization may have to undertake to overcome the possible problems. Then, the final step is to study how far the resources available at present permit the changes required to meet the situation. For example, an area of concern for a company may be the hike in the cost of raw materials by the present supplier/s. The impact of this happening could be a forced hike in the selling price. To avoid a hike in selling price, a company may have to use alternative raw materials or switch suppliers. Are other suppliers available? Does the presently available machinery permit changeover to a new raw material? Flexibility analysis culminates in finding answers to these questions.

### IDENTIFICATION OF KEY ISSUES

The foregoing four analyses should enable a firm to identify its core competencies. A core competency is an ability of the firm that gives it an edge over its competitors. The firm would also come to know those activities that fit best into its strategic design and those that do not. The firm should match its competencies and value drivers with its strategy and decide upon the areas and activities in which it should invest or expand. The firm should ultimately spend its resources on activities thus selected.

## IDENTIFICATION OF OPPORTUNITIES

Until now, we have seen how analysis of the activities, resources, environment, etc., can provide firms with an idea of their areas of strength, and activities in which they can invest. However, it is not necessary that investment opportunities be identified only through the methods described in the earlier sections. The idea that an investment opportunity is present in a given situation may occur to an entrepreneur in any of the following ways as well:

**Study of the Inputs and Outputs of Various Industries:** If the inputs used by the industries in an area are being transported from long distances, they can be produced locally.

**Import Substitution:** Items that are now being imported, if the level of consumption is high enough, can be produced in the domestic market. Similarly, items that are in use in other countries, but not known in the domestic market can also be produced locally.

**Reports of Studies Conducted by Institutions:** Financial institutions carry out studies on various industries. Such studies also help in identifying opportunities.

**Revival of Sick Industries:** There are many other methods in which one can get ideas or opportunities. Their number is limited only by the creativity of the person wanting the opportunity. It is only the person with a creative mind that can identify the opportunity or mould a situation into an opportunity for himself.

## A Brief Note on Creativity and Idea Generation[2]

Creativity is the ability to create what does not already exist. It is the ability to combine, or synthesize the available information and experience to see new patterns and possibilities.

Creativity is one of the resources that firms under-utilize. Though on the face of it every one in every organization welcomes creative ideas, there are many hurdles to creative ideas too:

- Creative ideas often call for changing the way things are being done at present. People are inherently averse to change.

2 This section draws extensively from Project Management by Jack R. Meredith and Samuel J. Mantel Jr, 2/e, John Wiley & Sons.

- People in the higher positions of power hate to admit that there is a better way of doing things than what they have been doing all along.
- Trying out new methods is risky – managers always want to avoid risk.

But, in spite of all these, it is only the organizations that can accept creative ideas, cope with change, and innovate their business processes and products that will survive in the long run.

## Individual Creativity

Creativity, it is said, is a function of the right hemisphere of the brain. To make the right half of the brain work, there is a series of steps, which may help:

- First, believe that all the objects, procedures, and systems are inadequate to meet our needs.
- Then, decide on the criteria or specifications that the new idea we now want to generate should meet.
- Finally, go on generating ideas. The focus while generating ideas should only be on the quantity and not on quality.

Though there is no laid down technique to enable someone in creative thinking, the following techniques have been found to be of help:

i. ***Attribute Listing:*** In this method, the attributes that can be attached to the final product are listed. The design of the product is then made based on the attributes.

ii. ***Checklist:*** A checklist consisting of a set of questions that suit a given situation is developed. Solution to the problem is sought to be found by finding answers to the questions.

iii. ***Black Box:*** The available and required inputs as well as the desired outputs are listed in this method. Then, an attempt is made to envision how the outputs are possible from the inputs.

iv. ***Directed Dreaming:*** The problem solver tries to go to sleep while thinking of the problem, with the hope that the subconscious will throw up a solution.

## Group Creativity

When it is felt that the knowledge or experience of one person is not sufficient to solve a problem, group techniques are used. It is not that the creativity will increase with knowledge or experience, but it is generally felt that more is better than less. However, having more and more knowledge may result in over-emphasis on certain constraints and cause inhibition. The following are some of the popular group creativity techniques:

i. ***Brainstorming:*** This is the most widely known and practiced technique. A group of people sit together and go on generating solutions to the problem on hand. Improving on the ideas of others and synthesizing two or more ideas given by others is welcomed, but criticism or evaluation of the ideas generated by others is prohibited.

ii. ***Delphi:*** In this method, estimates are called from a group of people considered to be experts in the field. But, the group (called panel of experts) is not allowed to meet and discuss or debate each others opinion. Individual experts are asked to give their estimates independently. This is aimed to deter those who are dominant from influencing the opinion of the others. As different experts, based on their knowledge and experience may give divergent views, a panel co-ordinator carries out the job of reconciling all their views. First, the co-ordinator solicits opinions from all the experts. Then, those whose opinions are well off the average are asked to explain the rationale of their position. A second round of questionnaire is sent to them. When a reasonable consensus is arrived at, the co-ordinator sums up

the outcome of the exercise. The main drawback of this method is its complexity. Considerable skill and tact are required on the part of the co-ordinator in handling the experts arrive at a consensus. However, this is a good method to use when the forecast depends on subjective elements such as forecasting various scenarios and the condition of an economy in each of the scenarios.

iii. ***Nominal Group Technique:*** It is a structured technique administered by the co-ordinator. It consists of the five steps:

- Silent idea generation.
- Round-robin presentation.
- Idea classification.
- Voting and ranking.
- Discussion of results.

The ideas generated in the process are ranked and the best is chosen. It may be conducted many times if the results obtained in the first round are not satisfactory.

All the techniques apart, it is the encouragement and recognition given to creative thinkers that will bring in creative ideas. The environment in the organization is also a significant factor, as creative ideas almost never arise in a highly stressful situation.

## ISSUES IN RECAPITALIZATION OF PROJECTS

The successful completion of a project entails wide-ranging and in-depth planning, as well as methodical implementation of the plans. However, meticulous the plans may be, it is possible that the implementation may not be perfectly in line with the plans. The reason is that a large number of inputs in the planning process have to be based on estimates and judgments, because of the unpredictability of the future. Differences between plans and actual project implementation may result in cost overruns, time overruns, or both. These effects may be visible either after the completion of the project, or even when the implementation is underway. A project is said to be facing a time overrun, when the activities completed have taken a longer time than planned. A cost overrun is a situation where completion of activities involves an expenditure higher than the planned amount.

### Reasons for Cost Overruns

- Cost overruns may be a result of improper planning resulting in underestimation of costs.
- A higher than expected inflation can result in a cost overrun as only the expected inflation rate would be built into the cost estimates. Projects with long gestation period are vulnerable to this risk.
- A change in the custom duty/excise duty structure may result in higher cost of inputs, and hence a cost overrun.
- A higher-than-expected adverse movement in the exchange rate may substantially increase the cost of inputs, and result in cost overruns.
- A change in government policy may reduce certain benefits (e.g., capital subsidy) available to the project, and thereby increase the project cost.

- Improper implementation of plans can sometimes result in cost overruns, specially in high-tech industries. For example, correction of an incorrect layout in a factory may involve substantial cost overruns.

The above mentioned factors are the major, but not the innumerable reasons for cost overruns. A number of big and small factors may also result in cost overruns.

### Reasons for Time Overruns

The most important reason for time overruns is delays in obtaining statutory approvals. Costs and time overruns are not independent, but are interlinked to each other. Cost overruns may lead to time overruns, and vice versa. Some costs (like labor costs) are directly linked to the time taken to complete the activity. If the completion of such an activity overshoots its allocated time, cost overrun automatically follows. Similarly, cost overrun may result in the project running out of resources before the implementation is complete. The time taken to generate additional resources would result in the implementation getting held up, and hence, in time overrun. Sometimes, there may even be a trade-off between cost overrun and time overrun. There may be situations where there is a choice between facing cost overrun or facing a time overrun. A typical example would be a situation where commitment of additional resources can help in reducing the time taken for completing an activity. In such cases, an attempt to avoid one kind of overrun may still result in an overrun, but of another kind.

## EFFECTS OF TIME AND COST OVERRUNS

Time and cost overruns generally result in the financial projections and the feasibility of the project getting adversely affected. Substantial cost and/or time overruns may result in the project starting in financial distress. While cost overruns have direct impact on the profitability of the project, time overruns affect a project's viability both directly and indirectly. The financial viability of a project may be indirectly affected due to time overrun as a result of the additional expenses incurred.

Overruns may also have an effect on the means of finance. Generally, disbursal of funds from banks and financial institutions are linked to the stage of completion of a project. A time overrun may result in non-disbursal of such funds, requiring the firm to look around for substitute sources of finance.

These factors would require the firm to prepare the revised financials of the project and examine its feasibility all over again. In case the project is no longer feasible, abandonment analysis would need to be undertaken. This analysis would focus on selecting the better alternative – continuing the project or abandoning it – based on the expenditure already incurred, the expenditure likely to be incurred if the project is carried on, the additional expenses likely to be incurred if the project is abandoned, any likely inflows in the two scenarios, and finally the losses likely to be incurred if the project is continued and if it is abandoned.

### Recapitalization

If it is decided to continue with the project, whether due to a positive feasibility analysis, or as a result of a decision taken under abandonment analysis, new sources of finance would need to be arranged. The additional finance may be generated from different sources – venture capital, additional loans from existing lenders, restructuring the terms of repayment of existing loans, additional contribution from promoters, raising equity funds from the markets, etc.

## TOOLS FOR TIMELY COMPLETION OF A PROJECT

There are some project management techniques that can be used for achieving timely completion of a project. Two important techniques are CPM and PERT. CPM stands for Critical Path Method and PERT stands for Program Evaluation Review Technique. Both CPM and PERT draw attention towards proper planning, scheduling and control of activities that form a part of the project.

PERT has a probabilistic approach. It considers the optimistic, most likely and pessimistic estimates of time that the completion of various activities is expected to take. This information is then used to ascertain the critical activities, i.e., the activities that necessarily need to be completed in time for the project to be implemented in time.

CPM is more deterministic in its approach than PERT. It considers a single estimate of the normal time which each activity should take for completion. It is thus more useful for relatively risk-free projects. These time estimates are then used to analyze the time-cost relationship of the various activities and the project as a whole. The time-cost relationship refers to the variations in the estimated time required for an activity, as a result of the resources allocated to it. This method also uses the concept of critical activities. Those critical activities that can be expedited with the least cost are allocated more resources so that the project can be finished faster.

The use of such methods can help in, but cannot assure, timely completion of projects. Hence, time and cost overruns are a reality that any project may need to face, leading to the possibility of the project needing to be recapitalized.

## SUMMARY

- A strategic plan is necessary to carry out the further actions related to a project. Wise allocation of resources or wise capital expenditure decisions are all the more important for a firm's success.
- Resource allocation can be done at the firm/corporate level or department/business unit level. The allocation pattern at the firm level depends upon the growth and decline in the resources. Resource allocation at the business unit level can be arrived at by analyzing the environment and strategic capabilities. Such analysis may be performed by using the PEST model or the Michael Porter's five force model.
- Resource Audit, Value Chain Analysis, Comparative Analysis, Assessment of the Balance of Resources, etc. should be carried out as part of analyzing the strategic capabilities. Apart from these, identification of opportunities forms the crux of project planning.
- Creativity and idea generation should substantiate the identified opportunities. In spite of making meticulous plans, they may not be properly implemented; Differences between plans and actual project implementation may result in cost and time overruns. These may have large effects on the financial position of the firm. Therefore, whenever there are cost/time overruns, recapitalization of the projects should be carried out by using tools like CPM or PERT.

## Chapter II

# Financing Strategies

**After reading this chapter, you will be conversant with:**

- Managing International Financing
- Choosing a Funding Option
- Managing Various Cost Considerations
- Resource Diversification
- Relevance of Credit Rating
- Various Cost Computations
- A View of Optimal Mix

## MANAGING INTERNATIONAL FINANCING

With the advent of liberalization and globalization, resource mobilization among different countries is gaining importance. As a result various financial instruments have been developed. In today's world of dynamic changes in the sphere of financial management, it is imperative for the financial managers to be well versed with the market developments and seize the opportunities to raise resources in a prudent manner. Today there are two major international markets: (a) Euro markets and (b) American markets to explore the possibilities of cheaply raising finances. The capability of finance managers to utilize these markets in an optimum manner depends more on their expertise and experience. The banks and merchant bankers also lend in their expertise and structure deals to benefit the borrower.

The international financial instruments are characterized by high risks and uncertainties. They also require elaborate documentation and administrative procedures. All these call for a careful handling of the resource mobilization process. Various approaches have been tried and implemented and strategies devised to accomplish the desired objectives of international financing.

In order to manage the international finances in a diligent manner, many exercises are undertaken to ascertain the costs of raising finances. A lot of uncertainties arise over the basic element of cost in terms of interest rates (Libor), exchange rate changes between different currencies, borrowing over the domestic currency, and finally the margins payable in respect of certain financing methods like Euronote issuance programs. Extensive background work has to be carried out before arriving at the final decision of choosing a specific instrument. It involves undertaking sensitivity analysis to compute effective costs apart from using the standard internal rate of return technique.

This chapter covers the various financial strategies undertaken in the context of international financing. The following are a part of the major financing strategies adopted in the realm of international financing:

- Defining borrowing parameters,
- Choosing a funding option,
- Resource diversification,
- Relevance of credit rating,
- Co-financing,
- Effective cost computations, and
- A view of optimal mix Broad Borrowing Parameters.

One of the basic strategies that borrowers need to adopt while borrowing from international markets is to ascertain the precise resources that have to be raised. They have to clearly lay down the borrowing parameters, which provide clarity about further activities to follow. The required parameters have to be set after considering the following factors, which may have a multiple effect on the corporates:

i. *Domestic Government Policies:* When the borrowers intend to access the international markets they have to keep in mind the relevant domestic regulations governing the external funds mobilization and their utilization.

ii. The maturity of forex markets in the domestic country of the issuer.

iii. The ability of the borrower to meet the payments obligations (as and when due) and the degree of currency fluctuations are to be thoroughly analyzed and factored in accordingly.

iv. A view has to be taken regarding maturity, amortization and preference for floating versus fixed rate financings of the proposed loans.

v. The drawdown modalities and the loan repayment arrangements based on cash flow characteristics have to be clearly defined.

vi. Initial costs, recurring costs, fixed and floating interest rates and rate of return characteristics should be defined.

vii. Exchange rate behavior of various currencies as against the domestic currency, country of procurement and currency pattern of export earnings should be defined beforehand.

viii. Availability of currencies and attitudes of the respective governments should be well-known.

ix. The borrower should be well versed with the domestic laws and attitudes, macroeconomic factors, government and central bank attitudes and the legal framework.

These parameters form the basis for further resource mobilization process. The finance managers should have a good grasp of the fundamentals and accordingly plan to meet the requirements of the organization.

## CHOOSING A FUNDING OPTION

Once the borrowing parameters are defined, the next stage is to choose the funding options. Basically two important funding options have to be determined by the corporates. They are:

A clear idea has to be made regarding the period for which the funds are required i.e., whether for short-term or medium-term or long-term. This again depends on the projects or programs, which are to be accomplished. These can be categorized as follows:

| | |
|---|---|
| Short-term | 180 days-working capital financing |
| Medium-term | 3 years to 5 years-expansion, modernization or diversification schemes |
| Long-term | 7 years or more-new projects or Greenfield projects |

The availability of different funding options for external financing and the objectives for which financing is required to determine the choice for schemes of financing.

The following table shows the markets, which can be accessed based on the tenors.

**Table 1: Funding Options (Basis: Maturity)**

| Long-term (7 years and more) | Medium-term (3 to 5 years) | Short-term (Up to 180 days) |
|---|---|---|
| Multilateral institutions | Eurocurrency market | Eurocurrency market |
| Global bond markets | – | – |
| Domestic banking institution | Export credits | – |

The borrowing entity has to define its preferences operating within the framework prevailing in the country of domicile. At the same time, it has to analyze the various options available in the market and identify their distinguishing features. Matching the borrowing requirements with the options and opportunities afforded by the market calls for necessary skills and expertise on the part of the borrowers. A frequent borrower in the market can easily grasp the changes and accordingly modify his plans backed by in-house expertise built over the years accessing the international markets. On the other hand, a one-time borrower may feel it to be a daunting task to raise resources from these markets.

The international capital markets offer the following funding options:

- Syndicated Euroloans.
- Bond Issues – Fixed Rate Bonds (Straights) – Floating Rate Notes (FRNs).
- Issues of Euronotes – Commercial Paper (CP), Note Issuance Facilities (NIFs) and Medium-Term Notes (MTNs).
- Issues of Euroequities – GDRs/ADRs and Euroconvertibles.
- Structured Transactions – Use of swaps and options in structuring the bond issues/syndicated loans/Euroequities.

The following table identifies the instruments, which can be accessed depending on the mode of interest rate payments.

**Table 2: Funding Options (Basis: Interest Rates Charged)**

| Fixed Rates | Floating Rates |
|---|---|
| Bond issues-straights | Syndicated rates |
| Export credits | FRN issues |
| Fixed rate loans | CP/RUFs/MTNs |
| Domestic banking institutions | Multilateral institutions |

# MANAGING VARIOUS COST CONSIDERATIONS

## Cost Considerations

When a borrower decides to raise funds from international markets, cost considerations are of prime importance. Costs play a vital role in the fund raising efforts. In any fund raising decision, the following three main cost factors are considered:

- Interest rate liability,
- Impact of exchange rate changes, and
- Arrangement fees.

### INTEREST RATE LIABILITY

Generally, all syndicated loans and Euronote issues carry fluctuating interest rates. They are rarely offered on a fixed rate basis. The advantage to the borrowers is that they pay interest according to the market rate movements. If it is low it will ease the pressure on interest payments but when the market rates rise they may end up bearing huge interest costs. Borrowers who have the flexibility to adjust their rate of return could go in for these sorts of arrangements. The interest rates are usually fixed with reference to Libor rates. Depending on the creditworthiness of the borrowers and market conditions, the rates can be fixed either above or below Libor rates.

On the other hand a bulk of the bond issues carry fixed coupons and the borrowers have to pay fixed rate of interest irrespective of market conditions. Borrowers who do not possess the necessary flexibility due to price controls or intense competition or whose cash inflows are of steady nature prefer to go in for this sort of arrangement.

Among the floating rate options, syndicated loans imply a fixed margin over Libor, whereas Euronote issues fetch a market price (higher or lower depending on market conditions), and avail the benefits of pricing undertaken on short-term financing.

### IMPACT OF FOREX RATE CHANGES

The extent to which borrowers are exposed to international currencies has a major impact in the management of their fund portfolio, because of the frequent volatile movements in the foreign exchange market. This calls for a careful watch over the foreign exchange markets and movements especially of those currencies, which

have a major dominance in capital markets abroad. The borrowers have to track regularly the movement of foreign currencies vis-à-vis their domestic currency and observe closely the changing international events, which can impact the exchange rate.

It has to be noted here that borrowers need not have any preferences for the currency in terms of the country of procurement. They can pick-up any active internationally trading currency that is most cost competitive and make arrangements to pay the suppliers by swapping the transaction. If the export earnings match the contracted liabilities (say exports income is in dollars and loan liabilities are also in dollars) then it provides a natural hedge against exchange exposures. As forex markets are very volatile, it is always difficult to find a solution that is valid all the time. Hence, handling forex liabilities calls for expertise and experience.

## ARRANGEMENT FEES

Arrangement fee refers to the fee payable both at the time of arranging the loan and also on an annual basis (wherever applicable) i.e., the borrowers should consider the impact of both the initial and recurring fees. The syndicated loans and Euronotes can be arranged at a lower recurring fee compared to bond issues or Euroequities, which are more expensive. The incidence of fee, whether initial or recurring should be computed in order to track the funding routes. Discounted cash flow techniques should be applied to compute the cost of arrangement fee. The summation of arrangement fee and interest costs will enable the firms to make a comparative analysis of the various options available and make a proper choice.

These three main cost components have to be analyzed on an exhaustive manner, as these will determine the total cost the borrower is going to incur. Apart from cost consideration the other factors, which have to be considered are as follows:

### Liquidity Conditions

In the international markets borrowers cannot have access to any currency they desire because of restrictions imposed by the respective governments and central bank authorities in various countries. Therefore some currencies are hard to be accessed in the international markets. For example, the Japanese yen faces restrictions from MOF. Therefore borrowers have to be careful about the currency they are going to deal in and should make sure that it is traded widely around the world with enough liquidity in the market. The trends in world trade and currency markets clearly point to the dominance of the US dollar followed by the Deutsche mark, Swiss franc and yen. Other currencies like the sterling, guilders, French francs etc., are insignificant. Hence, the borrowers should consider the liquidity factor.

### Types of Instruments and Payment Patterns

The availability of various financial instruments in a particular currency does not always ensure its easy accessibility, especially in the developing countries. Resources can be easily raised through the syndicated loan route as the players can access it easily, whereas the bond issue route is a bit difficult as it stipulates stringent requirements. Similarly, Euronotes or FRN issues cater to professional investors and therefore are accessible by sophisticated borrowers to a large extent. The nature of the loans borrowed from the market will determine their redemptions too. Finance raised on bonds with fixed rate of interest may involve bullet redemption facility or other instruments may have gradual amortization after a certain moratorium period. Borrowers have to fully understand the implications of the financial resources and accordingly plan for an efficient cash flow management.

### Administrative Considerations

The type of instrument accessed by the borrowers to raise finance has an underlying effect on the legal and administrative formalities. For example, Euronotes are somewhat complex and require continuous monitoring of markets and updating. They also require an elaborate administrative set-up, whereas syndicated loan is by far the simplest in this regard.

Similarly, bond issues call for enormous legal and administrative work to be carried out at the time of launching and subsequently while monitoring its movement in secondary markets. The borrower has to comprehend these administrative and legal dimensions and accordingly have adequate expertise to deal with these demands.

### Domestic Attitudes and Compulsions

When a borrower contemplates to borrow in international markets various government regulations and compulsions have to be thoroughly looked into. In certain countries governments may impose many restrictions on foreign exchange inflows and outflows. These regulatory set-up and the attendant macro compulsions have to be borne in mind by the borrowers while exploring fund raising avenues.

## RESOURCE DIVERSIFICATION

Resource diversification is one of the fundamental strategies that borrowers have to adopt for raising resources in international markets. Basically resource diversification (henceforth called as RD) can be defined as the ability of borrowers to tap various markets by means of different instruments and raise resources in diverse currencies having different characteristics. This process renders the borrower prone to minimal risk and also leads to natural hedging of risk by avoiding exposure to single currency and specific markets and instruments, there by preventing markets and currency risks from creeping into the borrowers' loan portfolio.

In today's world of constant changes both in markets and currencies, restricting oneself to fixed markets and currencies would spell doom to the borrowers. To avoid occurrence of such scenarios, it is highly advisable that borrowers look around different markets, expand relationships in these markets and develop a pool of currencies so that any adverse movements can be hedged off naturally. The advantages of resource diversification are that they can get accustomed to new markets, new instruments and thereby prevent downside risk by expanding their portfolio of currencies. Thus, an overall goal of well-accomplished and structured, diversification of borrowers' loan portfolio can bring in many gains and avoid pitfalls.

Borrowers can use various diversification tactics as part of resource diversification.

## Currency Diversification (CD)

In simple words currency diversification means being exposed to wide range of currencies like the dollar, yen, mark, swiss franc, etc., instead of restricting exposure to any single currency. Basically it is aimed at a multi-currency composition having a mix of low and high interest rate currencies, relatively weak and strong currencies and matching the liability patterns with revenue pattern in respect of the borrowers' exports. Thus, it is an attempt to create a pool of the currency basket with predetermined weightages and in line with the overall corporates objectives of risk minimization.

However, CD should be contemplated only if the borrowings are of large amounts. Small amounts of forex should not be raised through CD. For achieving resource diversification, the borrowers have to first cultivate relationships with various national markets and Euro currency markets.

During the eighties, in order to address this issue, the international markets came up with solutions in the form of transacting in currency composites. The two currencies chosen were,

- Special Drawing Rights (SDRs)
- European Currency Units (ECUs).

### Special Drawing Rights (SDRs)

This currency emerged in the international scene under the auspices of the International Monetary Fund (IMF) during the eighties. SDRs acquired formal international recognition as a unit of account in 1974, and the market took some time to recognize this instrument and put it to wide use. Basically SDR is a composition of group of currencies put together to be employed for issuance of instruments in the market.

The SDR composition currencies are subject to review by the IMF based on the changing pattern of world exports during the preceding five-year period. Its aim is to present a well-balanced composite currency, that is acceptable to the international community and offer a stable and predictable alternative.

### Valuation Mechanism

SDR exchange rates are monitored by IMF on a day-to-day basis and are determined by calculating the weighted average rate of appreciation or depreciation of the five constituent currencies. For this purpose the constituent currencies are valued at their market exchange rates for US dollar and the dollar equivalents of each of the constituent currencies are added to yield the rate in terms of US dollar and for this calculation purpose London market currency rates are used as the standard. From January 1, 1996, the weight of the 5 currencies used to calculate the amount of each of these currencies in the SDR valuation basket will be as follows:

| | |
|---|---|
| US Dollar | 39% |
| Deutsche Mark | 21% |
| Japanese Yen | 18% |
| French Franc | 11% |
| Pound Sterling | 11% |

Uses of SDRs:

- SDRs enhance international liquidity as they are a permanent part of the reserves of each country.
- A country is free to decide on how and when to use its quota of SDRs.
- Drawings against SDRs are unconditional in the sense that no change is required in the domestic policy of the borrowing country.
- SDRs are used in all transactions of the fund.
- The fund allows selling of SDRs for currency by agreement with another participant.
- The second Amendment of Articles of Agreement of the fund, allowed the SDRs to be used:
  - in swap arrangement,
  - in loans,
  - in forward operation,
  - in donation,
  - as security for the performance of financial obligations.
- The payment and repayment of SDRs is easier and more flexible under the Special Drawing Account than the fund schemes.

## Commercial Application

The SDRs were widely accepted in the market with the borrowers' willingness to raise loans by exploring this innovative idea. The early eighties saw issues like FRCDs, syndicated credits and fixed rate bond. The international markets slowly started accepting SDR denominated deposits to facilitate lending operations and in a period of three years (1981-83) there was an active commercial application involving SDRs.

However, despite initial enthusiasm on the part of certain banks and the Euro markets, it couldn't sustain for a long time. Many operational issues in the use of SDRs were found to be cumbersome and each commercial deal involved conversions into convertible currency and often calculations were complex like converting the constituent currencies into dollars and re-doing it in other currencies. These complexities posed problems and the market players gradually started losing interest in these instruments. Ultimately they gave way to the more popular emerging currency composite known as the European Currency Units (ECUs).

## EURO CURReNCY UNITS (ECUS)

ECUs in their present form emerged in 1979 with the launching of the European monetary system by the European Economic Community. ECUs can be defined as a basket type of composite currencies consisting of ten different European currencies. The content of each of these ten currencies was fixed in proportion to its share in the European trade. The weights of the constituent currencies can be obtained at any point of time by converting them into a common numeraire. Over a period of time, ECUs became very popular in the market.

Their growth has been possible because of the active support of various European bodies. The central banks and government agencies of the various European countries played an important role in adopting and popularizing the concept. Later the private and commercial organizations developed interest in the instrument denominated in ECUs and gradually market players adopted for commercial transactions.

## Application of ECUs

ECU denominated syndicated loans and bond issues started making their appearance in the market registering more than 5% of the total volumes of ECU-bonds. Excellent primary and secondary market mechanism was developed and it seemed as if there was no stopping, for the growth of ECUs denominated instruments.

**Advantages of ECUs**

The ECUs:

- imparted stability to the exchange rates,
- ensured moderation in the interest rates,
- provided a well-balanced basket of currencies comprising both the weak and strong currencies,
- reduced the transaction costs considerably.

## Downfall of the Market

Doubts began to rise in the minds of the borrowers and the market players regarding ECUs in the early nineties. They were apprehensive about the ECUs becoming an international reserve asset and it was pointed out that ECU set-up did

not enjoy the lender-of-last-resort support from European central banks. But the real blow was dealt in 1992. The growth of the market suddenly deteriorated with the events that unfolded during 1992. The entire European Monetary union came under heavy attack, as there was currency turmoil in European markets. The exchange rate mechanism virtually collapsed in September 1992 with the suspension of participation by the UK and Italy and with the devaluation of the Spanish peseta. All attempts to form a European Monetary Union (EMU) were shattered as a result of these events. Thus, the market also precipitated.

After the collapse of the two instruments i.e., SDRs and ECUs, experts called upon the market players to adopt the currency pooling method to achieve currency diversification in its true sense.

It was advised that the currency pool of the borrower should have a mix of currencies in a desired proportion, together with a mix of floating and fixed interest rate financings. Such a currency mix has to be reviewed periodically in order to change the proportion of currencies in the light of interest rates and exchange rate developments in the external markets. Currencies have to be chosen on the basis of a country's export earning currency so that the pool can benefit the borrower in meeting his financial demands from time to time. For example, the World Bank's currency mix contains as many as forty currencies pooled together.

## Product Diversification

Apart from the currency diversification, borrowers can go in for product diversification to gain from the markets in accessing different instruments having different characteristics and maturities. The international financial markets have seen many innovations taking place in the market from time-to-time. Borrowers have to take advantage of these innovations to enhance their loan portfolio. The fund raising products can be broadly classified into three categories: (i) Bonds, (ii) Euronotes and (iii) Loans. It is important that the borrowers take note of the features, peculiarities, advantages, as well as the implied exposures of these instruments. Therefore, the borrowers have to keep in mind their risk profile and accordingly access those instruments, which match their risk profile.

Let us study the merits and demerits of various instruments.

**Bonds:** These instruments help in raising huge resources at a time and the borrower can benefit by raising large loans especially for long-term projects, but the drawback is that, they have a lump sum redemption procedure, which can strain the financial resources of the borrower at the time of redemption.

**Euronotes:** The main draw back of these programs is that they are accessible only to professional issuers and require close monitoring once they are issued in the market. Among Euronotes, commercial paper is the simplest one, which can be accessed by the borrowers, but it doesn't support underwriting facility. NIFs are beneficial to the borrower as they are backed by the underwriting support. Even medium-term notes offer the borrowers much flexibility in structuring their finances.

**Loans:** Syndicated loans are one of the convenient forms of loan to borrowers and they can be availed with much ease. The advantage is that the loan allows drawdown over a period of time and also amortization of the loan in a desired manner by the borrower.

Thus, product diversification helps the borrower in a number of ways and has to be exploited in a suitable manner to derive maximum benefits.

The following Table gives the comparative analysis of various financial instruments:

**Table 3**

| | Loans | Bonds | Euronotes | Euroequities |
|---|---|---|---|---|
| Basic deal | Eurobanks extend amortizing medium-term financing | Securities issued to primary investors through a prospectus | Short-term notes under a medium-term program. For issuers maturity transformation achieved | Forex denominated equity issued to non-residents backed by underlying rupee share |
| Types | Club (private) syndicated loan (public) | Floating rate: FRNs fixed rate: straights | Commercial paper (non-nderwritten) | Global depository rights euro convertibles |
| Access | Commonly accessed | Selective access/rating relevance | Professional investors/issuers | Balance sheet strength road shows |
| Maturity | 7 years | 7 years | Investors: 3/6 months Issuers: 3-5 years | GDRs - N.A. Convertibles-3 to 5 years |
| Amortization | Half-yearly after grace period (2/3 years) | Bullet | Continuous | GDRs - N.A. Convertibles-Bullet |
| Interest rate | Libor + Margin | FRNs: Libor + Margin Straights: Benchmarks | Libor + Margin | Convertibles: coupon below bond rates |
| Management fee | ½%(flat) | 2-3 % (flat) | Negligible | 3-5 % (flat) |
| Commitment fee | ¼% on undrawn balances | N.A. | N.A. | N.A. |
| Out-of-pocket expenses | $50,000 | $ 200,000 | $ 25,000 | $ 400,000 |
| Annual recurring fees | Agency fees | Paying agents commissions | N.A. | Custodian fees depository fees |
| Security | Bank guarantee | State guarantee | N.A. | N.A. |

N.A.: Not Applicable.

## Market Diversification

The borrowers have to undertake market diversification also in order to benefit from the advantages that various markets offer. It is to be noted here that borrowers have to be constantly on the look out for the best markets where they can raise resources in a much cheaper manner in a short duration of time. Generally, borrowers have the following four market places to exploit various instruments and benefit from each of these market peculiarities.

i. *Euro currency markets*: Euro markets have long been a favorite hunting ground of borrowers since a long time. As these markets offer several advantages like, wide range of instruments having both fixed and floating interest rates open to the borrowers, open market mechanism, dynamic market conditions, excellent infrastructure of clearing and settlement systems etc., they have become favorite markets for international borrowers.

ii. *National markets*: Borrowers have an alternative way of getting their finances by exploring the financial markets of the various countries like Japan, the US etc. In Japan, the Ministry of Finance (MOF) regulates the markets, and in the US, Securities Exchange Commission (SEC). Though the regulations governing these markets are many they offer wide range of instruments.

Earlier markets dealing in ECUs were also helpful to the borrowers. Of late, certain new markets called Exotic markets are fast emerging on the world financial markets stage. These markets are open to select borrowers only.

The following Table gives a comparative analysis of various Global financial markets:

**Table 4**

| | US | Japan | Swiss/German | Euromarkets |
|---|---|---|---|---|
| Characteristics | Biggest and versatile currency: most popular | Late entry, steady interest rates | Swiss: Biggest foreign bond market, low interest rates | Biggest international market: major currencies handled |
| Regulatory framework | SEC-Watchdog securities Act,1933; Securities & Exchange Act, 1934 | MOF-Monitored, controlled yet competitive | No formal laws, central bank (BUBA/SNB) monitoring | Market driven BIS: capital adequacy: banking, prudence ensured |
| Credit rating | Formalized and obligatory | Rely on US ratings. Japanese agencies-increasing role | Informal yet effective | Not obligatory stress on internal rating |
| Method of organizing | Under Glass Stegall Act banks-merchant banks-sharp distinctions | Article 65 of SEC-Banks securities companies-sharp demarcations | Universal banking | No formal distinctions banking vs merchant banking |
| Instruments | Multiple instruments CP/MTNs/Bonds | Multiple instruments Samurai/Shibosai bonds/loans | Simplicity of approach: Public vs. unlisted bonds | Loan/bonds/ euronotes |
| Documentation | Complex and detailed SEC review | Complex original in Japanese | Compact and simplest | Elaborate protection against risks sought |
| Benchmarks | Prime lending, treasury rates, commercial paper rates | Long-term prime rate, gensaki rate, (short-term) | No benchmarks cost plus formula | Libor |
| Overall assessment | Bold and competitive | Quiet but effective, based on consensus | Cautious and conservative | Bold and innovative |

## Co-financing

Co-financing is a form of financing offered by commercial banks, multilateral bodies and governmental organizations. This concept made its appearance in the mid-seventies and was a result of the pioneering effort of the World Bank. We see many huge projects undertaken especially in developing countries. These mega projects have certain specific characteristics like huge capital outlays, long gestation periods, construction work carried for a number of years, etc.

These mega projects naturally require huge finances that are beyond the means of any single financial or commercial bank. Hence, this concept was introduced wherein resources could be pooled together by several commercial banks, multilateral bodies and government agencies. Apart from contributing finance, co-financing helps distribute the financial burden on several players so that each party can contribute its expertise in handling projects of this nature.

The seventies gave a tremendous push to the operations of the markets with Eurobanks taking keen interest in funding huge projects. But their lack of expertise, commitment of huge funds and attendant problems posed major obstacles. Added to this Euromarkets lacked any monitoring authority to oversee the operations of the projects, hence Eurobanks started having second thoughts in funding huge projects. Viewed against this background, co-financing emerged as convenient tool to finance projects of huge capital outlays as it enabled several financial agencies to pool their development expertise. Thus, the concept of co-financing provided impetus to huge projects.

The Asian Development Bank defines co-financing as follows:

"In its broadest sense, the term co-financing may be used to describe any arrangement under which the funds from the bank are associated with the funds provided by the other sources outside the borrowing country in the financing of a particular project or program".

In co-financing, the procedures for procurement of goods in the project play an important role in the financing operations of multilateral agencies. Each agency prescribes its own detailed procedures and co-financing arrangements are largely centered on these procedures.

### DIFFERENT FORMS OF CO-FINANCING

There are different ways in which co-financing is carried out by the parties involved. The following are the different forms of co-financing:

i. *Parallel Financing:* This type of co-financing is usually undertaken when the procurement procedures or preferences of the financial bodies concerned are different.

ii. *Joint Financing:* Joint financing is the traditional and common form of co-financing a given project. In this method, it is possible to undertake joint financing only when the procurement procedures are common between the two sources of finance. Thus, funds from these sources are pooled in at an agreed proportion.

iii. *Umbrella or Stand-by Financing:* Under this form of financing, finance is provided initially by the multilateral agencies. At a later stage, portions of this loan are parceled out for distribution to the co-financier and once distributed, they are canceled by the agency, which initially provided the funds.

iv. *Channel Financing:* Under this method, instead of directly taking a position in the project, co-financers prefer to channelize finance through a multilateral agency.

v. *Participation Financing:* When a private banking institution prefers to invest funds for short maturities, funds from the bank will find their way into the project financing to provide the desired maturity profile to borrowers.

### PROBLEMS WITH CO-FINANCING

When co-financing was introduced initially, there was a lot of enthusiasm on the part of the commercial banks, multilateral bodies and government agencies, but due to several problems interest in these bodies suddenly started waning and these agencies started distancing themselves from co-financing the projects. The main problems faced by these agencies were:

- *Country defaults:* Many third world countries started defaulting their loans compelling commercial banks to stay away from co-financing projects in these countries.
- *BIS guidelines:* With BIS guidelines on capital adequacy, banks from OECD countries started strengthening their capital base and showed less interest in financing projects.
- *Innovations:* Many innovations in international banking, which made banks to go in for cost-saving structures, and banks started curtailing their exposure to the projects were implemented in the third world countries.

## Expanded Co-financing Operations (ECO)

Recognizing the need for further initiatives in the context of the problems that emerged in the 1980s, the World Bank modified the mode of co-financing operations and introduced ECO in the market, which basically aimed to replace the existing co-financing method of financing projects undertaken in the third world countries.

Expanded Co-financing Operations (ECO) differs from Co-financing in several ways. These were basically developed to increase private flows. The borrowers were offered ECOs only when their projects were identified, appraised and accompanied by World Banks loans. ECOs were aimed at assisting borrowers to access sophisticated bond markets, private placement or public offerings. In order to encourage usage of ECOs, the World Bank came out to support borrowers in the form of partial guarantee, letters of credit, or stand-by-lines. As part of the ECO, the concept of Build Operate Transfer (BOT) was also propagated, which allowed borrowers to procure currency of their choice either directly or by swaps and helped them in obtaining finances easily.

Borrowers from the Third World Countries could access additional sources for finance for longer maturities from their respective markets. The World Bank also permits the exercising of the put option by the lenders whereby the bonds can be sold to the World Bank in specified circumstances.

Apart from substantial improvement in financial terms and conditions, benefits of longer maturities without recourse to government guarantees are also available under ECOs. The borrowers can avail the benefits without any legal documentation or fees. ECOs thus provide a flexible use of co-financing technique and are expected to play a meaningful role.

## RELEVANCE OF CREDIT RATING

Borrowers have to undertake the credit rating process before they raise funds from international markets. A credit rating is a measure of the creditworthiness of the borrower and generally all international lending agencies, banks, and merchant banks assess the creditworthiness of the borrowers before granting loans to them. In order to simplify their decision-making, some internationally reputed credit rating houses like Standard and Poor's, Moody's etc., undertake the process of designating the borrower's creditworthiness by means of rating. The ratings arrived at by these agencies are widely accepted by all the players in the international markets.

It is to be noted that, not all international financial transactions need to be formally rated. However, all Yankee transactions like foreign bonds issues, commercial paper, medium-term notes, foreign bond issues in Japanese markets like Samurai and Euro yen bonds require rating from these agencies. The European markets do not require credit ratings in technical sense but generally speaking European

lending institutions prefer borrowers who have good credit ratings for transacting business. Hence, it becomes compulsory for borrowers willing to access these markets to have a credit rating. It is to be noted that no rating agency undertakes a rating of the issuer or issuing company nor does it seek to recommend an issue to investors. Investors in the debt issues have to understand the rating and take an independent view of potential investments.[1]

## VARIOUS COST COMPUTATIONS

Various qualitative aspects have their effect on borrowers raising resources from international markets. Unlike the method of raising loans in domestic markets, where the effective cost of loan can be figured out precisely, it is not possible to do so in the case of international financial markets. Careful quantitative analysis of various aspects affects external financing and requires a detailed analysis before any conclusion are drawn.

For a proper and precise cost assessment, understanding of the following two costs is important:

- *Nominal costs:* The costs computed without any adjustments for uncertainties are called nominal costs.
- *Effective costs*: The nominal costs adjusted for a series of uncertainties namely, variable interest rates, floating exchange rates and margins payable, are called effective costs.

The following four key aspects can impact the cost computations of the finances raised. They are:

- Libor movement.
- Yield curve patterns.
- Exchange rates movement.
- Margins are LIBOR.

### Libor Movements

Instruments raised especially from Euro markets invariably bear floating rate of interest. The interest rates movement effects the borrowers' loan portfolio. Therefore, borrowers have to take a view of the Libor movements during the life of the loan and build in such movements in their cost calculus. The movement of interest rates in the past, present and overall economic conditions indicate emerging trends in the libor movements. If the interest rate rises then they end up paying higher interest rates in floating rate contracts.

With world markets gradually getting integrated and competitive, they exhibit cyclical pattern in their economic trends. It has been observed that interest rates in general follow these cyclical economic trends and accordingly they change the world over especially in developed economies. Borrowers also have to look for the direction in which interest rates are headed by tracking their premium or discount rates in forex markets. A scrutiny of interest rates and movements of forward exchange rates would establish the relationships as explained by interest rate parity theorem.

For computing effective rates on the loans it is necessary to look into the government and monetary authorities using interest rates as an instrument for attracting resource inflows. Because in such a scenario the interest rates are maintained artificially and hence may impact on loans raised at those interest rates. Therefore, these trends have to be identified and interest rates have to be adjusted accordingly.

1 Refer to *Appendix-I* to know more about the meaning of various ratings symbols along with the explanation.

## Yield Curve Patterns

Apart from the above discussed factors, the shape of the yield curves, i.e., relationships between short-term and long-term rates should also to be considered while arriving at the exact interest rates.

**Yield Curve Patterns**

| | |
|---|---|
| Normal shape | Short-term rates < long-term rates |
| Flat shape | Short-term rates = long-term rates |
| Inverted shape | Short-term rates > long-term rates |

## Exchange Rate Movements

The borrowers' exposure to foreign currency matters a lot. An adverse change in exchange rates can completely distort the loans contracted by the borrower and depending on the movement of currencies they can move against or in favor of the borrower. Therefore, a lot of approaches, which can help in predicting the exchange rate movements, like purchasing power parity theorem, quantity theory of money and the asset market approach are used in predicting the basis of exchange rate movements. Basically these theories try to analyze past trends and inflation rates and based on the economic and monetary situation in countries concerned they can be used to explain the exchange rate behavior with regards to technical and fundamental factors. These have to be put to use while predicting the exchange rate movements and cost computations have to be made accordingly.

## Margins Over Libor

Margins are the rates above the benchmark rate (often Libor), which the market charges the borrower keeping in view his creditworthiness on the instruments being used to raise finances. These margins are fixed at the time of signing the agreements in respect of syndicated loans and floating rate notes. Issuers and investors both agree to a medium to long-term financial arrangement without any mismatch, in respect of these financing instruments. During the eighties many prime borrowers commanded a good response, manifest in sub-Libor pricing on their CP or NIF programs. Some of them were further relieved as margins were expressed over Libid or Limean (covered in *issuance of Euronotes* chapter), which was indicative of high credit quality of the issuers. Compared to this, low quality borrowers were required to pay high margins over Libor at a level below the same on loans or FRN issues. Thus, borrowing entities have to look carefully into all the aspects of the margin requirements and be convinced that the rate on loans obtained is computed on a realistic basis.

# A VIEW OF OPTIMAL MIX

Having seen a variety of international financing techniques, we have to find an optimal means of implementing them. Optimization refers to minimization of the funding cost. An optimal mix of the strategies discussed in this chapter has to be arrived at both the micro and macro levels. To do so one should give weightages to different types of risk factors involved in raising finances both in the domestic and the forex markets.

At a micro level, a corporate unit willing to raise finances from the domestic or forex market should consider total financing requirements and apply suitable quantitative tools such as Internal Rate of Return (IRR) and arrive at such a borrowing mix which will have an IRR that will be lower than the IRR that would be earned on its operating assets. This will ensure a positive margin for the borrowing unit. The optimal borrowing mix thus arrived at should have some inbuilt cushion to accommodate any changes in the risk perceptions and to exploit the opportunities available in the financial markets.

The borrowing mix typically consists of fixed rate and floating rate borrowing in some proportions agreeable to the firm's risk perception. The borrowing mix may include loans, Euronotes bond issues, export credit etc. The proportion of the various components of the mix depends upon the market trends and opportunities available in the market.

When an optimal borrowing mix is arrived at the process should not culminate at that point since it may not continue to be the optimal mix in the future too. This is because interest rates keep changing over time and so do the exchange rates and the market trends. This uncertainty in the market will change the optimal mix. If the borrowing unit continues to hold the same mix, then it will be a disadvantage. So continuous monitoring and reviewing of the optimal mix is required. There are several liability management techniques available to arrive at a desirable pattern of financing.

At a macro level, a huge variety of sources are available to raise external finances. A different set of considerations becomes relevant to arrive at the optimal mix. Finding out an optimal mix at this stage calls for an exercise in weighing the costs and conditionalities associated with various sources of finance.

As costs and conditionalities are inversely correlated a balance has to be struck at keeping in view a country's capacity to service its debt and its willingness to accept the conditionalities. The government of a country should be able to assess the extra cost it has to incur for a conditionality free source of financing. A combination of business aspects and a country's stance on conditionalities would provide clues to the optimum external resource mobilization.

Before deciding on its source of financing the government of a country should keep all possible options open to take an appropriate financing decision. A well-planned transparent strategy is required to accomplish the overall objectives in a most cost effective manner.

## SUMMARY

- Changes in the global marketplace have to be considered for devising appropriate strategies.
- Market segmentation which is currently in vogue, the prevalence of financial services and the sophistry acquired in managing finances are some of the factors that have to be examined on the international plane.
- The capital market dynamics have made the tasks faced by finance managers more complex, they have, at the same time, opened up opportunities for market players to capitalize on the market dynamics and benefit by continuous research, would go a long way towards accomplishing a congruence of conflicting interests and achieving the desired objectives at various levels.

# Appendix I
## Rating Symbols

Rating agencies have been using different symbols to indicate long-term or short-term rating. The following chart gives S&P's and Moody's symbols:

**Rating Symbols**

**Long-Term**

| Standard & Poor's | Moody's |
|---|---|
| AAA | Aaa |
| AA | Aa |
| BBB | Baa |
| BB | Ba |
| B | B |
| CCC | Caa |
| CC | Ca |
| C | C |
| D | |

**Long-Term Rating Definitions**[2]

| | |
|---|---|
| **AAA** | Debt rated 'AAA' has the highest rating assigned by S&P implying that the capacity to pay interest and repay principal is extremely strong. |
| **AA** | Debt rated 'AA' has a very strong capacity to pay interest and repay principal and differs from the highest rated debt only by a small degree. |
| **A** | Debt rated 'A' has a strong capacity to pay interest and repay principal, although it is somewhat more susceptible to adverse effects of changes in circumstances and economic conditions than debt in high-rated categories. |
| **BBB** | Debt rated 'BBB' is regarded as having an adequate capacity to pay interest and repay principal. It normally exhibits adequate protection parameters, but adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity to pay. |

Debt rated 'BB', 'B', 'CCC', 'CC' and 'C' is regarded as having predominantly speculative characteristics with respect to capacity to pay interest and repay principal. "BB" indicates the least degree of speculation and 'C' the highest degree of speculation. While such debt is likely to have some quality and protection characteristics, these are outweighed by the large uncertainties or major risk exposures to adverse conditions.

2 Extracted from Standard and Poor's.

| | |
|---|---|
| **BB** | Debt rated 'BB' has less near term vulnerability to default than other speculative grade debts. However, it faces major ongoing uncertainties or exposure to adverse business, financial or economic conditions that could lead to inadequate capacity to meet timely interest and principal payments. |
| **B** | Debt rated 'B' has greater vulnerability to default but presently has the capacity to meet interest payments and principal repayments. Adverse business, financial, or economic conditions are likely to impair the capacity or willingness to pay interest and repay principal. |
| **CCC** | Debt rated 'CCC' has a current identifiable vulnerability to default, and it is dependent on a favorable business, financial and economic conditions to meet timely payment of interest and repayment of principal. In the event of adverse business, financial or economic conditions it is not likely to have the capacity to pay interest and repay principal. |
| **CC** | The rating 'CC' is typically applied to debt subordinated to a senior debt, which is assigned an actual or implied 'CCC' rating. |
| **C** | The rating 'C' is typically applied to debt subordinated to a senior debt, which is assigned an actual or implied 'CCC' rating. |
| **D** | Debt is rated 'D' when the issue is in payment default, or the obligor has filed for bankruptcy. The 'D' rating is used when interest or principal payments have not expired, unless S&P believes that such payments will be made during such a grace period. |

**Plus (+) or minus (–):** The ratings from 'AA' to 'CCC' may be modified by the addition of a plus or minus sign to show standing within the major rating categories.

**Rating Symbols**

**Short-Term**

| Standard & Poor's | Moody's |
|---|---|
| A-1 | P-1 |
| A-2 | P-2 |
| A-3 | P-3 |
| B | |
| C | |
| D | |

**Short-Term Rating Definitions**

| | |
|---|---|
| **A-1** | This highest category indicates that the degree of safety regarding timely payment is strong. Debt determined to possess extremely strong safety characteristics is denoted with a plus sign (+). |
| **A-2** | This implies that the capacity for timely payment on issue with this designation is satisfactory. However, the relative degree of safety is not as high as for issues designated 'A-1'. |
| **A-3** | Debt carrying this designation has an adequate capacity for timely payments. It is, however, more vulnerable to the adverse effects of changes in circumstances than obligations carrying the higher designations. |
| **B** | Debt rated 'B' is regarded as having only speculative capacity for timely payment. |
| **C** | This rating is assigned to short-term debt obligations with a doubtful capacity for payment. |
| **D** | This rating indicates that the obligation is in payment default. |

## Chapter III

# Venture Capital

**After reading this chapter, you will be conversant with:**

- Concept of Venture Capital
- History and Evolution of Venture Capital
- Investment Objectives
- Various Stages in Venture Financing
- The Venture Investment Process
- Structuring the Venture Capital Deal
- Organization of Venture Capital Businesses

## CONCEPT OF VENTURE CAPITAL

Venture Capital (VC) means many things to many people. It is in fact nearly impossible to come across one single definition of the concept. Jane Koloski Morris, editor of the well known industry publication, Venture Economics, defines venture capital as "providing seed, start-up and first stage financing" and also "funding the expansion of companies that have already demonstrated their business potential but do not yet have access to the public securities market or to credit oriented institutional funding sources....". Venture capital also provides management/ leveraged buyout financing. Frederick R. Adler, a successful practitioner of the profession, describes the process as one of investing in risk capital in an enterprise in which the venture investor shares ownership as well as board of directors level management responsibilities with the founding management team.

The European Venture Capital Association describes it as risk finance for entrepreneurial growth oriented companies. It is investment for the medium- or long-term seeking to maximize medium- or long-term return for both parties. It is a partnership with the entrepreneur in which the investor can add value to the company because of his knowledge, experience and contact base.

Steven James Lee defines it as an actual or potential equity investments in companies through the purchase of stock, warrants options or convertible securities. Venture capital is a long-term investment discipline that often requires the venture capitalist to wait for five or more years before realizing a significant return on the capital resource.

In an attempt to define venture capital as generically as possible for an international study, International Finance Corporation, Washington DC defines VC as an equity or equity featured capital seeking investment in new ideas, new companies, new products, new processes or new services, that offer the potential of high returns on investment. It may also include investment in turnaround situations. A narrow definition of venture capital is, therefore, too limiting.

It would appear from the foregoing that venture capital investments would have one or more of the following characteristics:

i. Equity or equity-featured instrument of investment.

ii. Young companies that do not have access to public sources of equity or other forms of capital.

iii. Industry, products or services that hold potential of better than normal or average revenue growth rates.

iv. Companies with better than normal or average profitability.

v. Products/services in the early stages of their life cycle.

vi. Higher than average risk levels that do not lend themselves to systematic quantification through conventional techniques and tools.

vii. Turnaround companies.

viii. Long-term (more than three years) and active involvement with investee.

One of the important characteristics of venture capital from conventional loan is the participation of VC in the management of the VCU. VC intends to increase the value of the VCU by helping the company in its marketing and financial aspects, thereby increasing the profitability of the company. VC provides highly professionalized and competent advise on the technical aspects of the functioning of the company. The following are the activities of the VC concerning the VCU:

i. Assist in Financing, Marketing and Strategic planning of the VCU.

ii. Recruitment of key personnel in the initial stages.

iii. Obtaining bank and other financing avenues for the VCU.

iv. Introduction to strategic partners and vendors.

Comparison may be done on the investment patterns in bought out deals and conventional financing with essentially high risk technology intensive funding for first generation entrepreneurs.

**Table**

| | Venture Capital | Bought-out Deal | Conventional Loan Financing |
|---|---|---|---|
| Participation in management | High. As the VC has a equity stake in the VCU, it is generally bound to follow the advice. Also, considering the expertise of VC, participation is high in strategic planning. | Low. Though the equity in the company is held by the sponsor, there would not be any direct interference in the management except in exceptional cases. | Nil. The lender does not have the expertise or interest in promoting the company as long as the payments schedule is followed. |
| Returns to the investor | Extremely high in most of the cases considering the high risk in such investment. Uncertainty is quite high. | High. Though the company is not into technologically intensive. Exit from the investment is reasonably certain. | Moderate. As the payment schedule is finalized before the investment, there is no uncertainty. |
| Time period | Very long. Exit from investment takes 7-10 years on an average. | Not very long. Exit from investment is normally done immediately after the expiry of lock-in period. | May be set as per choice of the investor/ lender. |
| Regulations | Not high as the venture capital is considered reasonably nascent for regulations to be in place. Also, with high risk being inherent in the investment process, regulations only oversee the process of such investment not the safety. | High. Bought out deals are reasonably well regulated as it concerns listing of security in the stock exchange where small investor's interests have to be protected. | Moderate. Regulations cover the safety of such investments/ lending. |

## HISTORY AND EVOLUTION OF VENTURE CAPITAL

Since its humble beginnings in 1946 through the American Research and Development Corporation of General Doriot "the institutionalization of the venture investment process" has made significant strides. Observers of the industry trace the American industry as having progressed through distinct phases of evolution in the seventies and eighties. Soon however, the concept of professional VC attained popularity in Canada and a number of other European countries with the British industry in a pioneering role. Presently, VC in one form or the other has come to stay in over thirty five countries including Japan, South Korea, Philippines, Singapore, Malaysia, Taiwan and India in Asia, Kenya and Nigeria in Africa and Argentina and Brazil in South America. It must be highlighted that VC as obtains in some of these countries is predominantly engaged in providing term finance for small business in addition to equity and may therefore not conform to the definition of VC spelt out elsewhere in this paper. Further, barring the UK, USA,

Canada, Japan, Sweden, Germany and the Netherlands the industry has a relatively limited activity base measured in terms of number of registered VC firms, committed capital or invested capital measured as share of GDP.

## VC and the Environment

### ROLE OF VC IN THE ECONOMY

In most economies that have VC firms or a VC industry of any sort there is a good deal of brou-haha about the role of VC. Many among those that do not have a VC industry discuss the need for a VC industry. The importance of VC is not on account of the volume of capital it provides; it is more on account of its indirect benefits. By providing investment and management support to companies that are engaged in the development/manufacture of new and innovative products, technologies and services, VC investments enable the development of entirely new lines of business. Secondly, VC firms typically prefer to invest in knowledge-based industries such as computer software. This in turn has catalyzed entrepreneurship amongst professional managers and technologists to a considerable degree. And last but not the least, VC has played an unparalleled role in bringing technologies to the market place.

## Enabling Environment for VC

The growth and development of a healthy VC industry is dependent on the availability of an enabling environment.

**Enterprise Culture:** The general philosophy of the government towards entrepreneurs and private enterprises is among the more fundamental requirements. A strongly supportive attitude towards private enterprise would be manifested in the form of appropriate income and wealth tax policies, economic administration regime by way of liberal or no licensing procedures and limited presence of and reservation for state owned enterprises in business.

**Tax Policy:** Tax policies have been the instruments with the highest impact in promoting the development of a healthy VC industry. The impact of the Tax Reform Acts (TRAs), which increased the capital gains taxation rates in USA had a directly identifiable negative impact on flow of funds into VC firms in USA until the TRA of 1978 corrected this position by reducing the tax rate on capital gains resulting in a dramatic impact of the flow of funds into VC firms.

**Capital Market:** The issue of exit is as important as that of entry in a VC investment. Public offering of the portfolio company's stock appears to be the most preferred exit route for any VC investor. A vibrant, healthy, stable capital market is therefore an important pre-requisite for VCs to 'get liquid' their investments. Given that most VC portfolio companies could develop into public offering candidates long before they qualify on the main stock exchange of the country, there is a need for an exchange or a market mechanism that addresses the trading of VC portfolio company stocks[1].

The National Association of Securities Dealers Automated Quotation System (NASDAQ) of the US and the Unlisted Securities Market (USM) of the UK provide this exit vehicle for VC investors as well as other companies whose equity base is small. Similar market mechanisms are known to exist in Australia, France, Nigeria, Malaysia, Singapore and Spain (Madrid) which are in various stages of implementing a stock exchange for such a purpose.

It is also equally important to have an efficient capital market in place. The fundamental basis of VC investment is that, while the public market provides risk adjusted rate of return that reflects the cost of capital as determined by free and

1 VC portfolio companies may often not qualify on one or more listing criteria adopted by SEs. These could be in terms of the minimum paid-up capital of the company, revenue and profitability record, number of years in business and so forth. The basic premise here is that these companies could invite public participation in the equity by making adequate disclosures backed by necessary investor protection mechanism.

competitive market forces, VC investors post higher rates of return by cashing – in on the imperfections in the private equity market. Absence of such efficiency in the main market for whatever reason provides opportunities for realizing super normal rates of return.

**Free Market Forces:** It would not be incorrect to say that innovation is the mother of VC investments. The compulsion to innovate results in better and new products/services and thereby opportunities for VC investments. In a protected economy/business environment, with no compulsion/incentive to compete through innovation, VC may not find many opportunities to invest.

**Complementary Financial Institutions:** VC investors meet most of the early stage funding requirements of the start-up portfolio companies. However as companies grow in revenue, asset base and profitability they would look increasingly to the complementary financial institutions, which would often be credit oriented, in order to leverage their equity share capital. In sophisticated economies, banks have the specialized skills and resource base to appraise and provide the necessary working capital funding to small and medium enterprises. In less developed economies, specialized agencies would need to be set-up for the purpose with an appropriate mandate.

**Professional Entrepreneurship:** The ethos of building business for financial gains and the preparedness to sell them off to an acquirer provides an important exit route to the VC investor.

## INVESTMENT OBJECTIVES

The following are extracts from published material distributed by some of the typical VC funds/companies:

1. to invest in certain specific important areas of business; viz, those in which they have some expertise and which provide scope for growth and profits... such as speciality chemicals... healthcare products… electronics and computers… and consumer products;
2. encouraging commercial application of indigenously developed technology;
3. adapting imported technology to wider domestic applications,
4. commercialization of an innovative product/ process based on indigenous or imported technology;
5. providing assistance to existing small and medium companies for latter stage investments and follow-up on investment in high tech areas aimed at diversification and expansion; and
6. providing assistance for management buy-outs specially by the executive(s) working in such firms.

The development approach is in sharp contrast to the investment objectives of the professionally managed VC funds in Western Europe and North America where the primary objective is maximizing the return on the portfolio and advancement of technology/development of product/markets of an economic by-product or at best a means to achieving financial objectives.

### Financing Instruments

The VC industry has attempted to maintain the risk-reward sharing nature of the relationship through a variety of innovative instruments for structuring the investment. These have been in response to the:

a. constraints on pricing imposed by the securities pricing regulations;
b. entrepreneurial ethos which lays considerable emphasis on ownership and control of the company; and
c. company law regulations.

While the various VC funds/companies have tried to nomenclature instruments differently, essentially these could be classified into three broad categories with individual tweaks and twists to the basic forms. These are:

i. Equity investments.

ii. Quasi-equity forms of hybridized debt.

iii. Normal loan.

## EQUITY INVESTMENTS

Almost all VC funds/companies appear to prefer a minority position in the investee company. Subscription has almost always been at par so far since the investees have been start-ups or early stage companies and a premium would have been difficult to justify under the guidelines issued by the Controller of Capital Issues (CCI). When its risked the equity investment usually carries with it a number of protective covenants (especially in situations where the VC investor is a significant stockholder) including several standard ones such as the right to appoint nominee(s) on the Board of Directors, authority to examine books of accounts, carry out concurrent audit and sometimes even power to veto decisions on a set of issues that may be agreed upon with the company's management/ promoters.[2] The timing of the disinvestment, though, will be at the VC investors' option. The VC investor also requires the investee, through the agreement, to have the company's stock listed on one or more stock exchange(s) as desired by the VC investor. The pricing of the sale-back of the equity to the promoters/management is often linked either to the market price upon listing of the scrip or some formula. The equity investments also carry 'a first right of refusal in favor of the promoter'. What needs to be noted is that most VC funds/investors provide the buyback 'comfort'.[3]

## QUASI-EQUITY INVESTMENTS

Most quasi-equity investments, as mentioned earlier, have evolved in response to the regulatory framework as also to the reluctance of the average entrepreneur to permit external participation in 'his' company's equity. The quasi equity loans come in two broad types:

i. A loan whose servicing is linked entirely to the company's/project's performance and thus participate totally in the downside and significantly in the upside in a manner agreed upon upfront.

ii. A loan on which there is a minimum obligation (be it of interest or principal) contracted at reasonably low levels irrespective of performance and an upside sharing component.

In the former type the servicing is through a percentage charge on sales that is contracted upfront taking into account the future sales and profitability of the project/company and the servicing capacity available in the company's cash flow. The charge is fixed at a level that would provide a discounted rate of return (on the loan) commensurate with a high-risk equity investment. The charge payment

2 Some VC investors have however realized the need for subscribing to the share capital at a premium for a variety of reasons such as timing of entry into the company and need to provide financial incentives to operating management. In order to pay an effective price for the shares of the company, they have worked out ingenious methods such as providing low cost debt, renunciation of rights issued at par in favor and so forth. With the abolition of the CCI and removal of restrictions on pricing, VC investors have greater freedom in pricing of equity subscription and structuring of deals. However, if will be difficult to raise equity at premium since the borrowers are yet to prove themselves.

3 The 'first right of refusal' provides the promoter or his assignees to buy the VC investors' share holding based on an agreed upon pricing formula. The VC investor would be in a position to sell his investment (usually on not more attractive terms) to a third party only after the promoter turns down the offer subject to a limited time period.

period is normally co-terminus with the maturity of the venture fund. Interestingly these also carry, occasionally, some collateral cover as well such as a charge on the company's assets. The rate of return on a reasonable set of revenue and profitability expectations would be comparable to that achievable on equity investments. Sometimes the charge on sales payable is subject to a cap on the total amount payable. In the latter type again two models obtain. The VC investor either stipulates a fixed repayment schedule for the loan and a variable rate of charge in lieu of interest; or a fixed repayment schedule, a fixed floor rate of interest and a variable premium to share the upsides. This type of quasi equity loans also carry collateral.

The quasi-equity investments also come with a number of protective covenants including option to appoint nominee(s) and occasionally an option to convert the loan into equity shares in the investee company in the event of consecutive, willful default or non-achievement of some agreed upon performance milestones. The intent in such situations is to be able to obtain control of the company and effect restructuring plans, if any required.

Quasi-equity instruments such as the above suffer from a number of apparent shortcomings. Firstly, they involve cash pay-outs from the investee company during the growth phase, when the company needs to conserve cash most. A second shortcoming is from the investor's standpoint: That of tracking and accounting the payments and ensuring the accuracy of the sales accounting by the investee company. This latter is also a point of potential abuse. The quasi-equity loan will perhaps continue to be a necessary evil till such time as the pricing regime for equity issues permits equity shares to be the instrument for sharing risk and reward equitably and providing financial incentives to the participants that matter.

The quasi-equity loan has not found much favor or fancy in Western Europe or North America. However, in some of the newly industrialized countries such as Korea and emerging Asian economies, the conditional loan has been widely applied in structuring VC investments.

### NORMAL LOANS

Of all the financial instruments mentioned above, it may be safely stated that the normal (term) loan is the least preferred alternative. The reason, presumably and understandably, is that it is not ideally suited for VC situations where the cash flows of the firm cannot be predicted with even a reasonable degree of certainty to be able to contract fixed repayment and interest obligations. The limited normal loans that VCs provide appear to be to meet short-term/medium-term requirements of portfolio companies to help them tide over temporary cash shortages. These are short-term maturities (ranging from six to eighteen months) and carry interest at a rate equal to (or slightly higher) then the lending rate of commercial banks.

## VARIOUS STAGES IN VENTURE FINANCING

### Early-stage Financing

**Seed Financing** is a relatively small amount of capital provided to an entrepreneur to prove a concept. It may include product development and market research as well as building of management team and developing a business plan, if the initial steps are successful.

**Start-up Financing** is provided to companies completing product development and initial marketing. Companies may be in the process of organizing or they may already be in business for one year or less but may have not sold their product commercially. Usually such firms will have made market studies, assembled the key management, developed a business plan and are ready to do business.

- **First Stage Financing** is provided to companies that have expended their initial capital (often in developing and market testing a prototype) and require funds to initiate full scale manufacturing and sales.

- **Second Stage Financing** is working capital for the initial expansion of a company that is producing and shipping and has growing accounts receivable and inventories. Although the company has made progress, it may not be showing profits yet.
- **Third Stage or Mezzanine Financing** is provided for major expansion of a company when sales volume is increasing and that is breaking even or profitable. These funds are used for further plant expansion, marketing, working capital or development of an improved product.

**Bridge Financing** is needed at times when a company plans to go public within six months to a year. Often, bridge financing is structured so that, it can be repaid from the proceeds of a public underwriting. It can also involve restructuring of major stockholder positions through secondary transactions. Restructuring is undertaken if there are early investors who want to reduce or liquidate their positions or if management had changed and the stockholdings of the former management, their relatives and associates are being bought out to relieve a potential over-supply of stock when going public.

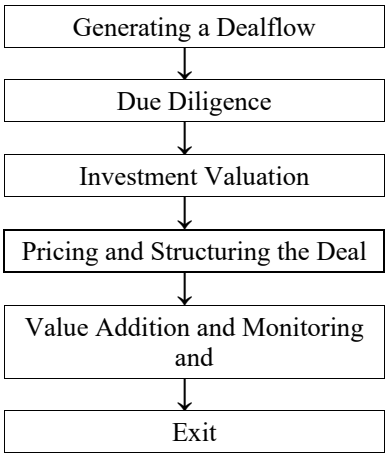
## Acquisition (Buyout) Financing

Acquisition Financing provides funds to finance an acquisition of another company. Management/Leveraged Buyout funds enable an operating management group to acquire a product line or business (which may be at any stage of development) from either a public or private company; often these companies are closely held or family owned. Management/LBOs usually involve revitalizing an operation with entrepreneurial management acquiring a significant equity interest.

# THE VENTURE INVESTMENT PROCESS

The VC investment process has variances/features that are context specific to countries/regions. However, activities in a VC fund follow a typical sequence with a number of commonalities. The typical stages in an investment cycle are as below:

**Figure**




## Generating a Dealflow

In generating a dealflow, the VC investor creates a pipeline of 'deals' or investment opportunities that he would consider for investing in. This is achieved primarily through plugging into an appropriate network. The most popular network obviously is the network of VC funds/investors. It is also common for VC funds/investors to develop working relationships with R&D institutions, academia, etc., which could potentially lead to business opportunities. Understandably, the composition of the network would depend on the investment focus of the VC fund/company. Thus VC funds focusing on early stage, technology based deals would develop a network of R&D centers working in those areas. The network is

crucial to the success of the VC investor. It is almost imperative for the VC investor to receive a large number of investment proposals from which he can select a few good investment candidates finally. Successful VC investors in USA examine hundreds of business plans in order to make three or four investments in a year.

It is important to note the difference between the profile of investment opportunities that a VC would examine and those pursued by a conventional credit oriented agency or an investment institution. By definition, as mentioned earlier, the VC investor focuses on opportunities with a high degree of innovativeness.

The dealflow composition and the technique of generating a dealflow can vary from country to country. Different VC funds/companies have their own methods varying from promotional seminars with R&D institutions and industry associations to direct advertising campaigns targeted at various segments.

## Due Diligence

Due diligence is the industry jargon for all the activities that are associated with evaluating an investment proposal. It includes carrying out reference checks on the proposal related aspects such as management team, products, technology and market. The important feature to note is that VC due diligence focuses on the qualitative aspects of an investment opportunity.

It is also not unusual for VC funds/companies to set-up an 'investment screen'. The screen is a set of qualitative (sometimes quantitative criteria such as revenues are also used) criteria that help VC funds/companies to quickly decide on whether an investment opportunity warrants further diligence. Screens can be sometimes elaborate and rigorous and sometimes specific and brief. The nature of screen criteria is also a function of the investment focus of the firm at that point. VC investors rely extensively on reference checks with 'leading lights' in the specific areas of concern being addressed in the due diligence.

## Investment Valuation

The investment valuation process is an exercise aimed at arriving at 'an acceptable price' for the deal. Typically, in countries where free pricing regimes exist the evaluation process goes through the following sequence:

1. Evaluate future revenue and profitability.
2. Forecast likely future value of the firm based on expected market capitalization or expected acquisition proceeds depending upon the anticipated exit from the investment.
3. Target on ownership position in the investee firm so as to achieve desired appreciation on the proposed investment. The appreciation desired should yield a hurdle rate of return on a Discounted Cash Flow Basis.
4. Symbolically the valuation exercise may be represented as follows:
   NPV = [ (Cash)/(Post) ] x [ (PAT x PER) ] x k;

   Where,

   a. NPV = Net Present Value of the cash flows relating to the investment comprising outflow by way of investment and inflows by way of interest/dividends (if any) and realization on exit. The rate of return used for discounting is the hurdle rate of return set by the VC investor.
   b. Post = Pre + Cash.
   c. Cash represents the amount of cash being brought into the particular round of financing by the VC investor.
   d. 'Pre' is the pre-money valuation of the firm estimated by the investor. While technically it is measured by the intrinsic value of the firm at the time of raising capital, it is more often a matter of negotiation driven by the ownership of the company that the VC investor desires and the ownership that the founders/management team is prepared to give away for the required amount of capital.

e. (PAT) is the forecast of Profit After Tax in a year and often agreed upon by the founders and the investors (as opposed to being 'arrived at' unilaterally). It would also be net of preferred dividends, if any.

f. (PER) is the price-earnings multiple that could be expected of a comparable firm in the industry. It is not always possible to fund such a 'comparable fit' in VC situations. That necessitates, therefore, a significant degree of judgment on the part of the VC to arrive at alternate PER scenarios.

g. 'k' is the present value interest factor (corresponding to a discount rate 'r') for the investment horizon.

h. It is quite apparent that PER times PAT represents the value of the firm at that time and the complete expression really represents the investor's share of the value of the investee firm. The following example illustrates this framework:

### Illustration

Best Mousetrap Company has developed a prototype which needs to be commercialized. The company needs cash of $2 million to establish production facilities and set up a marketing program. The company expects that the company will go public in the third year and have revenues of $70 million and a PAT margin of 10% on sales. Assume for the sake of convenience, that there would be no further addition to the equity capital of the company.

Prudent Fund Managers (PFM) propose to lead a syndicate of like-minded investors with a hurdle rate of return of 75% (discounted) over a five year period based on the company's sales and profitability expectations. Firms with comparable sales and profitability and risk profiles trade at 12 times earnings on the stock exchange. The following would be the sequence of computations:

In order to get a 75% return p.a., the initial investment of $2 mn must yield an accumulation of 2 x $(1.75)^5$ = $32.8 mn on disinvestment in year 5. The company's market capitalization in year 5 is likely to be $(70 x 0.1 x 12) mn = $84 mn.

Percentage ownership in the company that is required to yield the desired accumulation will be $\frac{32.8}{84}$ x 100 = 39%.

Therefore the post-money valuation of the company at the time of raising capital will be equal to $ $\frac{2}{0.39}$ mn = $5.1mn which implies that a pre-money valuation of $3.1mn for the company.

Another popular variant of the above method is the First Chicago Method (FCM) developed by Stanley Golder, a leading professional VC manager. FCM assumes three probable scenarios, 'success', 'sideways survival' and 'failure'. Outcomes under these scenarios are probability weighted to arrive at an expected rate of return.

In reality the valuation of the firm is driven by a number of factors. The more significant among these are:

i. **Overall Economic Conditions:** A buoyant economy produces an optimistic long-term outlook for new products/services and, therefore, results in more liberal pre-money valuations.

ii. **Demand and Supply of Capital:** When there is a surplus of VC chasing a relatively limited number of VC deals, valuations go up. This can result in unhealthy levels of low returns for VC investors.

iii. **Specifics of the Deals:** Such as the founder's/management team's track record, Innovativeness/Unique Selling Propositions (USPs) the service potential size of product/market, etc. affects valuations in an obvious manner.

iv. **The Degree of Popularity:** Of the industry/technology in question also influences the pre-money. Computer Aided Software Engineering (CASE) tools and Artificial Intelligence were one-time darlings of the VC community that have subsequently given place to biotech and retailing.

v. **The Standing of the Individual VC:** Well established VC who are sought after by entrepreneurs, for a number of reasons, could get away with tighter valuation than their lesser known counterparts.

vi. **Investor's Considerations:** Could vary significantly. A study by an American VC, Venture One, showed that large corporations who invest for strategic advantages such as access to technologies, products or markets pay twice as much as a professional VC investor for a given ownership position in a company but only half as much as to investors in a public offering.

vii. **Valuation Offered on Comparable Deals:** Around the time of investing in the deal.

Quite obviously, valuation is one of the most critical activities in the VC investment process. It would not be improper to say, that the success of a fund will be determined by its ability to value/price the investments correctly.

Sometimes the valuation process is broadly based on thumb rule metrics such as multiples of revenue. Though such methods would appear rough and ready, they are often based on fairly well-established industry averages of operating profitability and assets/capital turnover ratios.

## STRUCTURING THE VENTURE CAPITAL DEAL

VC investments require and permit innovativeness in financial engineering. While VC investments follow no set formula, they attempt to address the needs and concerns of the investor and the investee.

The investor tries to ensure the following:

i. Reasonable reward for the given level of risks;

ii. Sufficient influence on the management of the company through board representation;

iii. Minimization of taxes; and

iv. Ease in achieving future liquidity on the investment.

The entrepreneur at the same time seeks to enable:

i. The creation of the business that he has conceptualized (operating and strategic control);

ii. Financial rewards for creating the business;

iii. Adequate resources needed to achieve their goal; and

iv. Voting control.

Common considerations for both sides include:

i. Flexibility of structure that will allow room to enable additional investments later, incentives for future management and retention of stock if management leaves.

ii. Balance sheet attractiveness to suppliers and debt financiers.

iii. Retention of key employees through adequate equity participation.

## Value Addition and Monitoring

We have seen in our earlier definition of VC that sustained, active involvement over an extended period of time is one of the distinguishing characteristics of VC. This process of the VC investor's involvement in the portfolio company is often referred to broadly as 'value addition'. The 'value' that the VC brings to the portfolio company can vary from one VC professional to another depending upon the individual's background and approach to VC. There are VC professionals, especially those who invest in very early stage situations, whose involvement can go up to providing operating management support. There are also others, exemplified by LBO specialists and mezzanine investors, whose involvement may not extend beyond lending an avid ear to the proceedings of quarterly or monthly board meetings. The extent of involvement could also depend upon the VC investor's stake in the company and his role in the consortium, when the investment has been syndicated among a number of investors. In a consortium, it is not an uncommon practice for one of the investors to play the role of the lead investor taking upon himself significant responsibilities with respect to the portfolio company, on behalf of himself as well as the co-investors in the syndicate. Investment exposure and/or specific ability to add value and/or geographic presence are some of the usual criteria for a VC investor being designated lead investor.

The nature of involvement is situation-specific as mentioned earlier. However, some generalizations have been attempted based on empirical research. One such study revealed the following general patterns:

i. The most intense involvement occurs at the tender early stages of the venture;

ii. Openness of communication and chemistry are crucial;

iii. Venture capitalists add value in a variety of ways, especially through strategic and supportive roles; and

iv. Most of the venture capitalist's key role become increasingly important as the venture develops.

If value addition represents the pro-active stance of a VC investor to maximize the value of his portfolio company, monitoring represents the reactive obverse of avoiding losses by seeing red flags in advance that warn of impending danger. Monitoring portfolio companies is a straightforward, yet delicate task. The straightforwardness lies in the well established tools and techniques that are used for the purpose: Periodic reports, Board of Directors meetings, review sessions and so forth. The delicacy arises, out of the need to draw a line between policing in distrust and monitoring out of caution.

## Exit

The process of exiting from a VC investment is as important as in any other process in the investment cycle. The two exit options are:

i. Sale of the VC's position either along with or subsequent to a public offering; and

ii. Acquisition of the company.

A public offering is the preferred route of exit for VCs. In North America and Western Europe, a well developed second tier market serves as a convenient vehicle for such an exit. Public offerings result in higher multiples in the case of a successful venture backed company. Secondly, the acquisition market in these countries is a well developed mechanism. Over the years building companies for acquisition by a larger corporate for strategic considerations has become a popular trend.

## ORGANIZATION OF VENTURE CAPITAL BUSINESSES

In the early days, venture investment was primarily the activity of wealthy individuals, syndicates organized by investment bankers or by a few family organizations employing professional managers. The "first formal VC institution" is the now legendary American Research and Development Corporation. During the fifties and the sixties, the Small Business Investment Corporations, (SBIC), engaged in financing young, entrepreneurial companies, got involved albeit unintentionally, in funding some risky ventures as well. For numerous reasons however the SBIC program as a whole is reported to have met with limited success.

The two other types of VC investment agencies are:

- Private venture capital firms.
- The subsidiaries of financial and non-financial corporates.

Most private VC firms are organized as limited partnerships and a few as corporations with restricted shareholding. A Limited Partnership (LP, hereafter) is one where the investors have limited financial liability, but are subject to the other governing aspects of a partnership. Typical investors in such funds could be pension funds, large corporates, state/municipal funds, family trusts and banks. Pension funds view venture investments as an alternate asset class while large corporates invest in venture funds with the strategic objective of obtaining a 'window' into emerging technologies being developed by young, venture backed start-up companies. State/municipal government funds use investment in venture funds for promoting local economic/industrial development through venture capital-led investment formation. A LP is managed by General Partners (GPs). GPs are usually professionals from diverse backgrounds who have made mid-career changes into venture investment management. Thus, there are technologists, scientists, managers, lawyers and bankers, to name a few categories, who have made a mark in venture investment management in the USA. Most of them have a track record of excellence in their previous vocations. The GPs are compensated through a management fee which is a percentage of the assets/funds managed by them. The fee most often is 2%-2.5%. (Some successful GPs manage to negotiate fees linked to the Net Asset Value (NAV), thus incentivise to providing the GP to maximize the NAV of the fund). In addition, the GPs also retain a part of the appreciation in the fund value. This share of the appreciation is also known as 'carried interest' and is usually 20% of all pay-outs to the investor beyond the principal amount of the fund. LPs have attained popularity for the following reasons:

i. The partnership itself is not taxed.
ii. The partner's liability is limited to interest in the partnership.
iii. The partnership life process is fixed at the time of formation and is fitted to match the duration of extended investment holding periods.

It would be relevant to point out at this juncture that corporate venture fund managers met with limited success in USA. The requirement of specialized skills to succeed in venture investing is cited as one of the reasons. Corporates and banks seem to have discovered that it is not easy to convert their executives/credit officers and analysts into effective venture investment managers. David Silver suggests that this could also be due to the inability of corporates to provide for the managers to participate in the profitability of the investments within their corporate framework. This led to many of the successful investment managers setting up their independent fund management partnerships.

Among private venture capital firms several early venture capital firms started by wealthy families/individuals such as the Rockefellers (Venrock), the Phipps (Bessemer Securities) and the Whitneys (Whitney & Co.) who were the fore runners to modern venture funds continue to be active and possess considerable venture investment experience and savvy.

## SUMMARY

- Venture capital, is long-term equity/or equity featured investments in companies with new ideas and new products which offer the potential of high returns on investments. European venture capital association defines venture capital as risk finance for entrepreneurial growth oriented companies.
- The Venture Capital Company (VCC) participates in the management of the Venture Capital Unit (VCU) by assisting in the management, strategic planning, financing, marketing, recruitment of key personnel, finding strategic partners, etc.
- As the Venture Capital Industry invests in Niche and Sunrise Industries, VC has a significant role in the development of economy. Growth of venture capital industry is dependent on various factors like enterprise culture, tax policy of government, vibrant and stable capital market.
- Though VC investors meet the initial requirement of VCU, the financial institutes have a complementary role in meeting the increasing needs of VCUs.
- The venture capital instruments have been broadly classified into three goups: (i) Equity (ii) Quasi-equity forms of hybridized debt (iii) Normal loan.
- VC companies prefer to take minority position in the venture capital unit. The timing of disinvestment will be at the VC investor's option. The investee has to get his company's shares listed on a stock exchange and the pricing at the time of sale-back to the promoter will be linked either to the market price of the share or to some formula.
- The quasi equity investment is of two types: In the first type the servicing of the loan is entirely dependent on the performance of the company and thus participates totally in the downside and significantly in the upside as agreed in the beginning. In the second type of loan there is a minimum obligation towards the lender irrespective of the performance plus an upside sharing component.
- Normal loan is an ordinary debt but it is the least preferred alternative from VCUs.
- A venture investment process has the following stages: (i) The generation of the dealflow (ii) Due diligence (iii) Investment valuation (iv) Pricing and structuring the deal (v) Value-addition and monitoring and (vi) Exit.
- The two types of VC investment agencies are: (i) Private venture capital firms (ii) The subsidiaries of financial and non-financial corporates.

## Chapter IV

# Syndication of Euroloans

**After reading this chapter, you will be conversant with:**

- Origin and Trends
- Main Players in the Market
- The Basic Loan Structure
- Terms and Conditions
- Mechanics of Syndication
- Loan Syndication Strategies
- Future of Syndicated Loans

Loan syndication involves numerous lenders to provide various portions of a loan. It is mainly used in extremely large loan situations. A traditional Euro syndicated loan is usually a floating rate loan with fixed maturity, a fixed drawdown, a given period and a specified repayment schedule. A maximum of three banks can act as lead managers and distribute the loan among themselves and other participating banks. Over the years this practice became more customized. Of late, large groups of banks have been forming syndicates to arrange huge amount of loans for corporate borrowers. The amount of these loans is so huge that one bank alone cannot bear the whole amount. Hence, loan syndication enables the banks to diversify and reduce the risks.

A typical eurocredit would have maturity between 5 to 10 years, amortization in semi-annual installments, and interest rate reset every three or six months with reference to LIBOR.

## ORIGIN AND TRENDS

A syndicated Eurocurrency loan on a variable interest rate basis is being recognized as one of the most notable and popular financing instruments in the international financial markets. It is also one of the easiest means of raising forex finances for all kinds of borrowers.

Even though the idea of borrowing and lending in eurocurrencies evolved during the late 1950s, the concept of syndicated euroloan took its birth only a decade ago. Since its inception, there has been a rapid progress. As the funds were made increasingly available, especially from the Middle-Eastern countries, the commercial banks faced the problem of deploying them profitably. Eurobanks offered short-term inflow of funds while the banks needed medium- and long-term funds. Therefore the Euro-banks evolved the concept of lending funds for medium- and long-term periods on a variable interest rate basis, in order to insulate themselves against the phenomenon of constantly changing interest rates. This concept was accepted by, both the depositors and the borrowers. The eurobanks earned income through the margins charged.

The growth of syndicated credit business was marked by alternate boom and bust phases since its inception. The formative years of the Syndicated credits saw a steady rise in Eurolending mainly due to the steady borrower profile. During the 1970s, Euromarkets saw an increase in the demand for Eurocredits from non-traditional and uninterested borrowers. Owing to this the Euromarkets saw a substantial rise in high volume – low margin business, which resulted in a decline in the syndicated loan spreads. The period following the first oil crisis (1973) was marked by a boom phase to cope with the increasing demand for funding by borrowers, which was affected by the multifold rise in oil prices. Due to this unprecedented demand, Eurobanks expanded their lending business without undertaking credit appraisal of their clients or countries financed. Apart from the OECD group borrowers, who raised finance by way of syndicated loans in the normal course of business, a number of Latin American countries also entered the markets with large-sized Euroloans. This period was also marked by the emergence of the re-financing concept, which allowed re-negotiating of credits from fresh sources on better terms. A significant increase in the demand for finance coupled with re-financing and non-adoption of prudent banking practices led to the banking crisis of the 1980s. As a result, many banks had to reschedule their lending terms to remain in the business.

The mid-1990s saw a boom phase in the global credit markets, after a brief spell of quiet activity. The period saw restructuring in Europe, which meant a rise in demand for finance from high quality borrowers. The OECD's share of the total Eurocredits alone was 85%. Markets like Asia experienced a huge growth of their economies and financial sectors. This was one of the reasons for the large increase in volume of loans. Before declaring a moratorium, Russia was very active in accessing the credit markets to raise the forex finances. The period from 1997 to 1999 was marked by domestic and regional concerns, the Asian crisis, the Russian moratorium, the collapse of LTCM and continuous problems in the Japanese

economy and withdrawal by the Japanese financial institutions and banks. All these resulted in a tightening of credit terms and a cut back in lending volumes. International credit markets selectively extended loans to US, UK and Latin American countries.

In 2000, the activity in the syndicated credit markets reached record levels: $1.5 trillion worth of facilities were announced, up by 42% from 1999. Even though the pace of Mergers and Acquisitions (M&As) in developed countries, especially the United States, appeared to have subsided, substantial amounts of syndicated credits were being arranged to support such activities. The poor performance of equities during 2000 may have prompted firms to turn from stock markets to the syndicated loan market to finance M&As. The developing countries' access to the international syndicated loan market continuously improved especially for those countries, which were considered as better credit risk centres.

In 2001 the activity in the international syndicated loan market surged by more than 40 percent over 2000, boosted by strong M&A activity and heavy loan demand by telecom firms. Announced M&A-related transactions rose by 22 percent to $214 billion and syndicated credits to telecom tripled to $256 billion. The surge in borrowings by European telecom during the second half of the year mainly took the form of bridge loans as firms delayed tapping the securities markets. Syndicated lending slowed sharply in the first quarter of 2001, as borrowing by telecom fell and banks tightened conditions to supply backup and standby facilities. In recent years, deals have become larger and have increasingly taken the form of bridge loans and standby facilities; average maturities fell from six years in 1992 to about three years in 2000.

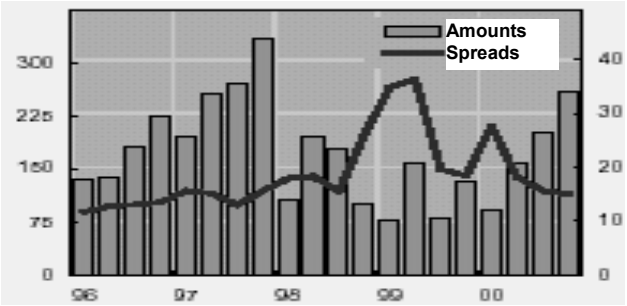
**Table 1: International Syndicated Credit Facilities by Nationality of Borrowers**

(in billions of US dollars)

| | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 ($Q_1$) |
|---|---|---|---|---|---|---|---|---|---|
| All Countries | 292.7 | 501.9 | 703.0 | 839.2 | 1080.6 | 905.3 | 1025.9 | 1465.7 | 253.3 |
| Industrial Countries of which | 252.7 | 442.5 | 609.3 | 729.5 | 907.6 | 821.1 | 960.0 | 1332.1 | 227.1 |
| United States | 203.3 | 327.6 | 399.8 | 495.9 | 623.1 | 585.1 | 625.4 | 804.8 | 159.4 |
| Japan | 0.7 | 2.6 | 3.5 | 6.8 | 6.0 | 11.4 | 15.3 | 17.3 | 7.9 |
| Germany | 1.0 | 1.3 | 13.0 | 7.7 | 10.9 | 13.1 | 49.3 | 43.7 | 4.1 |
| France | 5.9 | 6.2 | 19.2 | 22.6 | 40.6 | 16.9 | 32.9 | 72.1 | 12.8 |
| Italy | 2.1 | 5.4 | 16.4 | 4.7 | 9.3 | 6.3 | 15.5 | 36.3 | 5.0 |
| United Kingdom | 13.5 | 26.8 | 54.2 | 64.3 | 101.3 | 75.9 | 90.5 | 135.4 | 11.7 |
| Canada | 7.5 | 16.0 | 24.2 | 27.0 | 41.2 | 41.4 | 25.9 | 39.8 | 3.6 |

*Source: BIS: International Banking & Financial Market Developments.*

**Figure 1: Syndicated Lending to Developing Countries**




**Note:** Spreads over LIBOR on newly signed US dollar facilities priced over LIBOR. Spreads are weighted by the face value of the facility.

*Source: www.bis.org/publ/r_qt0103b.pdf*

## MAIN PLAYERS IN THE MARKET

Borrowers from many countries avail loan facilities from Euromarkets. Borrowers from the developing countries form the major beneficiary group in the syndicated loans market.

Banks operating in Euromarkets, especially the Banks of America, Britain, Japan, and certain European banks are referred to as Eurobanks. In order to arrange for syndicated Eurocredits, Eurobanks form themselves into well-defined syndicate groups. A leader of the syndicate group performs all the relevant functions such as negotiations, documentation and execution of the mandates under reference. The mandated bank is called a lead manager. Depending on the size of the loan, the lead manager invites participation from other banks in the capacity of co-lead manager, co-manager and participant. The lead manager is responsible to distribute front-end fees and the 'praecipuum' (the fees paid to a mandated bank for employing skills and committing manpower resources to arrange a loan).

Sometimes the lead manager assumes the role of the agent bank to administer the loan, i.e., arrange disbursements, receive and distribute payments and correspond with the concerned borrower.

## THE BASIC LOAN STRUCTURE

Syndicated loans are created when lenders and borrowers come together and execute an agreement, defining the terms and conditions under which a loan can be advanced. The procedures and practices have been developed over the years and a standard package has now evolved. Two distinct practices of arranging syndicated credits have emerged in the Euromarkets: (i) Club Loans, and (ii) Syndicated Loans.

A club loan is a private arrangement between lending banks and a borrower. The entry of any party into Euromarkets for affecting a funding deal is well publicized usually. But under this arrangement, the parties can dispense with the standard practice and arrange the deal on a private basis. When the loan amounts are small and the parties are familiar with each other, lending banks form a club and advance a loan. Under this arrangement, no information is compiled, nor is the deal publicized in the financial press. Often, all the participating banks agree to an equal status, without any distinctions between lead manager, agent bank, co-managers and participants. Barring these differences, a club loan is like any syndicated credit and has to conform to the legal standard formalities.

Syndicated Eurocredit implies a full-fledged public arrangement to organize a loan transaction, and is treated as an integral part of the financial market mechanism. It is well publicized and all the banks and borrowers from all over the world participate in the process.

## TERMS AND CONDITIONS

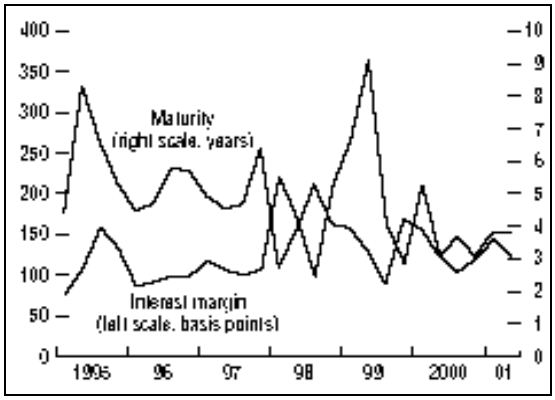
Syndicated loans are available for a maturity of seven years. Sometimes transactions can be made for shorter periods of three to five years or longer periods of ten years or more.

A Syndicated Euroloan permits drawdown of the loan over a period of time.

### Drawdown Facility

The drawdown facility allows the borrowers to drawdown the loan amount sanctioned to them over a period of time instead of withdrawing the entire amount at a time. The drawdown facility implies a commitment on the part of the lending banks for which a commitment fee (usually 1/4 percent to 1/2 percent on undrawn balances) is charged. This commitment fee is charged at periodic intervals. The commitment of the lenders is terminated at the end of the drawdown period and the amounts undrawn are canceled. In such a case there would be no obligation on the part of the lender to pay up the remaining undrawn amount by the borrowers. Therefore, the borrowers must arrange for a complete drawdown before the termination period expires. Thus, the syndicated loans provide finance in a phased manner.

**Figure 2: Emerging Markets: Syndicated Loans Weighted Interest Margins and Maturities**




*Sources: Capital Data, and IMF Staff Calculations.*

Syndicated loans are operated in an interbank market. The interest on the Syndicated loans is expressed as a margin over the interbank rate and the margin is expressed as basis points. The bid rate (the rate at which the loan is accepted) indicates the deposit rate and the offered rate denotes the lending rate. As the concept of Euroloans originally evolved in London, the LIBOR (London Interbank Offer Rate) is more relevant to the pricing of Syndicated loans. Some borrowers also negotiate their loans in LIBID (London Interbank Bid Rate) or LIMEAN (the mean of LIBOR and LIBID). The difference between the bid rate and the offered rate is the margin of lending banks. A profile of the weighted average margins and maturities in the Syndicated loans market from 1995 to April 2002 is shown in the graph. It can be seen that the margins were relatively stable during 1996 and 1998. There was a wide fluctuation in the margins from mid 1998 to end of 1999.

The credibility of the borrower is most important in deciding whether to grant loan on the basis of LIBOR or not. The more creditworthy the party is, the less is the spread over Libor. If the credentials of the borrowers are not so strong, they may have to pay a higher margin over the Libor. Centers other than London have come up to arrange for the syndicated loans. Apart from LIBOR, SIBOR (Singapore), PIBOR (Paris), NIBOR (New York) are also used to compute the actual interest rates.

The interest rates are calculated by fixing interest roll over dates at three or six-monthly intervals, and the actual LIBOR prevailing on such date. LIBOR is determined from the quotes of reference banks or quotes from the financial dailies or from the Reuters screen.

i. *Reference bank quotes:* A clause is provided in the agreement wherein the names of three banks are specified and they are required to offer their quotes for loans of similar maturities and amounts. The quotes given by these banks are averaged and rounded-off for loan administration.

ii. *Reuter's screen at 11.00 A.M:* The quotes usually available on Reuter's screen at 11.00 A.M are adopted for interest rate calculations. Since the Euro deposits market is supposed to be very active at 11.00 A.M, the quotes are considered at that time.

A cost plus formula is used to determine interest rates in case of certain contingencies. If this is not acceptable to the borrowers, an escape route is offered by way of pre-payment of loans. Certain terms and conditions pertain to the pre-payment of loans, taxes and other deductions, and the governing law and jurisdiction. The borrowers are required to make all payments without any deduction of local taxes.

## MECHANICS OF SYNDICATION

The process of syndication starts with the borrowers placing an invitation for bids. A borrower has to mention the amount of funds required, maturity period, preferred currency, amortization period etc. After receiving the bids from different bidders, these bids are analyzed in terms of financial aspects generally based on the effective cost and other aspects like guarantee, maturity, installment amount etc. Based on this analysis a bidder will be selected and awarded the mandate. The selected bidder has to form the syndicate and fulfill the documentation formalities. The process of syndication is of two types – direct loan syndication and participation syndicate. In case of direct loan syndication, participant banks advance loans based on a common loan agreement and the obligation of the participant banks are several. On the other hand, a participation loan syndicate establishes a principal-agent kind of relationship among the participant banks. In this syndication process a lead bank will be appointed. A merchant banker may himself act as a lead manager.

The lead manager lends maximum portion of the total loan amount. There may be more than one lead manager. Lead manager takes the initiative to arrange the loan amount and on the basis of the terms and conditions provided by the borrower, insists upon other banks to lend a share in the loan amount. These subsequent lenders are known as the participating banks. Some participating banks often are termed as managing banks. They provide assistance and suggestions to the lead manager in managing this loan because they provide larger share than the other participating banks. Another major party in the syndication process is the agent bank. Agent bank generally refers to such bank, which maintains links between the borrower and the lending banks. It is the duty of the agent bank to collect and disburse payments, maintain communication between all participants etc.

The lead manager generally plays the role of an agent bank in the syndicate. Syndication can be done on a *best effort basis* or on *underwriting basis*. In case of best effort basis the lead manager is not confident about the sell-down in the market but tries its best to get the adequate amount from the market without any underwritten commitment. On underwriting basis the lead manager gets the fund irrespective of the market response towards the loan requirement. A mandate is fixed generally to procure the loan amount. After a reasonable time (say two to three weeks) the borrower withdraws himself from the market.

The bids received on the two bases are compared and the financial and other aspects are noted down to award the mandate.

**Financial Aspects:** The borrower has to consider the financial aspects like (i) interest rate basis and spread rate, (ii) the front-end fees collected by the lenders, (iii) the agency fees collected by the agency bank, (iv) the commitment fees levied by the lending banks, and (v) the out-of-pocket expenses to be borne by the borrowers.

**Other Aspects:** The borrowers should also consider other aspects like guarantee/security, maturity and grace period provided by the bidders, pattern allowed by the banks, drawdown facility, documentation procedures, law and jurisdiction.

The analysis of the above aspects indicates how and with which bidder the borrower could proceed. The other aspects are important from an administrative point of view and cannot be overlooked. The financial aspects and costs payable on a deal decide the issue of awarding a mandate. The borrowers hold prior consultations with short-listed bidders in order to understand each other's needs and preferences, and to come to a mutually acceptable understanding. Before the mandate is awarded, the borrowers should complete various domestic, legal and administrative formalities. The effective costs play an important role in the syndicated loans market. Effective costs are the nominal financial costs adjusted for exchange rate changes and their impact.

## Awarding of the Mandate

The awarding of the mandate to the best bidder empowers the lead manager to go ahead with the transaction under the terms and conditions that are defined.

The lead manager has to perform two tasks at this stage (i) Syndication and (ii) Documentation or loan agreement. Syndication involves the circulation of an information memorandum and the negotiations concerning sharing of fees and the level of participation. This process should be completed within a reasonable time (i.e., two or three weeks) and, if it exceeds the stipulated time period, it is treated as a failure of the transaction. In the documentation process the lead manager drafts a "loan agreement" and an "information memorandum".

The information memorandum contains the details of the company, its past borrowings, operations and cash flows, details about the guarantor, etc. It is circulated among all the participant banks. It broadly covers the following aspects:

i. Guarantee to the loans when the loans carry a guarantee and the details about the guarantor. If the syndicated loans are undertaken by, the developing countries, their respective governments stand as guarantors.

ii. The description about geography, political system of the country and also information about its financial and economical aspects like BoP, financial strength etc.

iii. The description about the entity that is raising the loan, detailed analysis of the financial performance of the concern, the various cash flows expected by the company etc.

Since the information memorandum is not registered with any stock exchange, it does not have the same status and recognition, as a 'prospectus' and the lead manager need not take any responsibility for its accuracy. But it is an important document from the commercial point of view. Prospective lenders rely upon the statement it carries and hence due diligence must be observed while drafting it.

The loan agreement is the principal loan document. It is the responsibility of the lead manager to draft and conclude it satisfactorily. It has to be signed by all the loan participants and borrowers. This agreement clearly mentions the amortization period, amount of fund raised, purpose for which the loan has been raised, guarantee details, interest rate, drawdown facility, commitment fees, default situations and the relationship with the participant and the agent bank. The parties insert a 'tombstone advertisement' in the finance press to document the Eurodeals. Various international bodies and banks compile data and league tables on this basis.

The signing of the loan document is an important event and is announced formally. The signing of the loan document does not entitle the borrowers to drawdown funds. A series of conditions, which establish the authenticity of the loan transaction have to be fulfilled first. Then the legal advisors of the borrower and the lenders examine the documentation and express an opinion to the effect the agreement is legal, valid and binding on the concerned parties. The lead manager, relying upon such legal opinions, declares the loan 'effective', and the syndication process formally ends.

## LOAN SYNDICATION STRATEGIES

Any funding activity should be able to meet the funding requirements of the borrowers at a reasonable cost and also should earn a reasonable rate of return on the acquired assets. This does not mean that the cheapest deal is the best one for the borrower nor is the deal, affording maximum returns to the lenders the best one for the lender. Therefore as a matter of prudent financial practice, a deal that satisfies both the parties should be implemented. In order to achieve this, both the borrowers and the lenders should device their own strategies to stand in a profitable position.

## Strategies for Lenders

The lenders should remember that they have to conduct a credit appraisal of the borrower and come to a conclusion regarding his creditworthiness before extending loan facilities. This would help the lenders to quote an appropriate price, which also satisfies the lender's criteria of a required rate of return and would compensate them for their assumed risks. To achieve this, the banks (lenders) should have a well-structured internal rating system. A carefully devised syndication strategy, backed by internal reviews and ratings, would shelter banks from undue exposure to certain problem-prone borrowers and countries.

## Strategies for Borrowers

The borrowers should device a strategy to cultivate relationships with Euromarkets and to understand their nuances. A close rapport with lenders would help borrowers secure a better response to their invitation for bids. Familiarity with major market players also helps in comprehending the specifics of contemplated borrowings. They should strive to arrange euroloans through a well-represented syndicate group. The settlement of financial and other terms and conditions demands certain skills on the part of the borrowers. Seasoned borrowers know how to pitch and at what stage to settle terms and conditions. Making demands without understanding the market procedures indicates an unprofessional character of the borrowers. Therefore, it is important for the borrowers to understand the market procedures and conventions before entering the markets to raise finance.

The borrowers should also be ready to seize the opportunities as and when they come. As the interest rates follow a cyclical pattern and the spreads charged by the Eurobanks fluctuate in response to market situations and sentiments, the original lenders are first approached to re-negotiate the terms. In the case of a negative response, borrowers can open negotiations with other banks to raise a fresh loan with the intention of pre-paying the old loan. This is known as "refinancing". The refinancing technique and consequent cost savings have to be assessed. The effect of sunk costs should be considered while computing the costs of raising fresh loans. Here the fees and expenses incurred on the original loans assume the character of sunk costs and therefore have to be added to the effective costs of re-negotiated loans in order to assess the refinancing opportunities.

# FUTURE OF SYNDICATED LOANS

As mentioned earlier in the chapter, the syndicated loan markets have witnessed both boom and bust phases because of various reasons. Though the initial years of their inception saw a high demand, the early 1990s witnessed a depressed scenario due to the low receptivity of lenders to loan proposals, on account of exposure considerations and the paucity of a creditworthy demand for loans. Despite the prevalence of such fluctuating conditions, the future of the syndicated Eurocredits looked bright. Euromarkets made a considerable progress by introducing innovations during the 1990s. Some of the innovations are:

- **Option-linked Loans:** Under this, lenders buy options from borrowers to switch from the borrowing currency into a currency that is expected to appreciate during the life of the loan. The lenders benefit from the appreciation of the currency and the borrowers receive a premium to sell the options and seek a trade-off against possible losses.
- **Dual Currency Loans:** These are based on interest rate differentials between the currencies involved. A number of transactions can be arranged such that even though the loans are designated in hard currencies, interest payments can be swapped into soft currencies during the life of the loan.

- Secondary market mechanism also emerged in the Euromarkets for securities, bonds or equity issues and Euroloans. This helps prevent the banks from getting stuck with certain positions and affords them an opportunity to trade in their positions.

## SUMMARY

- By capitalizing on the experiences of the players past two decades or so, Eurobanks are expected to sharpen their understanding of the risks and vulnerabilities imminent in the assets they acquire while extending financing to industrial clients. It is imperative for them to understand the exact magnitude of such risks and, what is more, develop a cohesive approach for the pricing of underlying assets. Furthermore, risk management is also necessary for tackling anticipated bad loans or non-performing assets. There is evidence to suggest that the Eurobanks and Euromarkets are now addressing the finer aspects of international financial management.
- Data available from various sources like BIS (Bank of International Settlements or IMF), indicates a further rise in syndicated loan volumes for different countries or groups of countries. Given the importance of a very basic funding technique (like syndicated loan on a variable interest basis), and given the concurrent innovations, Euromarkets are expected to continually explore this avenue meaningfully in the foreseeable future.

## Chapter V

# Issuance of Equities

**After reading this chapter, you will be conversant with:**

- Evolution of the Equity Markets
- Introduction to Important Equity Markets
- Instruments used in Euro-Equities Market
- Parties in the Euro-Equities Market
- Mechanics of Issuance
- Financial and Other Implications

## EVOLUTION OF THE EQUITY MARKETS

Till the end of the 1970s, international financial markets focused on debt financing and equity finances were raised primarily by the corporate entities in the domestic markets. Cross-border equity investments faced tremendous restrictions in many countries. The investors also preferred domestic equity issues because of the perceived risks in the foreign equity issues owing to either the foreign exchange exposures or apprehensions on the part of the national authorities regarding the restrictions on such investments. There was a change in the attitude of the investors as the restrictions on cross-border equity investments were lifted in many countries. The financial markets and systems were opened to overseas investors and the domestic investors were permitted to invest in equity issues abroad. This gave impetus to the cross-border equities. The concept of the emerging markets also boosted the momentum of cross-border investments. Various countries in Asia, Eastern Europe, and Latin America came to be known as emerging markets as they were attracting investors who wanted to achieve portfolio diversification.

The process of cross-border equity investments gathered momentum in the late 1970s. Equity instruments across the borders have been always attractive as they stimulate a favorable corporate performance in different countries. The demand for Euro-equities was sustained by several factors operating in the global equity markets. Corporate restructuring, mergers and acquisitions, spin-offs and divestments in US and Europe gave a boost to the fresh equity issues. The privatization had provided a great impetus to equity markets by ensuring a high degree of liquidity in the markets. It had also acted like a catalyst for the issuance of equities, apart from facilitating the development of equity awareness among the investors.

Even the low level of long-term interest rates had facilitated the growth of equity markets. The global equity markets also benefited from technological changes and computer applications across the world. The automated systems and procedures had simplified the tasks of the investors, issuers and the market intermediaries by transforming the market mechanisms.

The advent of the inter-connected stock exchanges across the globe had prompted the small and medium sized companies to operate in the equity markets freely and conveniently. For example, “Euro NM”, a new pan-European stock exchange for growth companies, was established. It is a unique stock exchange in that it is a network of national stock exchanges working together in order to create one common structure for market information and trade. At present it consists of the French Nouveau Marche, the German Neuer Markt, the Dutch NMAX, the Belgian Euro NM, and, more recently, the Italian New Market. The involvement of many sophisticated industrial sectors across the world had facilitated the immense growth of the equity markets. Thus by the late 80s, the stage for the issuance of cross-border equities was set on a large scale.

Safe and reliable mechanisms for the settlement of cross-border payments also stimulated the growth of the cross-border equity markets. For instance, the introduction of TARGET, the newly-established payments system, was designed to address such needs by linking nation based, real-time gross settlements systems and ensuring that monetary and supervisory functions are effectively implemented in the Euro region.

With this background, Euro-Equities are defined as “the equities that are issued for sale outside the issuer’s home country”. The instrument is the same as that issued in domestic markets but the difference is in the distribution. We can also deduce that, if capital markets are segmented then a listing on an overseas market can reduce the cost of equity. A segmented capital market is where the rate of return on securities in one market differs from that on comparable securities traded in

other markets. Thus, the existence of a congenial market for Euro-Equities gave rise to perfect tools and techniques needed for transacting business. With the help of these perfected techniques, various agencies could enter the Euro-Equities markets and play specialized roles as custodians or depositories. Let us see some of the markets where the Euro-Equities are traded.

## INTRODUCTION TO IMPORTANT EQUITY MARKETS

The financial markets across the globe were created and nourished over a period of time and it had taken many long years for the markets in developed countries to achieve the matured look that they now have. The level of sophistication which a country's financial markets reach depend upon several factors like the size of the domestic economy, its international exposure, depth of corporate financial activities, regulatory set-up in the country, etc., and all these factors play a crucial role in determining the growth of the market. Similarly, markets for Euro-Equities issues are in a developing stage in some countries while others have perfected the mechanism of issuing Euro-Equities. Markets, in general, are still racing to achieve perfection across the world. Let us now study some of the important Euro-Equities markets around the world.

### US Markets

US markets are the most sophisticated markets in the world on many standards and they play a very important role in the global equity issues market. The US accounts for a significant chunk of deals floated in this market. These markets have the advantage of the most comprehensive legislations framed for the growth of the markets. Two such important legislations are (a) Securities Act (1933) and (b) Securities and Exchange Act (1934). Added to these legislations, the federal states have legislations for handling Equity business related matters, called *blue-sky laws*.

The dominance of US markets continues with more proactive legislations and a regulatory watchdog like SEC. They have shown the way to develop markets to a whole gamut of countries in the world. Its periodic revision of laws like adoption of integrated disclosure statements in 1982, simplification of private placement procedures under rule 144A and allowing ADR issues and establishment of clearing houses in the form of Depository Trust Company (DTC), etc., have given a fillip to the development of the Euro-Equities markets. Introduction of innovative instruments and US markets' spirit of experimenting with new instruments have played an important role in the development of equities markets around the world.

### Japanese Markets

Japan has an illustrious history of Equity markets, with the first exchange called Tokyo Stock Exchange established way back in 1878. The subsequent years saw proliferation of many stock exchanges in the country. But the Second World War did a major damage and thereafter, the market initiated a clean up act. Many exchanges were closed under a new legislation and in the year 1948 securities markets were recognized with the passing of new securities and exchange law, paving the way for a new beginning in the market. The Japanese attitude towards securities business gradually changed and with market regulators taking a cue from developments in the US markets, Japanese authorities started devising legislations, which boosted the Euro-Equities issues market. During the eighties, Japanese capital markets developed into a truly international market with many foreign players playing a key role in them. Over a period of time clearly laid regulations like system of registration, listing guidelines, disclosures, etc., were developed as regards to Euro-Equities market and thus the markets began to flourish.

## English Markets

The UK market has been another major global player from the early stages of development of Euro-Equities market. These markets were the least regulated markets in the world and had a self regulatory mechanism in the form of two departments: (1) Department of Trade and (2) Council of Stock Exchanges. These two statutory bodies used to draft legislations for stock market regulation and set-up high ethical standards. With the emergence of GDRs, the London Stock Exchange (LSE) started playing an important role.

Over a period of time, the systems and procedures of the English markets slowly metamorphosed from being traditional and conservative and underwent major reforms. A new set of guidelines and regulations emerged to enable more players to access the English markets and raise Euro-Equities issues. The subsequent years i.e., the eighties witnessed the setting up of the Securities and Investment Board (SIB) in the year 1985 that started monitoring equity markets in the UK. Under this regulatory system aspects like legislation, and infrastructure underwent a whole lot of changes. New rules were framed for brokers and thus a smooth-change over was made possible to reflect the new market conditions that made LSE a truly international stock market.

## European Markets

The European Economic Community (EEC) also played a crucial role in the development of Euro-Equities market. It attempted to minimize various statutory regulations and standards and ensured that equal treatment was practiced in all member states. These attempts provided an advantage to the issuers, who otherwise had to undergo a whole labyrinth of rules and regulations to issue Euro Equity instruments.

EEC tried to standardize disclosure requirements and framed rules of conduct for brokers, dealers, co-directors, insiders and it laid down an approach of equal treatment to statutory regulatory bodies of various countries and hence helped in the development of Euro-Equities markets.

In Europe, Germany, Swiss and French markets also played a vital role in development of Euro-Equities market. In Germany commercial banks play a major role in overseeing all the formalities required for a public issue and brokers play a minor role. Swiss markets have a well-established and efficient banking system. The banking system acts as an intermediary in the issuance of primary markets. These markets witnessed substantial changes during the eighties and gave a fillip to the development of the Euro-Equities market.

# INSTRUMENTS USED IN EURO-EQUITIES MARKET

The issuance of equities is a distinct source of raising finance in the international financial markets. Through the issuance of equities, the companies offer ownership rights, as distinct from creditorship rights conferred by the debt financing instruments. Euro-Equities are floated indirectly in the form of Euroconvertible bonds or bonds with attached warrants. Euro-equities are generally planned in the form of depository receipts, and according to their placements, are referred to as Global Depository Receipts (GDRs) or American Depository Receipts (ADRs).

## Global Depository Receipt (GDR)

A global depository receipt is a negotiable instrument usually denominated in the US dollars (or a currency other than the domestic currency of the issuer) that represents publicly traded local currency equity shares. GDR means any instrument in the form of a depository receipt or certificate created by an Overseas Depository Bank outside the country and issued to non-resident investors against the issue of ordinary shares or foreign currency convertible bonds of the issuing company.

The GDRs can be traded or dealt without any restrictions across national boundaries. Even though the GDRs are designated in US dollars, the underlying shares are denominated in the local currency of the issuer. Depository in the case of a GDR is located in a foreign country, whereas the custodian is located in the home country of the issuer. GDRs are freely traded in the international markets like any other dollar-denominated paper, either through the stock exchange or on the OTC basis. The settlement is linked to the international clearing systems. The issuing company deals with the depository in the foreign country regarding the payments, notices or rights/bonus issues. The depository exercises his voting rights in accordance with an understanding reached between the issuing company and the depository concerned. GDRs can be converted into equity shares by the cancelation of GDRs through the intermediation of the depository and the sale of underlying shares in the domestic market through the local custodian.

## FEATURES OF GDRS

- The holder of a GDR does not have voting rights.
- The proceeds are collected in foreign currency thus enabling the issuer to utilize the same for meeting the foreign exchange component of project cost, repayment of foreign currency loans, meeting overseas commitments and for similar other purposes.
- It has less exchange risk as compared to foreign currency borrowings or foreign currency bonds.
- The GDRs are usually listed at the Luxembourg Stock Exchange and also traded at two other places besides the place of listing example, on the OTC market in London and on the private placement market in USA.
- The GDR issue is marketed by the underwriters by organizing road shows, which are presentations, made to potential investors. During the road shows an indication of the investor response is obtained by an equity called the "Book Runner". The issuer fixes the range of the issue price and finally settles for a certain issue price after assessing the investor response at the road shows.

## ADVANTAGES OF ISSUING GDRS

Some of the advantages are of issuing the GDRs are as follows:

i. Less cumbersome procedures with regard to dividends payments, notices, informing the investors of the major policy decisions like rights issue, etc.

ii. Indicates the financial strength of the company.

iii. The issuing company deals with the Overseas Depository Body (ODB) regarding the voting rights of the investors. The ODB exercises the voting rights on behalf of the investors and usually voting is done in consultation with the issuer. Hence, the issuer may not have any anxiety with regard to the usage of voting rights by the investor.

iv. Payment of dividends to investors in local currency.

## EURO-CONVERTIBLE BOND

A Euro-convertible bond can be defined as an equity-linked bond or debt-security that can be concerted into shares or GDRs at the option of the investor. It represents a fixed coupon rate and fixed maturity foreign currency bond, representing debt financing until conversion. On conversion, the bond acquires the status of a share with the same characteristics as those of the other shares of an issuing company. The bonds are converted according to a predetermined formula based on a predetermined exchange rate. Usually options are used for the conversion. A call option is inducted by the issuing company and a put option is inducted by the investors.

Through the issue of GDRs or Euro-convertible bonds, the issuing company can enhance its share capital. In the case of Euro-convertible issue, and the dilution of capital is deferred until conversion. Even though they initially represent an element of debt financing, they are treated more as equity issues than bond issues in the international markets. The GDRs are ranked on par with the existing shares, and are entitled to dividends and voting rights from the date of issuance.

## American Depository Receipts (ADRs)

This record growth of opportunities in the US equity markets had encouraged both private and industrial investors to place more of their assets into equity markets, in an effort to maximize their growth potential. While increasing their equity holdings, many investors desire to diversify their portfolio with international equities. This demand for a medium for international investment, as well as the attractiveness of the United States equity market to foreign private companies was the impetus for the development of the American Depository Receipt (ADR). Foreign private companies can issue shares of stock on the US equity markets using ADRs. This allows US investors to purchase stock of foreign companies, while allowing foreign companies to benefit from the vast shareholder base and liquidity of US markets.

An ADR is a negotiable security, quoted in the US dollars and traded freely on domestic exchanges. To the investor, there is no difference between purchasing an ADR and shares of a domestic corporation's stock, except for the country of origin of the shares underlying an ADR. An ADR is issued by a US depository bank and it represents a specified number of underlying shares of a foreign corporation's equity, which is in the bank's possession.

Foreign companies use ADRs to sell shares of equity in the US market, thereby leveraging access to US investors with the liquidity and marketability of the domestic equity markets. Foreign private issuers are able to broaden their shareholder base, and tap the US markets.

### ADVANTAGES OF ISSUING ADRS

- Improved efficiency;
- Reduced transaction costs;
- Reduced disclosure requirements;
- Standardized reporting and pricing;
- Public trading without SEC registration; and
- Protection and services of a depository bank.

Simultaneously, domestic investors are able to benefit from ADRs as a tool for diversification. Investors are able to purchase international securities at a low transaction cost, with the protection and standardization of the regulations imposed on the issuance of the shares by the SEC and the individual exchanges. Institutional investors who may otherwise not be permitted to invest in foreign securities can diversify their holdings using ADRs, without unnecessarily risking clients' money with unregulated securities.

### CHARACTERISTICS OF ADRS

While ADRs operate and trade in the same manner as any other security on domestic equity markets, there are important differences. The value of an ADR fluctuates based on the value of the underlying shares, as listed on the foreign market, as well as the exchange rate between the US dollar and the currency of the issuing country. ADRs are listed and pay dividends in US dollars, and benefit from a competitive currency exchange rate for the US investor. These characteristics make ADRs more attractive than purchasing foreign shares of the same company directly from the company's home equity market. Finally, since trades are settled domestically, there is a high rate of successful settlements. ADR purchasers benefit from low or no custody fees.

It is the depository bank that provides these benefits. The depository bank, which is located in the US acts as the custodian and issuer of the ADRs, as well as administrator of the currency exchange and dividend distribution. The bank also handles the proxies, tax reporting and regulatory filings for the issuance of the shares. It receives a management fee for these services, either from the shareholders or the issuing company. In addition to providing services to the investors, the depository bank also helps the issuing companies market their shares to the domestic investors, and provides the issuing company with feedback on the ADR program.

Investors wishing to purchase ADR shares will contact their broker and request a certain number of shares. The broker then may either purchase outstanding ADRs on the domestic markets, or on the foreign markets if no shares are available locally. The broker then deposits the foreign shares with a depository bank, which in turn issues the ADRs to the broker. ADRs can then be freely traded just like any other security. The sale of ADRs works in the reverse: The shares can be sold either on a domestic market, or if no buyer can be found, the broker will cancel the ADRs. Cancelation causes the depository bank to release the shares back into the foreign market, where a foreign broker can purchase them.

## ADR PROGRAM STRUCTURE

The issue of ADRs is regulated by the Securities and Exchange Commission (SEC). In order to accommodate and regulate the increase in demand for ADRs, the SEC established a tri-level structure. Most foreign company issuers begin with a Level I program, and after establishing recognition and marketability, convert their programs to Level II or Level III. This conversion allows companies to further enlarge their shareholder base and raise capital through an Initial Public Offering, or IPO, and increases the visibility and growth of the program. More recently, companies have begun to bypass the first two levels and directly implement a Level III program, which permits the raising of capital, to rapidly benefit from the favorable market conditions of the 1990s.

There are two main categories of ADR programs – Un-sponsored and sponsored. Both categories require the ADR program to be registered with the SEC.

### Un-sponsored

An un-sponsored ADR program is created by the depository bank in response to the demand by domestic investors. This is an inexpensive and uncomplicated way for a foreign company to issue shares in the US, with minimal SEC compliance and reporting. However, trading is limited to the OTC market. In order to create an un-sponsored ADR, the depository bank and the foreign company together have to apply to the SEC seeking an exemption from the reporting requirements of the Securities Exchange Act of 1934. When this exemption is granted, the depository bank files a report in accordance with the Securities Act of 1933. This report is a limited disclosure statement, which registers the depositary shares. Once this report is properly filed, the depository bank can place ADRs for sale to investors on the OTC market.

The registration of an un-sponsored ADR program places the burden of ongoing reporting and disclosure on the depository bank, not the issuing company. Holders of un-sponsored ADRs generally bear the costs of the depository bank's expenses, in the form of transaction fees, or as a deduction from dividend payments.

The un-sponsored ADR program has become unpopular and is now considered obsolete because it is subject entirely to decisions made by the depository bank with no control by the foreign company. Further, investors tend to disfavor un-sponsored ADR programs because the trading is limited to the OTC market, and not permitted on the more popular NYSE and NASDAQ markets.

## Sponsored

The sponsored ADR program is initiated by the foreign company, and then maintained and administered by a depository bank, according to a deposit agreement between the bank and the company. Foreign companies prefer sponsored programs because they retain a greater degree of control over the program, compared to an un-sponsored program. Investors prefer sponsored programs because of the enhanced reporting and disclosure requirements on the company, and opportunity for greater liquidity. Unlike an un-sponsored program, a sponsored program does not charge the end purchaser a fee for its services, which is normally paid for by the issuing company. Therefore, the end purchaser receives a higher return on his investment.

The sponsored ADR programs consist of three levels. The higher the level of the program, the more attractive and more visible the shares will be to domestic investors. Accordingly, the registration and disclosure requirements also increase with each level.

**Level I**

A foreign company wishing to establish an ADR program typically starts with a Level I program. A Level I program allows the issuer to establish a core group of domestic investors, without overly burdensome SEC regulatory and reporting requirements. This results in relatively low set-up costs. Because the foreign company initiates the ADR program, the company retains control over the issuance of shares through the depository bank. The depository bank, in turn, administers the program for the company.

Despite these advantages, there are two major disadvantages:

i. The shares can only be listed on the OTC market, as listings on the more popular NYSE and NASDAQ domestic markets are not permitted at this level.

ii. Companies are not permitted to raise capital through this program. But once the Level I program is established, the company can convert its program to a Level II or Level III program, which offers increased marketability and liquidity, as well as opportunities for raising capital.

To register a Level I program, the foreign private issuer must file a report to register the foreign shares held by the depository bank with SEC.

**Level II**

A Level II program provides foreign issuers with increased visibility and enhanced liquidity on the US markets, without the cost or burden of a public offering. Level II programs are more attractive to US investors than Level I because they are fully registered with the SEC, and therefore may be listed on one of the three major US exchanges: NYSE, AMEX, or NASDAQ.

The SEC requires that a Level II program comply with a greater degree of registration and reporting requirements. The issuer companies along with the registration form should submit the company's annual report, prepared in accordance with the United States. Generally, Accepted Accounting Principals (US GAAP). These additional reporting requirements make a Level II program more expensive for the company than a Level I program, but the value of the increased marketability, liquidity and respect of analysts and investors often outweigh the expenses. The added registration requirements benefit the domestic investors by allowing them to monitor the foreign company, its program and shares in the US.

**Level III**

Level III programs are similar to those at Level II, with the exception that a Level III program permits the issuing company to raise capital through a public offering of the shares on the US markets, either the NYSE, AMEX, NASDAQ, or the OTC exchanges. While there are substantial set-up costs and requirements, the

benefit of access to capital from a broad investor base on the most liquid US securities market will provide a foreign company with more capital than it could raise on its home equity market. Once the initial public offering has been completed, the program is maintained as a listed Level II program.

The listed shares must be registered under the 1933 Securities Act and the foreign company must comply with the reporting requirements under the 1934 Exchange Act. The reports must be in accordance with the US GAAP. Additionally, the company must maintain ongoing reporting and disclosure requirements by filing relevant documents.

**Offshore Country Funds**

Apart from the above-discussed tools certain mutual funds are floated overseas by the emerging markets, known as offshore country funds. These are denominated in a foreign currency and the funds thus raised are brought into the domestic country for investments. These funds participate in the equities market in an indirect fashion. Since the investments are spread over different scrips, investing in these funds would considerably minimize the risk. These funds are both open-ended and close-ended. They do not have any voting rights.

## PARTIES IN THE EURO-EQUITIES MARKET

A number of parties are involved in the international equities market. They include the issuer, the lead manager, the local custodian, the overseas depository body, syndicate members, the stock exchange, the listing agent as well as domestic and overseas lawyers. They play an important role in the issuance of Euro-equities.

The company, which issues the Euro-equities, is called an issuer. The issuer company should have strong financial performance history in order to sustain in the international equity markets. Based on the strength of the issuer company, it will be accepted or rejected in the market.

The chief merchant banker takes care of all the domestic and international formalities in the international markets. He sees whether all the rules and regulations are adhered to and accordingly assists upon the issuer to raise finances from the international markets.

The Overseas Depository Body (ODB) plays an important role between the issuing company and the investors in Euro-Equities. The London Stock Exchange (LSE) defines the duties and responsibilities of an ODB. The LSE states that the ODB should hold on trust all the rights pertaining to the shares and the money received by it in respect of the shares, for the benefit of the shareholders. The depository in order to hold trust on the shares must receive payment of the remuneration and his expenses. The shares or the rights, money or the benefits are treated as assets of the depository under the law of the place of its incorporation, or the place of the issue of depository receipts, or the place of administration of the trust.

The local custodian plays an important role in the Euro-Equity mechanism. The custodian holds the shares handed over to him on behalf of the depository concerned. He is a local link for GDR issues and looks after all the operational aspects in the home country.

The listing agent acts as a link between the issuer and the stock exchange. The listing agent files an application with the exchanges concerned and guides the issuer in ensuring that all documents are filed and fees are paid and rules and regulations are adhered to.

The legal counsels also play an important role in assisting the lead manager/issuer, both at the national and international levels. They advice the managers/issuers on various legal issues and counsel them periodically during the issue period.

## MECHANICS OF ISSUANCE

The overall procedure for Euro-Equity issues is complex and time-consuming, besides being very expensive. The Euro-Equities are not time-bound dated securities. The investors in Euro-Equities take positions in issuing companies. As the Euro-Equities imply domestic currency-denominated financing instruments, the investors assume exchange exposure in the final analysis. The issuance of Euro-Equities involves the following steps:

- Initial decisions/domestic formalities.
- Fixing terms and conditions.
- Documentation formalities.
- Payments and closure.
- Tombstone advertisement.

Let us discuss the above steps in detail.

### Initial Decisions/Domestic Formalities

The issuing company initially has to select a merchant banker through a process, which the industry calls *beauty parade* wherein the merchant bankers are called in for their presentations and the issuer picks-up one as the lead manager to carry forward the mandate. The more the merchant banker is well versed with rules and regulations of the issuance of Euro-Equities, the better it is for the issuing company.

There are no formally determined or stipulated criteria for the issuance of Euro-equities. In order to determine whether the issuer would be accepted in the highly sensitive international equity markets, factors like the size of the enterprise, turnover, market capitalization, fundamental strengths, operational track record, international competitiveness and price earnings ratios (P/E ratios) are considered. The companies possessing a high credit standing qualify for entry into the international markets. Usually, companies with a P/E ratio of around 20 percent can attract the international investors.

The eligible company should decide the issue amount and the structure of its equity offering keeping in mind that the issuing company's equity would reduce as a result of foreign ownership due to various reasons. The following factors are considered in arriving at the issue size:

- How the issuing company's capital structure gets affected with additional equity offering?
- How the voting patterns are going to impact the decision-making process of the issuer?
- Whether local and government regulations are adhered to or not?
- How its earning per share is going to affect the issue of extra equity?

After the issue size has been fixed, the company has to select the market it wishes to tap. The company can address the issue to specific markets (the Swiss market with SFr convertible issue or US market with ADRs) or the international markets with a GDR issue. Depending on the market selected, relevant documentation, listing and other administrative formalities should be completed. In the case of dilution of equity, the matter has to be placed before the shareholders of the company by convening a meeting of the general body.

The issuing companies call their treasury department to decide upon the staff orientation and preparation. Since the documentation is complex, the issuing company should prepare itself to go through the whole process.

## Fixing Terms and Conditions

After the initial documentation, the issuer and the lead manager fix the terms and conditions of the proposed equity offering in the international markets. These terms and conditions relate to the issue price, coupon rate, conversion terms, voting rights, call and put options, expense reimbursement, underwriting and other fees payable by the issuers.

The coupon rate is fixed in case of Euro Convertible Bonds (ECBs). The coupon rate for ECB is set over the dividend yield, but care is taken to see that it is fixed below the rate, which the issuing company would have paid normally, had it raised the finances in its domestic country using other models of debt financing. To arrive at the coupon rate, the credit rating of the issuing company is implicitly considered, because the more impressive the company's track record is, the easier it would be for the issuer to fix the coupon rate at a reasonable level.

The issue price applies to GDRs, but not to ECB (in this case coupon rate). Since EPS goes down proportionately to the increase in capital, the GDR or Euro-convertible issue price needs a downward adjustment on their issue. Therefore, the GDRs are generally priced at a discount to market prices prevailing for the shares in the issuer's country. Apart from this factor, its capacity for future earnings is also considered in arriving at the issue price. The actual price is fixed with regard to the market price prevailing just prior to the issue date. Market prices of GDRs in international markets are highly correlated to the earnings potential, industry fundamentals and macro-economic factors.

Since GDRs and ECBs form part of equities of the issuer, they have voting rights as applicable to shares issued in the issuer's domestic country. Generally speaking, this issue is not accorded much significance. In case of ECBs, voting rights are not so relevant since the initial issues are in the form of bonds and the question of voting rights arise only when they are converted to shares at a later stage. Since GDR investors keep changing from time to time, they show least interest to exercise their voting rights. However, keeping in view the rights applicable to equity shareholders, different practices are adopted for exercising the voting rights. The issuer makes an arrangement with the ODBs wherein the voting rights are exercised by the depository either with majority or in accordance with the management's instructions.

The issuing company generally issues a single global certificate to a common nominee who deposits it with a depository. The depository in turn issues a 'specific certificate' to the investor. In GDR issues, the shares are issued by the company to an intermediary termed as ODB, in whose name the shares are registered and the actual shares rest with the custodian bank in the issuer's country. For converting the GDR into shares, an individual GDR holder can arrange for conversion by simply approaching the depository. On conversion, the GDR becomes a share on par with all the other shares of the issuing company. When a GDR holder opts for cancellation, by approaching the ODB, the depository directs the custodian bank in the issuer's country to sell the underlying shares and the proceeds adjusted for tax and converted into foreign exchange, are repatriated to the investor.

The act of converting a GDR into a share is called *fungibility* of GDRs. GDR fungibility means that the GDR is replaced by a share, and it involves withdrawal of foreign exchange from the issuer's country. When the shares are re-converted into GDRs, it is called two-way fungibility. Put simply, two-way fungibility is possible only when shares are re-convertible into GDRs.

The companies should also note the conversion process of a Euro-convertible bond into a share of the issuing company. Once the lock in period is over, the bondholders get the right to convert their ECBs into shares any time until the final date of maturity. At the time of issuance of ECB, the issuer fixes the conversion price as well as exchange rate for such conversions and a clause is provided wherein the investor has to serve the notice when they want to redeem their bonds,

which are irrevocable. In some ECB issues put and call options are also attached to the instrument (please refer Techniques of issuance of Euro-Equities section).

The call and put options are introduced in structuring Euro-convertible issues. Under the call option, an issuing company can buy back the bonds by giving notice of its intention to do so, and under the put option, the investors can sell the bonds back to the issuer. For the call options, the cut-off points are provided in terms of the closing price of the shares.

### LAUNCHING FORMALITIES/SYNDICATION FORMALITIES

The formation of syndicate groups is one of the major steps in launching the Euro-Equities into the market. Two major approaches of syndication have evolved.

**Euro-Equity Syndication (EES):** This method attempts to group together intermediaries with complimentary placement strengths without any formal regional allocations. In this syndication method, the lead manager places the issue to institutional investors across the global markets. The book runner has no control on the syndicate as multiple approaches are made to the institutional investors in the markets.

**Segmented Syndication (SS):** Under this method attempts will be made to form a geographically targeted syndication structure so as to achieve predetermined placement of Euro-Equities (paper) with institutional investors and retail investors at various centers. This method tries to achieve broader distribution of paper and distribute the same according to the demand in respective regions. The segmented syndication is better as compared to the Euro-syndication as it achieves orderly and coordinated placement of paper and helps the issuer in identifying strengths in specific markets.

Identification of genuine demand is necessary to arrange syndication of Euro-equities. Even though it is a difficult task, once achieved, it can help the issuer in containing the flow-back of paper.

### ROAD SHOWS

The road shows are a customary practice followed in issuance of Euro-Equities. All the potential investors are called generally and a road show is arranged to provide details about the merits of the issuer and the underlying investment offer. A preliminary prospectus, referred to as *pathfinder,* is circulated among the investors to help them arrive at an informed investment decision. The pathfinder helps in judging the potential demand for the equity issue that is being launched in global markets. These road shows are a major litmus test for the issuers and based on the response received from the parties, the issuer can go ahead and launch the issue. In a way road shows serve the purpose of educating investors and knowing their interest in the issue. The lead manager has to do a lot of ground work in organizing these road shows like preparation of *pathfinder*, solid research back-up, present the issue in a slick manner to draw the attention of investors.

## Documentation Requirements

The issuers of Euro-Equities have to undertake a lot of documentation procedures to issue their equity to global investors. The documentation of Euro-equities is complex, elaborate and time-consuming. The issuer has to submit the following documents:

- Prospectus – preliminary and final,
- Depository agreement,
- Custodian agreement,
- Subscription agreement,
- Payment and conversion agency agreement,
- Underwriting agreement,
- Trust deed, and
- Listing agreement.

**Prospectus – preliminary and final:** This document is a major document and it plays a key role in the issuance of Euro-Equities. It carries information about the issuer and portrays the image of the company to the investors. It also contains information regarding various aspects of the company like, its past and present financial performance, its operational efficiencies, about the industry in which it is operating, the purpose of the current issue, how the proceeds are going to be used, etc. Even the details like products, production processes, raw materials, energy costs, pollution control and environmental aspects are also included. It helps the investors in making an informed investment decision. Usually the lead manager is involved in drafting this prospectus, which requires careful attention to meet the stringent disclosure requirements under the Euro-Equities issuance mechanism. The issuing company and its directors are primarily responsible for all the statements and representations in the prospectus.

**Depository agreement:** This draft carries the information about the agreement details arrived at between the issuer and the Overseas Depository Body (ODB). It provides various facilities like, withdrawals of deposits and their conversion into shares, settlement of the transactions, voting rights, etc. This agreement provides full disclosure of all relevant information to the depository regarding the onward transmission to GDR holders and lays down all the procedures to be followed. In short the essence of this document is to bring in transparency between the issuer and the depository and make clear the rules and regulations underlying their agreement.

**Custodian agreement:** This agreement is basically between the depository and the custodian, who holds the underlying shares on behalf of the investors and is held in the issuer's country. The custodian comes into picture as soon as GDRs are converted into shares by overseas investors. The shares have to be released by the custodians. But in the case of euro convertibles, parties enter into a trust deed, which provides for duties and responsibilities of trustees. Similarly another agreement called conversion agency agreement is also made a part of the documentation formalities, which underline the responsibility on the part of the custodian to service the bonds until their conversion into GDRs or shares.

**Underwriting agreement:** This is the most relevant document in the issuance of the Euro-equities. Depending upon the anticipated response from the market, the issuer enters into this agreement and seeks underwriting support. Suppose the issue is not well received in the market, then, according to the agreement, a group of syndicate members pledge to take the un-subscribed/under-subscribed portion of the issue to ensure that the fund raising pattern is not upset. This agreement is undertaken by the issuer to be on safer side in the case of unfavorable response from the investors.

**Listing agreement:** Once GDRs or Euro-convertibles are issued, the issuing company has to make arrangements to list them on overseas exchanges for trading purpose. The most favored stock exchange is Luxembourg, because its listing formalities and disclosure requirements are by far the most easy to comply with. Listing requirements of other exchanges like LSE, and Singapore stock exchange are more rigid in nature and those of New York and Tokyo stock exchanges are the most stringent. Hence, many issuers prefer to list with the Luxembourg stock exchange.

Once all the formalities are complied with and the agreements are reached, the stock exchange may signal the start of trading in the GDRs/ECBs issued by the issuer. LSE provides a list of documents and agreements, which the issuer has to compile in a document titled, *48-hour documents*, and submit it to the exchange prior to the listing of the GDRs/ECBs.

*Content of a 48-Hour Document is given in Appendix I.*

## Payments of Fees

All these agreements and arrangements with various parties come with a cost in the form of fee payable to those parties, like the underwriting fee, the lead manager's expenses, listing fee, road show expenses, selling commission, etc. Such fee have to be kept in mind by the issuer before going to the Euro-Equities issue. All the payments are calculated as net of commissions and expenses. Generally, raising finances with an equity issue is costlier than raising funds with a bond issue. Besides, cost and expenses vary according to the market where the issue is placed. The previous experiences of issues issued by companies from emerging markets indicate that the total costs would be between 3% to 5% of the total issue cost.

## Tombstone Advertisement

Once all the formalities are completed, and the listing arrangements are made, it is a customary practice for the parties involved to issue a tombstone advertisement in leading newspapers and magazines to publicize the completion of the funding deal. A tombstone advertisement is issued to publicize syndicated loans and other funding deals.

### TIMETABLE OF ISSUES

Launching a Euro-Equities issue is a time consuming process and it may take more than ten weeks to complete various formalities. The table given in Appendix II shows the typical period of time required to complete various formalities involved in the Euro-Equities issue.

# FINANCIAL AND OTHER IMPLICATIONS

Once the documentation formalities are completed and GDRs/ECBs are issued and the issuer raises the required finances, the long process of the issuance of Euro-Equities comes to an end. The two main parties involved in the deal, the issuer and the investors have to look at some financial aspects, which have a considerable effect on both the parties. Thereafter, decisions have to be made accordingly.

## From the Issuer's Side

An issuing company has to take into account various factors like the dilution of capital, voting pattern changes, flow-back possibilities, investor awareness and also issuances of foreign markets where issues can be floated.

**Servicing of the Equity:** Once GDRs/ECBs are issued, the issuing company has to be fully prepared to service the equity. When dividends are declared, the amount of dividend payable to the investors needs to be converted into foreign currency from the local currency in which the dividends were declared and accordingly paid. Hence, servicing the GDRs involves foreign exchange exposure. As far as ECBs are concerned, until conversion, they have to be serviced like any other debt financing instrument. Hence, the issuer has to carefully weigh the options and accordingly plan the issue.

**Dilution of Capital:** When Euro Equities are issued, it amounts to issuing fresh equity to investors and can have certain implications on the issuer. For instance, earnings per share may get affected due to increase in equity, similarly voting pattern may also get affected because the investors in GDRs/ECBs are equally considered on par with equity shareholders. Practically, it was observed that since the investors are insensitive to voting, the depository often votes on behalf of GDR holders.

**Flow-back Possibilities:** Flow-back of capital generally drains the forex reserves. The issuing company can overcome this problem by appointing a lead manager who undertakes to develop awareness in the overseas markets. This usually happens when the investors in the Euro-Equities are not satisfied with the

performance of the issuer. They always have the option (after the cut-off period in case of ECBs) to redeem their shares. This will involve draining of forex reserves on part of the issuer and frequent redeeming can affect the credibility of the issuer and may lead to less credit standing in international markets. Apprehensions relating to flow-back of capital can be contained if the issues are well structured, and stand the scrutiny of the markets in which they are floated.

**Investors' Confidence:** In order to curtail flow-back possibilities, the issuer has to undertake a series of steps to boost the investor's confidence, like regular interactions with overseas investors and inform them of the latest positive developments in the company's performance. This has become much easier due to the latest technology available. Investors can be informed periodically through electronic news letters regarding the company's performance and thus try to reduce frequent churning of their portfolios.

It is important to note that only when the issuer provides attractive returns and compensates them adequately by better returns, will the investors be happy and gain by taking risk i.e., invest in the issuer's offering.

## From Investor's Side

The investors, who put their money in these issues, expect certain returns from the issuer. If returns meet their expectations they do not complain, but if the returns are far below their expectations they start churning their portfolios. The basic aim of the investors in these markets is to go in for international diversification of their portfolios so as to spread their risks and achieve reasonably good returns from their investments. The investors would go in for those investments, which afford them capital appreciation, moderate taxation, returns commensurate with the risks taken in investments and less cumbersome statutory and administration requirements.

Investors in developed countries especially show interest in these issues because the issuing companies hail from the fast developing economies. They hence present excellent growth potential. In the wake of globalization, markets in these countries are flooded with a number of issues from many blue chip corporates. If the issuer company is popular in these markets, the investors easily subscribe the issue.

## SUMMARY

- As the international financial markets entered the new millennium, the "New Age" expansion phenomenon was clearly evident on the international plane.
- The "New Age" expansion and its different manifestations in various sub-continents will significantly boost the activity in the international capital markets. International investors can also capitalize on the experience they have acquired in the preceding two decades to effectively explore the new investment opportunities arising in the world. Cross-border portfolio diversification can be better achieved in a friendly regulatory, supervisory and accounting framework and it is also necessary for the investors to comprehend the environmental changes taking place throughout the world.
- Issuers, investors and capital market intermediaries can be expected to resort to equity financing on an increasing scale in the years ahead.

# Appendix I

## 48-Hour Documents

The 48-hour documents must be lodged in final form with the exchange (marked, unless otherwise noted below, for the attention of listing applications) no later than midday at least two business days prior to the consideration of the application for admission to listing.

1. An application for admission to listing in the appropriate form issued by the exchange (schedule 3B of the listing rules) signed by a duly authorized officer of the issuer or by an agent or attorney thereof.
2. A declaration of compliance in the appropriate form issued by the exchange (schedule 4B of the listing rules), signed by a duly authorized officer of the listing agent.
3. Three copies of the listing particulars or equivalent offering document relating to the issue, satisfying all relevant requirements for the contents of such documents together with, where applicable, copies of any notice of meeting referred to in such documents. In the case of an application in respect of securities of a class not already listed, one of the copies of the listing particulars must be signed and dated by a duly authorized officer or by an agent or attorney of the issuer, and lodged with a certified copy of the authority of any such agent or attorney.
4. Where applicable, a copy of any national newspaper that contains the formal notice or other document approved or authorized under paragraphs 13,14 on page 31.
5. A copy of any shareholder's resolution required in connection with the issue of the securities, which are the subject of the application.
6. A copy of the resolution of the board of the issuer authorizing the issue, the application for listing, and the publication of the relevant documents.
7. A copy of the final draft of the deposit agreement together with confirmation from the issuer that a copy of the executed deposit agreement will be lodged with the exchange as soon as possible.
8. Where relevant, the letters marked for the attention of the listing department referred to in paragraphs 3(d), (e) and (f).
9. In case of a new applicant:
    i. A copy of the certificate of incorporation or equivalent document.
    ii . A copy of the memorandum and articles of association.
    iii. The annual report and accounts of the issuer and of any guarantor, for each of the periods, which form part of the issuer's financial record contained in the listing particulars.
    iv. Any interim accounts made since the date to which the last annual report and accounts were made up.

*Material Extracted from:*

Global Capital Markets: Shopping for Finance By Arbaz

London Stock Exchange, op.cit.

**Note:** Reference to schedules and paragraphs as appearing in *Depository Receipts: Guide to Listing*.

## Appendix II

The following is an indicative *timetable for Euro-equity issues:

| Stage | Administrative work involved | Time in weeks |
|---|---|---|
| Initial decision | i. Meeting between issuer and lead manager and planning of an issue.<br>ii. Issue structure finalized with due regard to domestic regulatory environment.<br>iii. Draft documentation work.<br>iv. Due documentation process.<br>v. Board meetings preceded by shareholders' approval.<br>vi. Fixing parties to issue (including depository/custodian). | 1 and 2 |
| Approvals and drafts finalization | i. Official approvals-steps initiated.<br>ii. Stock exchange approached.<br>iii. Comments invited and final documentation undertaken. | 3 and 4 |
| Documentation finalization | i. Offering circular and issue documentation finalized.<br>ii. Comfort and consent letters finalized with auditors.<br>iii. Legal opinion formats drafted and finalized.<br>iv. Approvals obtained. | 5 and 6 |
| Pre-launch formalities | i. Road show preparations and presentations.<br>ii. Path-finder prospectus finalized.<br>iii. Listing preparations in final stages. | 7 and 8 |
| Syndication and launch of issues | i. Syndicate group finalized.<br>ii. Road show organized.<br>iii. Documentation circulated among syndicate.<br>iv. Investors contacted. | 9 and 10 |
| Pricing and closing | i. Final terms fixed.<br>ii. Allocation of securities to investors.<br>iii. Final prospectus to be kept ready.<br>iv. Final listing documents lodged with stock exchange.<br>v. Subscription agreement signed.<br>vi. Delivery of global certificate.<br>vii. Closing documents signed.<br>viii. Payments to the issuer.<br>ix. Tombstone advertisement. | 11 and 12 |

* Global Capital Markets: Shopping for Finance by Azar.

# Chapter VI

# Investment Banking

## Lesson 1

## Management of Public Issues, Initial Public Offerings and Pricing of Various Instruments

**After reading this lesson, you will be conversant with:**

- Reasons for Going Public
- Eligibility Norms to Enter the IPO Market
- Offer Document
- Marketing of Issues
- Post-issue Activities

An Initial Public Offering (IPO) is the first public offer of securities by a company since its inception. The security offered in an IPO is generally either equity or convertible instrument. The decision to go public is a critical one as it results in dilution of ownership stake and diffusion of corporate control. An IPO can be used both as a financing strategy and exit strategy. In a financing strategy, the main purpose of the IPO is to raise funds for the company. An IPO can be used as an exit strategy when the existing investors offload their equity holdings to the public.

## REASONS FOR GOING PUBLIC

- Raising funds to finance capital expenditure programs like expansion, diversification, modernization, etc;
- Financing of increased working capital requirements;
- Financing acquisitions like a manufacturing unit, brand acquisitions, tender offers for shares of another firm, etc;
- Debt refinancing; and
- Exit route for existing investors.

### Advantages of Going Public

- Facilitates future funding by means of subsequent public offerings;
- Enables valuation of the company;
- Provides liquidity to existing shares;
- Increases the visibility and reputation of the company;
- Commands better pricing than placement with few investors; and
- Enables the company to offer its shares as purchase consideration or as an exchange for the shares of another company.

### Disadvantages of Going Public

- Dilution of ownership stake makes the company potentially vulnerable for future takeovers;
- Involves substantial expenses ranging between 4% to 15% of the size of the issue;
- Need to make continuous disclosures;
- Increased regulatory monitoring;
- Listing fees and documentation;
- Cost of maintaining investor relations; and
- Takes substantial amount of management time and efforts.

## MANAGEMENT OF PUBLIC ISSUES AND INITIAL PUBLIC OFFERINGS

### Eligibility Norms for an IPO

The companies issuing securities through an IPO should satisfy the following conditions:

- The company intending to make a public issue of securities should file a draft prospectus with the Board, through an eligible Investment Banker.
- Any company prohibited from accessing the capital market under any order or direction passed by the Board, should not make any issue of securities.
- The company should make an application for listing of its securities on the stock exchange(s).

## Pre-issue Obligations

The company selects the Investment Banker(s) for handling the issue. The lead investment banker should maintain a standard of due diligence that he would satisfy himself about all the aspects of offering, veracity and adequacy of disclosure in the offer documents. The investment banker is also liable even after the completion of issue process. The lead investment banker should pay a requisite fee in accordance with regulation.

The following documents should be submitted along with the offer document by the Lead Manager:

**Memorandum of Understanding (MOU):** The Lead Investment Banker has to enter into an MOU with the issuer company specifying their mutual rights, liabilities and obligations relating to the issue. The Lead Manager should ensure that a copy of MOU entered into with the issuer company is submitted to the Board along with the draft offer document.

***Inter se*** **Allocation of Responsibilities:** If the public issue is managed by more than one Investment Banker, the rights, obligations and responsibilities of each Investment banker shall be demarcated in accordance with the activities/ sub-activities as follows:

a. Capital structuring with the relative components and formalities such as composition of debt and equity type of instruments.

b. Drafting and design of the offer document and of advertisement/publicity material and brochure/memorandum containing salient features of the offer document.

c. Formulating of marketing strategies, preparation of publicity budget, arrangements for selection of (i) ad-media (ii) centers of holding conferences of brokers, investors, etc. (iii) bankers to issue (iv) collection centers (v) brokers to issue and (vi) underwriters. Deciding upon the underwriting arrangement, distribution of issue material like application form, prospectus and brochure is also a part of the marketing of the issues.

d. Selection of various agencies connected with the issue, namely the Registrars to the Issue, printers and advertising agencies.

e. Follow-up with bankers to the issue to get quick estimates of collection and advising the issuer about closure of issue, based on the correct figures.

**Due Diligence Certificate:** The lead investment banker should submit a due diligence certificate certifying that all suggestions and observations made by Board have been incorporated in the offer document. He should also furnish a due diligence certificate at the time of filing the prospectus with the registrar of companies.

**Undertaking:** The issuer should submit an undertaking to the Board to effect the transactions in securities by the 'promoter', the 'promoter group' and the immediate relatives of the promoter during the period between the date of filing the offer documents with the Registrar of Companies or Stock Exchanges and the date of closure should be reported to the stock exchanges concerned within 24 hours of the transactions.

**List of Promoter's Group:** The issuer should submit to the Board a list of persons who constitute the promoter's group and their individual shareholdings.

## REGISTRATION OF THE OFFER DOCUMENT

Ten copies of the draft prospectus have to be filed with respective authorities. The draft prospectus has to be accompanied by the following:

- Due Diligence Certificate from the Lead Manager;
- Statement of *Inter se* Allocation of Responsibilities;
- Copy of the MOU between the company and the Lead Manager(s);
- Undertakings from the issuer company –
    a. That the complaints received in respect of the issue would be attended to expeditiously and satisfactorily;
    b. That the company will get the instruments of the proposed issue listed within the prescribed time period and would take necessary steps in time for this purpose;
    c. That the company would apply in advance for the listing of shares which would be generated by the conversion of the debentures/bonds (wherever applicable);
    d. That the requisite funds for the purpose of dispatching refund orders, allotment advices and certificates by registered post, will be made available to the Registrar to the Issue; and
    e. That the promoters' contribution including premium (if any), in full, will be brought in advance before the issue opens.
- A certificate from the Company Secretary of the issuer-company confirming that:
    a. All refund orders against the previous issues have been dispatched to the applicants;
    b. All share/debenture certificates have been dispatched to the allottees; and
    c. The instrument(s) have been listed on all the stock exchanges mentioned in the concerned offer documents.

### Promoter's Contribution

In case of unlisted companies, the promoters shall contribute not less than 20% of the post-issue capital. The promoter's shareholding for after offer for sale should not be less than 20% of the post-issue capital. In case of public issues of a listed company, the promoters can participate either to the extent of 20% of the proposed issue or ensure post-issue shareholding to the extent of 20% of the post-issue capital.

#### SECURITIES NOT ELIGIBLE FOR COMPUTATION OF PROMOTER'S CONTRIBUTION

- If the promoters of any company issuing securities acquire equity for consideration other than cash during the preceding three years before filing the offer documents and if it involves revaluation of assets or capitalization of intangible assets, then such securities are not eligible for computation of promoter's contribution.
- Shares resulting from bonus issues out of revaluation reserves or reserves without accrual of cash resources are not eligible for computation of promoter's contribution.

- In case of public issue by unlisted companies, securities, which have been issued to the promoters during the preceding one year, at a price lower than the price at which equity is being offered to public are not eligible for computation of promoter's contribution. If the difference between the offer price and issue price of the shares is brought in by the promoters, then the shares are considered eligible for computation of promoter's contribution.
- If the shares, which are not eligible in the above cases are acquired in pursuance of a scheme of merger or amalgamation approved by a High Court are eligible for computation of promoter's contribution.
- The securities, which lack a specific written consent from the respective shareholders for inclusion of their subscription in the minimum promoter's contribution subject to lock-in are not eligible for promoter's contribution.

### LOCK-IN REQUIREMENTS

The minimum promoters' contribution shall be locked-in for a period of three years. In case the promoters' contribution in the proposed issue exceeds the minimum specified contribution, such excess contribution will also attract lock-in for a period of one year. The lock-in period commences from the date of allotment or from the date of commencement of commercial production whichever is later.

The following class of shares issued to the promoters but not forming part of promoters' contribution are required to be locked-in for a period of three years:

- Shares issued for revaluation of assets or capitalization of intangible assets, during the preceding three accounting years;
- Bonus shares issued out of revaluation reserves during the preceding three accounting years;
- Shares issued at a price lower than the current issue price during the preceding 12-month period.

The shares forming part of the promoters' contribution and issued last will be locked-in first. The specification of shares for lock-in will thus follow reverse chronological order.

The following are the other provisions associated with lock-in requirement:

– **Pledge of securities forming part of promoter's contribution:** Locked-in securities held by promoters may be pledged only with banks or financial institutions as collateral security for loans granted by such banks or financial institutions, provided the pledge of shares is one of the terms of sanction of the loan.

– ***Inter se* transfer of securities amongst promoters:** Transfer of locked-in securities amongst promoters as named in the offer document can be made, subject to the lock-in being applicable to the transferees for the remaining period of lock-in.

– **Inscription of non-transferability:** The securities, which are subject to lock-in, shall carry inscription "non-transferable" along with duration of specified non-transferable period mentioned in the face of the security certificate.

## MARKETING OF THE ISSUE

The marketing strategy is a crucial factor in determining the success of the issue. The various components of the strategy are:

- Timing of the issue;
- Retail distribution;
- Reservation in the issue; and
- Advertising campaign.

## Timing of the Issue

The timing of the issue is of critical importance to ensure success of the issue. Timing refers to the general sentiment prevailing in the market at the time of the issue. It is extremely difficult in practice to determine the right time for the issue. The decision regarding the timing is a futuristic decision as it involves predicting the expected market sentiment during the time of the issue. There is no structured process to determine the "appropriate" timing for the issue. The Lead Manager normally depends upon the following factors to determine the issue timing:

- Prevailing market sentiments;
- Market forecasts by research reports of reputed outfits;
- Market intelligence about the expected response to the issue;
- Response to some of the recent public offerings in the primary market;
- Avoid clashing with mega-issues or major economic or political events like budget, elections, etc.

## Retail Distribution

The retail distribution is an important success variable in an issue. Normally, the retail distribution is done through a network of brokers. This involves identifying the geographical area where the Lead Manager expects the subscription flows. The brokers who have a strong distribution network in these areas are identified. The brokers generally appoint the sub-brokers at various places. The sub-brokers interact with the investors and procure subscriptions for the issue. The maximum brokerage payable is 1.5% on the amount subscribed and allotted. The brokers are free to pass on the whole or part of the brokerage to their sub-brokers.

The issuer company also conducts road shows at various places. Here the lead manager accompanied by a team of senior officials of the companies holds a conference. The high net worth investors, brokers and sub-brokers attend these road shows. The team makes a presentation about the company and answers the queries raised by the participants. Road shows give an opportunity for the investors and the brokers to directly interact with the issuer company. The following points are normally highlighted in the road shows:

- Past performance of the company;
- Promoters and their track record;
- Appraisal and funding by banks and financial institutions;
- Foreign collaboration, if any;
- Promoters stake in the company;
- Industry prospects;
- Current stage of project implementation;
- Special features like marketing tie-up, tax benefits, brand equity, patents held, etc.
- Market price behavior in case of listed companies (not applicable to IPOs).

Some of the companies use direct mailers to market the issue. A database of target investors is prepared. The application along with the prospectus is directly mailed to the investors. Though the company incurs the cost of mailing, it can save on the brokerage costs.

## Reservations in the Issue

A portion of the issue can be reserved for specific class of investors. This helps in pre-selling the issue and reduces the net offer to the public. The class of investors to whom reservations can be made are as follows:

- Mutual funds;
- Banks and financial institutions;
- Foreign institutional investors;
- Employees;
- Group shareholders.

## Advertising Campaign

The main function of the advertising agencies is to give wide publicity to the issue. The company decides on the size of the advertising budget in consultation with the Lead Manager. Once this is decided the agency and the Lead Manager draw up a publicity campaign. The common channels of publicity are:

- Advertisement insertions in the print media;
- Advertisements in audio-visual media viz., radio and television;
- Press releases and press conferences;
- Hoardings, banners and posters at important locations;
- Investor conferences.

The following advertisements have to be statutorily released:

- Issue announcement advertisement at least 10 days before opening of the issue. This advertisement contains an abridged version of the prospectus.
- Issue opening advertisement on the day of opening of the issue.
- Issue closing advertisement on the day of closing of the issue.
- The basis of allotment advertisement after finalizing of the allotment.

The following guidelines have to be observed with regard to issue advertisement:

- The advertisement shall not contain any information or language which is extraneous to the prospectus;
- No models, celebrities, fictional characters, landmarks or caricatures shall be displayed in any advertisement;
- The advertisement should not include any issue slogans or brand names for the issue except the commercial brand names of its products;
- The advertisement shall not contain statements which promise or guarantee rapid profits;
- The risk factors will be given equal prominence in all respects in relation to the issue highlights;
- No advertisement stating that the issue is fully subscribed or oversubscribed will be issued during the period when the issue is open for subscription;
- No announcement about the closing of the issue will be made, except on the date of closure of the issue.

# POST-ISSUE ACTIVITIES

This section deals with explaining the post-issue activities. Post-issue activities commence with the collection of subscription figures and go on till the securities are listed on the stock exchange.

## Principles of Allotment

The post-issue work starts with the closure of subscription lists. Within three days of closure of the issue the Investment banker is required to inform respective authorities whether the issue is subscribed to at least 90 percent of the amount in his 3-day Provisional Report. If the issue is not subscribed up to 90 percent, underwriters should bring in the shortfall amount within 60 days after the closure of the issue.

On receipt of applications from collecting banks, the registrar's duty would then be to determine the number of successful applicants. The registrar to the issue would scrutinize all applications to check for multiple applications and rejections, to see whether the application is complete in all respects.

Issue processing involves:

- Report collection figures.
- Collect applications from bank branches.
- Receive applications, bank schedules and final certificates.
- Reconcile application and bank schedules.
- Data entry of the details of the applicants.
- Reconcile the total figures, update corrections, check for multiple applications, etc.
- Reconcile consolidated final certificates.
- Identify and separate invalid applications.
- Segregate applications category-wise.
- Prepare the basis of allotment.
- Obtain approval of the stock exchange.
- Separate allottees and non-allottees.
- Sort out stock invests and send them for collection.
- Print refund orders, allotment notices, share certificates.
- Dispatch the refund orders.
- Obtain respective authorities' approval for export of share certificates.
- Prepare register of successful stock invest applicants.
- Process, verify and print underwriting and brokerage pay orders together with detailed brokerage statements.
- File return of allotment with ROC.

The share applications are then grouped category-wise and the relevant details are fed into the computer. The Stock Exchange Division of the Ministry of Finance instructs issuers to adopt the following procedure to ensure uniformity. All valid applications are segregated on the basis of number of shares applied for. The applications are then given distinct serial numbers. This is done for each group. The printed serial number on the application is inverted and arranged in a serial order. Normally, the application number should have six digits. If it has less than six digits, zeros are added to make it six. This order is used for drawing lots. A catalogued list containing the revised serial numbers, the inverted application numbers, the original application numbers and the serial numbers given by the bank are prepared.

## Basis of Allotment

In a public issue, the Executive Director/Managing Director of the Regional Stock Exchange along with the post-issue lead Investment banker and Registrar to the issue are responsible to ensure that the basis of allotment is finalized in a fair and proper manner.

The company should hold a board meeting to pass the resolution regarding the allotment of shares. The Register of members is then prepared giving the details of shareholders of the company. The Registrar then dispatches certificate of allotment/refund orders. The company should then file a Return of Allotments with the Registrar of Companies within 30 days from the date of allotment.

The proportionate allotment of shares is followed in order to ensure that the allotment procedure is fair and unconditional and further, it would not result in an undue concentration of shares in the hands of a few investors.

## Dealing with Undersubscription

If the issue is not subscribed to the extent of 90 percent, the company was earlier forced to refund the subscription amount. This 90 percent also includes the subscription from underwriters if the issue was underwritten and the subscriptions from the promoters in case of non-underwritten issues. Each underwriter agrees to guarantee a portion of the public issue for which an underwriting fee is paid. If the issue is not fully subscribed underwriters are obligated to take-up the unsubscribed portion. For arriving at the amount to be taken up by the underwriter the amount received from successful applicants which bear the stamp of underwriter shall be excluded. The exact amount is calculated by computing the shortfall between the amount committed and the amount procured. Underwriting of primary issues is no longer compulsory.

### Illustration

The following illustration explains the procedure for ascertaining the underwriters liability in case of undersubscription:

Gamma Company issued 2,500,000 equity shares of $10 each at par. The issue was fully underwritten by Alpha – 40%, Beta – 40% and Zeta – 20%.

Applications were received for 2,400,000 equity shares. The marking on the applications were as follows:

Alpha – 1,300,000 shares

Beta – 700,000 shares

Zeta – 250,000 shares

Determine the underwriters' liability.

### Solution

**Statement of Underwriter's Liability**

| | 40% Alpha (No. Shares) | 40% Beta (No. Shares) | 20% Zeta (No. Shares) | Total (No. Shares) |
|---|---|---|---|---|
| Gross Liability | 1,000,000 | 1,000,000 | 500,000 | 2,500,000 |
| Less: Unmarked Applications (2,400,000-2,250,000) | 1,300,000 | 60,000 | 30,000 | 150,000 |
| Less: Marked Applications | (–) 360,000 | 940,000 | 470,000 | 2,350,000 |
| Excess of Alpha to Beta and Zeta | +360,000 | 700,000 | 250,000 | 2,250,000 |
| | | 240,000 | 220,000 | 100,000 |
| | | –240,000 | –120,000 | – |
| | – | – | 100,000 | 100,000 |

Liability is to be met by Zeta for 100,000 shares or $1,000,000.

### Post-Issue Activities

Once the lead investment banker is through with the formalities of the subscription, he submits the post monitoring reports within 3 days from the due dates. The due date for the 3-day post-issue monitoring report is the 3rd day from the date of closure of subscription of the issue and for the 78-day post-issue monitoring report, it is the 78th day from the date of closure of subscription of the issue.

The post-issue lead investment banker actively associates himself with post-issue activities like allotment, refund and dispatch and regularly monitors redressal of investor grievances. The post-issue lead Investment banker also maintains close coordination with the Registrars to the issue and arranges to depute its officers to offices of various intermediaries at regular intervals after the closure of the issue in order to monitor the flow of applications from collecting bank branches, processing of the applications including those accompanied by stock invest and other matters till the basis of allotment is finalized.

### Capital Structure

For the purposes of presentation of the capital structure in the specified format, the lead manager takes the following into consideration:

a. Proposed issue amount = (Promoters' contribution in the proposed issue) + (firm allotment) + (offer through the offer document).

b. Offer through the offer document includes net offer to the public and reservations to the permitted reserved categories and does not include the promoters' contribution in the proposed issue.

c. Net offer to public means the offer made to the domestic public and does not include reservations/firm allotments/promoters' contribution in the proposed issue.

### Share Buy-back

Many large companies usually go for buy-back of their outstanding equity capital through open offers in the market.

The five most commonly cited reasons to set-up a share repurchase program are:

- To increase share price. This is often a strategy that management adopts when it believes the company's stock is undervalued by market analysts.
- To rationalize the company's capital structure. In this case, a share repurchase program allows the company to sustain a higher debt-equity ratio.
- To substitute share repurchases for cash dividend pay-outs. Since capital gains may be taxed at lower rates than dividend income, a share repurchase program offers long-term shareholders some major tax advantages.
- To prevent dilution of earnings. Share repurchases can enhance a company's growth in earnings per share, or conversely, it can prevent an EPS decrease that may be caused by exercises of stock option grants.
- To deploy excess cash flow. Stock buy-backs can be attractive alternative investments for any cash flow left over once the company has met its capital investment needs.

## INSTRUMENT DESIGNING AND PRICING

Issue of securities involves effective channelizing of savings towards investment in corporate paper and enlisting the same on Stock Exchanges to provide liquidity. The capital market is becoming increasingly discerning and the dexterity of the Investment banker in capital structuring, instrument designing and pricing is assuming critical importance in determining the success of the issue.

## Capital Structuring

The capital structure is to be designed so as to integrate well with the financial goals at the corporate level. The objective of a business enterprise is to enhance the wealth of its owners. In case of a company it is accomplished through payment of dividends and appreciation in the value of its shares. While the quantum of dividend is determined by the company itself, it does not exercise any direct control over the market valuation of its shares. Therefore, the financial structure should be designed with the aim of maximizing the market valuation of the firm in the long run.

The important determinants in designing of capital structure are:

**Type of Asset Financed**

Ideally short-term liabilities should be used to create short-term assets and long-term liabilities for long-term assets. Otherwise, mismatch develops between the time to extinguish the liability and the assets generating returns. This mismatch may introduce elements of risks like interest rate movements and market receptivity at the time of refinancing.

**Nature of the Industry**

A firm generally relies more on long-term debt and equity if its capital intensity is high. All short-term assets need not be financed by short-term debt. In a non-seasonal and non cyclical business, investments in current assets assume the characteristics of fixed assets and hence need to be financed by long-term liabilities. If the business is seasonal in nature, the funding needs at seasonal peaks may be financed by short-term debt. The risk of financial leverage increases for businesses subject to large cyclical variations. These businesses need capital structures that can buffer the risks associated with such swings.

**Degree of Competition**

A business characterized by intense competition and low entry barriers faces greater risk of earnings fluctuations. The risks of fluctuating earnings can be partially hedged by placing more weightage for equity financing. Reductions in the levels of competition and higher entry barriers decrease the volatility of the earnings stream and present an opportunity to safety and profitably increase the financial leverage.

**Obsolescence**

The key factors that lead to technological obsolescence should be identified and properly assessed. Obsolescence can occur in products, manufacturing processes, material components and even marketing. Financial maneuverability is at a premium during times of crisis triggered by obsolescence. Excessive leverage can limit the firm's ability to respond to such crisis. If the chances of obsolescence are high, the capital structure should be built conservatively.

**Product Life Cycle**

At the venture stage, the risks are high. Therefore equity, being risk capital *perse,* is usually the primary source of finance. The venture cannot assume additional risks associated with financial leverage. During the growth stage, the risk of failure decreases and the emphasis shifts to financing growth. Rapid growth generally signals significant investment needs and requires huge sums of capital to fuel growth. This may entail large doses of debt and periodic induction of additional equity capital. As growth slows, seasonality and cyclicality become more apparent. As the business reaches maturation stage, leverage is likely to decline as cash flows accelerate.

**Financial Policy**

Designing an optimum capital structure should be done in response to overall financial policy of the firm. The management may have evolved certain financial policies like maximum debt equity ratio, targeting or maintaining of certain credit rating, predetermined dividend pay-out, etc. Designing of capital structure will become subservient to such constraints and the solution provided may be sub-optimal.

**Past and Current Capital Structure**

The proposed capital structure is often determined by past events. Prior financing decisions, acquisitions, investment decisions, etc. create conditions which may be difficult to change in the short run. However, in the medium to long-term, capital structure can be changed by issuing or retiring debt, issuing equity, equity buy-backs securitization, altering dividend policies, changing asset turnover, etc.

## Types of Instruments

### DESIGNING THE INSTRUMENT

The abolition of the office of Controller of Capital Issues resulted in removal of all statutory restrictions on the design of new financial instruments. A wide array of financial instruments designed for varying risk-reward levels and liquidity preferences have been developed. Designing of financial products call for exacting skills in financial engineering. The limitations imposed by the legal framework have also to be taken into consideration.

There are various factors that influence the choice of instrument decision, a few of which are listed below:

#### Purpose of the Offer

While designing an issue, the purpose for which the issue is made will largely determine the type of security to be used. Tangible assets are more readily financed by debt, while growth opportunities which involve intangible assets such as intellectual property rights are better financed with equity.

#### Debt Servicing

The choice of security issued is also dictated by the ability of the firm to service periodic payments for interest and principal for debt securities. While debt securities help in leveraging the firm's earnings per share, it also entails the additional financial risk of not being able to meet future obligations. The existence of excess debt capacity in the firm will favor debt as suitable, other things being constant. The lead manager should weigh the pros and cons before deciding on the selection of the security.

#### Tax Considerations

The tax implications to the issuer and the investor should be examined. The implications vary depending on the nature of the instrument. In case of debt instruments, the amount of interest paid is tax-deductible to the issuer. However, the amount of interest received is taxable in the hands of the investor. In case of equity, no tax deduction for the amount of dividend paid is available to the issuer. On the other hand, the issuer has to pay a special dividend tax on the amount distributed as dividends. However, the dividends are totally tax free in the hands of the investor. If the investor sells the security at a profit, after holding it for a period exceeding 12 months, the profit is treated as long-term capital gains and is taxed at lower rates. In case, the holding period is less than 12 months, it will be treated as short-term capital gains and taxed at higher rates.

#### Credit Rating

The riskiness of the firm also has an impact on the debt/equity choice. Firms whose debt issues have high ratings will be able to borrow at a lower interest cost. Such firms may also be able to price favorably their equity issues. The best alternative would be based on the precise impact of the choice of debt/equity on the firm's projected EPS and its effect on expected stock price.

### Asset Cover

Lenders of debt normally insist on adequate security. Debt securities, secured and backed by tangible assets are more attractive to lenders. Debenture/bond trustees often indicate the minimum asset cover. Therefore, companies without adequate asset cover are forced to issue equity.

### Dilution of Ownership

Equity offers dilute the ownership control of the promoter group. Companies susceptible to takeover threats prefer issuing debt to equity.

## INNOVATIONS IN FINANCIAL INSTRUMENTS

In the recent past, there have been innovations in the financial instruments witnessed, owing mainly to the liberalization measures.

***Zero Coupon Bonds and Cash Pay Bonds:*** Cash Pay Bonds are simple debt instruments, which pay interest in cash. On the other hand, the Zero Coupon Bonds, as the name suggests, have no coupons attached to them. They are issued at a deep discount and redeemed at par. Hence the difference between the two is the return to the investor. The companies in an early stage of growth but with a sound business plan should prefer ZCBs. The companies, by issuing ZCBs, successfully avoid any additional burden on their profit by not having to pay interest and they utilize the funds raised for capital investment. Subsequently, when the date of maturity of the bonds approaches, the revenue stream of the company absorbs the cash outflow. The Zero Coupon Bonds (often called the Deep Discount Bonds) are appropriate for growth companies or start-ups like those in the Telecommunication industry or in the Biotechnology sector which may not have a sound stream of revenue at present but boast of a bright future.

***Secured Premium Notes:*** SPNs are issued at face value and do not carry any interest. They are redeemed by repayment in a series of installments at a premium over the face value. The premium amount is distributed equally over the period of maturity of the installment. SPN's may also be issued with a detachable warrant which may be converted into share(s) for cash after a certain period. They are secured by mortgage on all immovable properties of the company.

***Deep Discount Bonds:*** These bonds are sold at a large discount on their face value and mature at par value. There are no interest payments and investors obtain their return as accretion to the par value of the instrument over its life. The advantage to the issuer is that it does not entail any cash outflow till the time of redemption.

This instrument is similar to ZCB described above. However, the term of this instrument is usually around 20 to 25 years and it provides an option to the investor to exit say at the end of 5 years, 10 years, etc. Financial Institutions regularly tap the market with this instrument, which is in the nature of unsecured bond.

***Optionally Convertible Debentures:*** These debentures carry a predetermined coupon and have a stated tenure. The debenture can either be redeemed or be converted into equity shares on maturity. The option for conversion or redemption is vested with the investor.

***Third Party Convertible Debentures:*** In the third party convertible debt, a warrant is issued with the debt, which allows the investor to subscribe to the equity shares of another company. Normally, the equity, which the investor is entitled to, is that of one of the established names in the group companies to which, the original debt issuer belongs. This method is useful for a start-up to mobilize large amounts of debt to undertake a capital-intensive project. The issuer in this case makes use of the market reputation of the group company. If the company whose shares are being allotted against warrants is a company with a good credit standing the issuing company would not have difficulty in coming up with a successful issue. This process of fund raising is appropriate for a small company with a perfect business plan and enjoying the reputation of being a part of a bigger group. Again the question of paying back the debt raised to the investor does not arise. However,

such kind of an arrangement depends on the relationship of the start-up with the other company. Normally, this kind of a facility is possible when an established company forms a subsidiary with an objective of streamlining the value chain and hence helps the start-up with all kinds of support, including the third party debt-equity swap. For example, established business groups who wish to set-up subsidiary in the fields of internet technology or tap the potential of the biotechnology sector would find such an avenue handy.

***Zero Coupon Convertible Note or LYONS:*** This is a Zero Coupon Bond, which is convertible into the common stock of the issuer. If the investors of such securities choose to convert, they have to forgo all accrued and unpaid part of the interest. Issuance of this stock helps the issuer to take advantage of the convertible debt without too much dilution of the common stock. The issuer gets tax advantage even if he is not paying any interest till maturity, as according to US laws, provisions made for the difference between the issue price and the fair value is considered as expenses for tax purposes. The issuer has to look at the reaction of the investor, because if the underlying stock (against which, the debt has been issued) fails to appreciate, the investor would demand interest for the period of holding. If the investor chooses to convert, the company will have to pay dividends. By issuing such an instrument, the company earns a lump sum in the initial period for which, it does not have to meet any immediate outflow of interest. The funds so raised from the initial offer may be utilized for a project, the duration of which should tally with the period of maturity of the bond. When the cash flow from the project starts coming in, such cash inflows should be utilized for the payment of the principal if the investor so desires. Issue of such instrument would be successful for a large company with a higher credit rating. The investors' confidence in these kinds of cases are of great significance as the investor risks his money for nothing in return for a certain period and assumes the interest rate risk as the price of the ZCBs are more sensitive to the interest rate movements than the normal bonds with periodic distribution of interest. Therefore, a company with a huge requirements of fund, a capital intensive project, a continuous track of profitability and a good practice of corporate governance would be able to attract funds through this route.

***Cumulative Convertible Preference Shares (CCPS):*** CCPS are similar to convertible bonds in the sense that both are eventually converted into equity. The difference is that CCPS pays fixed dividend and Cumulative Deposits attract interest till conversion. The major advantage of CCPS is that it is considered as part of net worth even before its conversion.

This instrument is suitable for companies which want the equity component to remain low, maintain its EPS without becoming overcapitalized, increase the leveraging capacity of the company as it is considered as owners' capital. This, in turn, increases the net worth of the company and allows the issuer to go in for more debt.

One inherent advantage presented by this instrument is that promoter's stake does not get diluted during the public issue.

Further, there is a lot of flexibility with this instrument as various sweeteners can be attached to increase investor attractiveness and could serve as a perfect hedge between debt and equity during times of high interest rates and prevailing illiquidity in the market.

***Non-Voting Shares:*** A non-voting share is more or less similar to the ordinary equity shares except for the voting rights. It is different from a preference share in the sense that in case of a possible winding up of the company, the preference shareholders get their shares of dividends repaid before the owners of the non-voting shareholders. The companies with constant track record and a strong dividend history can issue these kinds of instruments. Non-voting shares are aimed at the small investors, who are normally not interested in the management of the firm. Hence, non-voting shares are a good tool for the promoters of the company to increase the share capital without diluting their stakes in the company. However, if the company fails in its commitment of paying higher dividends to the owners of

the non-voting shares, they automatically get converted to shares with voting rights. Hence, the issuer has to assess the characteristics of the future cash flows and determine whether paying a higher rate of dividend is practicable for them or not. Companies with irregular revenue streams and those with seasonal fluctuation of demand should not issue non-voting shares.

***Detachable Equity Coupons/Warrants:*** Detachable equity warrants/coupons issued by the companies entitle the holder to buy a stated number of equity shares of the issuing company at a stated price at any time during an initial defined period. These detachable warrants can be issued with non-convertible debentures or with any other debt or equity instruments. The conversion ratio and the price at which the shares would be given are pre-decided during the allotment stage itself. The warrants attached to the instruments are freely tradable in the market as individual securities. Detachable equity warrants are most appropriate for the companies that expect a higher growth rate in future, but require funds to support the growth plans. The advantage of these instruments is that, the company receives funds during the seed stages and rewards the investor handsomely when the fruit of the labor is visible. We have a similar instrument of this kind; a 'Convertible Debenture', which gets converted to equity shares at the predetermined price. The difference is the feature of the warrant/coupon in case of the Detachable Equity Coupons, which is not in case of a Convertible Debenture. But while issuing this instrument, the issuer has to pay attention to the course of the capital markets, because the investor would subscribe to the underlying shares if the ruling market price of the share were more than the subscription price.

***Preference Shares:*** Preference shares are instruments issued by the company, which entitle the investor with regular dividends and a preference of payment of capital over the equity shareholders in case of a winding up of the company. The preference shares come in various forms like cumulative or non-cumulative preference shares, participating or non-participating preference share, redeemable or irredeemable preference shares and voting or non-voting preference shares. The company can issue any of these variations depending upon their specific advantages to the company. Financial engineers tend to look at the preference shares as a hybrid security i.e., a combination of debt and equity. Not being a pure equity instrument, issuing preference shares does not dilute the EPS estimates of the company. The issuer can issue as much preference shares, as he may need without having to bother about the key balance sheet ratios of the company. Secondly, the preference shares not being pure debt instruments, the issuer, while issuing them does not have to maintain an asset cover for the same. The promoters of the company need not worry of losing control of the company over a preference issue. It is easy for the issuer of the preference share to attract institutional participation during the stage of offer because there are no restrictions on the banks in US to participate in preference shares which is not so in case of an equity investment. Therefore, raising funds by the way of preference share from the institutional investors is always easier for the company with a good contact with such institutions. The preference shares come with a bundle of disadvantages also. The maximum tenure for which a preference share can be issued is twenty years. Hence companies with a project spanning over a longer duration of time might not find it useful. The medium of preference shares to tap the funds is suitable for large companies with proven track record of profitability, having large duration projects in hand and for whom the key balance sheet ratios are vital for the valuation by analysts for further issue of debt.

***Differential Shares:*** The differential shares are a class of shares that carry varying voting rights with fluctuating rates of dividends. They are the shares those which do not have any voting rights but claim a higher rate of dividend as compared to ordinary shares. The distinctive features of the differential shares are that the voting right of the investor is linked to the rate of return of the shares. In other words, the investor with a normal voting right will get normal dividend and an

investor with lower voting right will get a higher dividend. The issue of differential shares, apart from providing the company with the funds, acts as a takeover defense for the company. Because the promoters, by issuing such shares, can consolidate their control by not sharing proportionate control over the organization even after raising additional capital. The company can make differential issue to its group companies or friendly financial institutions who would subscribe to such an issue and the proceeds can be used for the open market purchases of the shares of the company. However, there is a caution attached to these kinds of issue. The moment, a company comes up with a differential issue, the market looks at the company with suspicion suspecting it to be under an anti-takeover bid. Hence, such issues may not always succeed. Most often, the companies utilize this route as a precautionary measure and not as an aid to maximize the shareholders' wealth. Therefore, any company expecting a takeover attempt may place such an issue with the institutions and may not try to raise funds through it from the public.

***Convertible Debentures Redeemable at Premium:*** This is a convertible bond issued at a face value with a put option entitling the investor to resell the bond to the issuer at a premium at a future date. The face value of the bonds at the issue date is higher than the market value of the common stock into which they are converted. The purpose of these securities is similar to the convertible debt. The issuer attracts attention of the investor by putting the bonds at a premium to the face value, which eliminates the downside risk for the investor. These types of instruments are beneficial to the issuer also, because the conversion of the bond is at a premium, which means a lower cost of funds to him. There is a possible disadvantage as well for the issuer. In case during the maturity, the underlying stock fails to appreciate sufficiently to make the conversion attractive for the investors, the issuer might redeeming the debentures at a premium. This instrument is most suited for the companies, where the cost of capital is a big factor for the sustenance for the company. The industries where cut-throat competition is witnessed and mega deals are made on the basis of price competitiveness, would find this instrument quite helpful because of the low cost of funds.

***Debt for Equity Swap:*** Strictly speaking, 'Debt for Equity Swap' is not an instrument, rather it is a mechanism. However, in the discussion of different instruments it is worth mentioning. Debt for Equity Swap is an offer from the issuer of debt securities to the debt holders to exchange the debt for the common stock or preferred stock. This process is advisable for the companies who wish to make improvements to the debt-equity ratio and reduce the interest outflow on account of the debt service burden. From the point of view of the issuer, the interest outflow is replaced by the dividends which are payable at the discretion of the issuer. This helps the issuer to conserve cash which otherwise would have gone to service debts. Instead the company gets a chance to deploy it. From the point of view of the investor also, it looks attractive, as he can expect rapid capital gains, which is more frequent in case of an equity product. The flip side for the issuer is the dilution of earning per share and the loss of tax advantage the issuer might have received on account of the interest payment. The mechanism of debt to equity swap is highly suitable for large companies with huge balance sheets and for the companies that wish to make improvements to the debt-equity ratio at any cost. For example, a financial institution, which wishes to open a banking subsidiary may not be given the approval to start its bank, if the capital adequacy (or, simply put, debt-equity) is ill-shaped. The mechanism of debt-equity swap would be of great help for such a financial institution.

***Receivable Backed Securities:*** The Receivable Backed Security is an instrument, which is supported by a bundle of receivables linked to various assets with different maturities and bearing different interest rates. The issuer holds the future cash flow streams and issues a debt instrument against those, on which the interest is payable to the investor. The issuer repays the principal to the investor at the end

of the term, which normally coincides with the date of inflows from the credit sale, etc. This process is useful for an issuer who has a lot of credit sales in his business cycle and there is pressing need for cash infusion. In other words, the company gets a chance to use its own cash even when it is not available until a near future. These instruments are a highly reliable source of finance for the companies that wish to reduce their working capital cycle by coming up with a securitized instrument like this. For example, retailers, manufacturing firms, etc., can make use of this method to take care of their short-term cash flow needs.

***Non-Convertible Debenture with Equity Warrants:*** The instrument issued is a non-convertible debenture along with a detachable equity warrant. The investor has the option of exercising the warrant by surrendering the debenture. The company can price the instrument at a lower coupon rate, as the detachable warrant acts as a sweetener. Further, the instrument does not result in immediate dilution of equity. The instrument is attractive to the investor in spite of the lower yield, because he can either sell the warrant or has an opportunity to acquire equity in the company at a price which is usually less than the prevailing market price.

***Triple Option Convertible Debentures:*** These bonds where every debentureholder had an opportunity to acquire two equity shares at par for each debenture. As regards the non-convertible portion with warrants, they had three options:

i. To retain the non-convertible portion and sell warrants.

ii. Surrender the non-convertible portion with warrants and get shares in return.

iii. Retain non-convertible portion, surrendering the warrants and applying for equity shares in cash.

***Zero Coupon Bonds with Equity Warrants:*** The bond is issued at discount to face value and is redeemable at par/premium. This bond entails no regular cash outflow as interest to the issuer. The warrant entitles the holder to acquire certain number of shares either by surrendering the bond or by paying the requisite amount in cash.

***Floating Rate Instruments:*** Traditionally, most of the debt instruments in the country carried a predetermined coupon rate. The coupon rate remained fixed throughout the tenure, irrespective of the general changes in the interest rate structures. An alternative method of fixing the coupon emerged in the form of floating rate. In floating rate instrument, the coupon payable is in the form of mark-up over a market driven reference rate. The steps involved in the process are:

a. Identifying the appropriate reference rate.

b. Determining the exact level of mark-up over the reference rate, commensurate with the risks associated.

c. The intervals at which the coupon rate is reset.

***Auction Rated Debt:*** These are fully redeemable non-convertible short-term debentures, secured by specific movable and immovable assets of the company. It is redeemed at regular intervals and then reauctioned. Interest rate will be determined by the market. Other features include:

i. Useful for companies as it gets long-term funds at short-term rates.

ii. There is no dilution of equity.

iii. Attractive for investor for parking short-term funds as it is secured.

iv. This instrument is privately placed at competitive bids.

v. It does not require a credit rating as the tenure is less than 18 months.

# Issue Pre-writing – Towards Wholesale Marketing

## What it Means

Under issue pre-writing the lead manager sells the entire issue to leading finance companies, brokers and persons with a high net worth. It is selling the issue to wholesale investors before it opens, who commit to invest based on their own financial muscle or one that is derived from their client base. Pre-writing ensures one time subscription to the issue.

The concept originated primarily to lessen high costs of selling issues, to eliminate uncertainty on the public issue response and to market issues to informed investors with a long-term investment perspective.

A pre-condition to pre-writing any issue is that the company has to be fundamentally strong. With the basic premise being met the procedure could vary as per specific marketing schemes adopted by the pre-writers. The schemes include making presentations to portfolio managers, non-banking financial companies, corporates, research outfits, high net worth individuals, large broking outfits, etc.

The presentations involve interaction on a one-to-one basis with the promoters. A response time is given, i.e. the deadline by which the above mentioned parties have to get back, with the amount of subscription they would be interested in investing known as the 'pre-writing commitment'.

## Role of a Lead Manager

The lead manager is the main coordinator and the brain behind the pre-writing process, as pre-writing is very case specific. All activities such as presentation, preparation about the company, selecting the right profile of wholesale investors, deciding on the right amount of commission that would encourage flow of pre-writing commitment and overall supervision to ensure smoothness of operations are taken care by the lead advisor.

## Pre-writing vs. Underwriting

Pre-writing differs from underwriting in the sense that there is no recourse to the pre-writers unlike underwriters, who are statutorily required to pay up if the issue devolves.

## Pre-writing vs. Bought-out deals

Under bought-out deals shares are placed with the intermediaries for a longer period, the exit route might be an issue or further placement and the off-loading price is higher than the purchase price, i.e., acquisition price plus the profit factor. Pre-writing is a marketing scheme which might be used for selling a bought-out deal at the time of off-loading the shares.

## Pricing the Issue

Pricing the instrument is the most critical element of an issue. Since the abolition of CCI, the onus of pricing the issue has fallen on Investment Bankers. Companies are now allowed to freely price their issues. The idea behind free pricing was that if companies overpriced their issues, the market would penalize it by not subscribing and by underpricing, the company would have to forego the potential premium.

## The Era of Controller of Capital Issues (CCI)

The CCI regime, when all the issues coming with a public issue had to price their issue based on the CCI formula, was a case of anti-market practice, where all companies whether fundamentally sound or not had to price their issues very conservatively. As a result of this all the issues coming into the market were easily oversubscribed leaving a few devolvements. The Investment Bankers' role during this period was very limited.

With the abolition of CCI in June, 1992, the restriction was removed and companies were allowed to price the equity at a premium subject to certain conditions. This free pricing regime had its own quota of boons and banes. The sound companies with good fundamentals were able to tap funds from the capital market at a premium. On the other hand, companies with dubious credentials, issued capital with rosy projections and fleeced the uninformed investor.

The Investment Banking community too, moved into the numbers game and became less concerned about the quality of the issues. This resulted in the overpricing of many issues which often gave negative initial returns to the investors.

## Basis for Issue Price: Post-Malegam Recommendations

a. i. Earnings per share i.e., EPS pre-issue for the last three years (as adjusted for changes in capital);

ii. P/E pre-issue and comparison thereof with industry P/E where available (giving the source from which industry P/E has been taken);

iii. Average return on net worth in the last three years;

iv. Minimum return on increased net worth required to maintain pre-issue EPS;

v. Net Asset Value per share based on last balance sheet; and

vi. Net Asset Value per share after issue and comparison thereof with the issue price.

Provided that projected earnings shall not be used as a justification for the issue price in the offer document.

b. The accounting ratios disclosed in the offer document in support of basis of the issue price shall be calculated after giving effect to the consequent increase of capital on account of compulsory conversions outstanding as well as on the assumption that the options outstanding, if any, to subscribe for additional capital will be exercised.

## Various Premia-Fixing Bases

Usually the company coming out with an IPO fixes the premia in consultation with the Investment Banker. The following is a list of factors considered by the companies for fixing premium.:

- The average EPS from the company's projections is taken and then multiplied by its P/E adjusted – in comparison to the industry P/E – to give the offer price.
- Apart from this, other qualitative aspects like quality of the management, their marketing network, technical collaborations, low cost of production, their brand equity, etc. lend sufficient support in the fixation of the premium.
- Other indicators like Return on Net Worth (RONW) and Return on Capital Employed (ROCE) in the projections are also taken as indicators for fixing the premium as these indicators form important inputs for investment decision making by the investors.
- The margin indicators like Gross Profit Margin (GPM) and Operating Profit Margin (OPM) are compared with the industry average as well the other companies in the same industry as these tell upon the efficiency of company *vis-á-vis* others in the field.

## Various Alternatives for Pricing

- Based on Dividend Discount Model:

$$P_o = \frac{D_0(1+g)}{r-g}$$

Where

$P_o$ = Price of the share.

$D_o$ = Current dividend per share.

r = Return expected by the investor.

g = Expected growth in dividends.

This method would again be subjective due to different yields expected by different investors.

- Based on the shareholding pattern and yields expected by different categories of investors. Usually the yield expectation of the public (being uninformed investors) differs from that of the financial institutions and mutual funds. Based on these demand scenarios, the premia could be fixed.

- Premia may also be fixed depending on the Book Value of the share.

- In case of listed companies, the current market price and the past price behavior can be used as benchmarks.

- The auction based process followed by the Japanese could also help in premium fixation. In this process there is no offer price or suggested price and the participants are allowed to select a price for the company using their own information and analysis. Half the shares are auctioned through this way where shares are allocated based upon their bid pricing and the unauctioned shares are priced at the weighted average price of the auction.

- Another method which can be followed in the fixation of premium is through a process of book-building. Here the issuers in consultation with Investment Bankers fix the floor rate which can be either the face value of share or the rate fixed after consultations. After this the issue is auctioned to the investors. The investors put in their bids at different rates. All the bids are arranged in a descending order and the cumulative order position is computed at various rates. The cut-off rate is then determined so as to raise the required sum of money. All the investors who have bid at or higher than the cut-off rate are given full allotment. However the allotment is made at a uniform price (cut-off rate) to all the investors. This type of a bidding system is called as a dutch auction. At present, companies are supposed to offer 10% of the IPO by book-building method.

- Another method for garnering higher premiums than their earnings foretell is through the brand equity of the companies. Although this aspect is difficult to quantify, one method of valuation of the brand would be to reduce from the market capitalization the tangible assets of the company and residual would be the value of the brands.

The logic behind this process of premium fixation is that the strong brand equity of their products will translate into higher P/E and higher earnings for the companies.

## Justification of Premium

### DIVIDEND YIELD APPROACH – A NEW WAY TO PRICE IPOS

Using the dividend yield-based pricing methodology is possible only where there is a consistent cash flow stream expected in future. And this is possible only for natural monopolies or for companies with a long-term pool of lease or hire purchase receivables.

### Pricing it Right

Dividend yield is simply the ratio of the dividend to the market price at a given point in time. Yield-based pricing implies factoring in not just the dividend but also the consistency of this dividend over a three-or-five-year time-frame. When an IPO is floated, the projected dividend and market prices should enable the market to work out the yield.

Adopting a pricing based on dividend yield is done exactly in the same manner as a debt security would be priced. For instance, if a Triple A-rated company has been giving 17 percent dividend and if it can sustain this dividend flow even in future on an expanded equity, then the pricing would have to take this factor into account.

The **qualitative factors** mainly include:

- Company's past record in consistent dividend pay-out and continuous profit making.
- Experience of the promoters in the relevant field.
- The company's Unique Selling Proposition which would include their marketing edge over the competitors, their distribution network, brand equity for their product, reputation of clients, etc.
- Company's entitlement to sales tax and income-tax exemption for a particular period particularly if the project is in some backward area.
- The industry scenario and the demand-supply gap.
- Credit rating received for its debt.

The **quantitative factors** include:

The Malegam Committee has prohibited the use of future projections for fixing the premium. Hence pricing is done based on the historical track record:

- The current market price and the high/low for the last 3 years.
- The P/E multiple based on its offer price and comparing the same with the industry P/E.
- The growth rate in PAT and EPS for the past year.
- The Book Value of the share and the Book Value multiple in relation to offer price.
- The return on net worth and the return on capital employed for the past years.
- The level of promoter's contribution and the price at which shares have been allotted to the promoters.

We can thus argue that both quantitative and qualitative factors have an impact on the pricing of IPOs.

### Pricing of an IPO

Pricing an IPO in the primary market starts with the conception of the project where the promoter of the issuing company specifies the amount he is willing to put into the project and the control level the promoter wants to retain with himself.

Usually the pricing of an IPO is done at least twice or thrice. Once, when the firm is planning to go public it has to select a Investment Banker and it asks the consortium of Investment Bankers to suggest an offer price for the issue. Then later when, after selecting the Investment Banker, they have to decide upon a price band which they have to report to the regulatory authority while filing the prospectus and the third time when they have to actually find a price for the issue. The importance of pricing increases through the three stages, as discussed below.

**Stage I**

**To estimate the preliminary price during the early phase:** During this phase, where the issuing company asks the prospective Investment Bankers to suggest an offer price for the firm's public issue, the Investment Bankers have to consider and evaluate all the factors involved in valuing the company and placing a price on the stock. The factors to be considered here may include special risk factors, use of proceeds, financial leverage, operating leverage, reasons for changes in the company's financial condition, principal products and services, patents, marketing, production, management, composition of the Board of Directors, regulation, litigation, etc. Apart from these factors, the future earnings and cash flow from operations is also considered and compared with similar companies in the same industry.

The lacuna in this method is that companies normally tend to select that Investment banker who offers them the highest price. Investment Bankers, in order to get the mandate, price the IPO as aggressively as possible. The process, very often, is reduced to a competitive bidding, and later the Investment banker and the company realize that the issue was priced much higher than its intrinsic value.

**Stage II**

**Deciding upon the price band:** In this stage the Investment Bankers have been appointed by the issuing company. The lead manager exercises his due diligence by checking all the important aspects of the company going public. Alongwith this exercise, he compares the company with other companies whose shares are being publicly traded and develops his own forecasts of prices at which the scrip would be traded. The price band is agreed upon after negotiations between the issuing company and the Investment banker. Usually the Investment banker approves on the price band based on the following indicators about the company:

- Past track record of performance.
- Comparison of issuing company with other similar companies with respect to future earnings, cash flow from operations and fundamental asset values.
- SWOT analysis of the issuing company.
- Half-yearly or quarterly earnings of the company during the current year and its expectations in the next quarter.
- Information on retail and institutional interest in the proposed offering and an indication of buying at different levels.
- Information on the overall trend in the IPO market and the success rate of similar issues during the period.
- Taking into account the shareholding pattern before and after the issue and identifying the potential selling shareholders upon listing the stock.
- Taking into account, the part of the issue which has to be underwritten and finding out market-making to the issue.
- Feasibility of perceptions about the company's management from the brokers and prospective investor from the road shows and investor conferences.
- Company's products and services and what the future holds for them. Are they exciting and unique?
- The company's accounting methods and whether there had been any changes in recent years and reasons behind the change.

**Stage III**

**Determining the actual offer price:** The Investment Banker, who at this stage is equipped with all relevant information about the company, negotiates for the final price setting with the company. At this stage, the number of shares in the offering and shareholding pattern might be adjusted depending on the demand for the IPO and the actual negotiated offering price. The final pricing tends to focus on current market conditions and specific demand for the offering at alternative price levels from institutional investors.

In finalizing the price, the Investment Banker has to assess the after-market performance of the scrip. For this he has to consider whether the buying interest for the public offering is coming from long-term or short-term investors.

- Apart from these factors the free pricing era witnessed some anomalies by all the players operating in the IPO market.
- Price rigging is resorted to by the promoters by colluding with the brokers to justify higher prices to the investor. This was possible in the following ways:
    i. Buying shares through intermediaries to camouflage the identity of promoters and thereby succeed in showing a healthy trend for their shares in the market.
    ii. This large scale buying triggers all-round buying and prices of these shares soar to new heights.
    iii. Later these firms show inflated results as basis for the jump in their share prices.
    iv. Further a rights issue announcement justifies stepped up buying at higher prices.

## Book-Building, the Latest Method of Price Discovery

The basic motto of the book building is that the market knows the best. Ever since authorities allowed the companies with no profitability record to come out with IPO vs. book building route, there has been a good rush of such issues. But what is book building and what purpose it serves?

Book-Building refers to the collection of bids from investors, which is based on indicative price range, the issue price being fixed after the bid closing date. The principal intermediaries involved in a book building process are the company, Book Running Lead Manager (BRLM) and syndicate members who are intermediaries registered with government and eligible to act as underwriters. Syndicate members are appointed by the BRLM. The basic difference between IPO and book building is that in an IPO, the Lead Managers decide the price of the issue. In book building offer, the syndicate members decide the indicative price range and the investors decide the price of the issue through a tender method. Out of the total public issue size, 90 percent of the issue can be offered through book building process while only 10 percent of the issue can be offered via fixed price portion. Out of the book building portion, a minimum of 15 percent of the issue size has to be reserved for retail bidders while 75 percent of the issue can be offered to wholesale bidders.

## Pricing of Public Issue through the Book-building Process

"Book-building" means a process undertaken by which a demand for the securities proposed to be issued by a body corporate is elicited and built-up and the price for such securities is assessed for the determination of the quantum of such securities to be issued by means of a notice, circular, advertisement, document or information memoranda or offer document. An issuer company may, subject to the requirements

specified, make an issue of securities to the public through a prospectus in the following manner:

a. 100% of the net offer to the public through book-building process, or

b. 75% of the net offer to the public through book-building process and 25% at the price determined through book-building.

***Seventy Five Percent Book-building Process:*** In an issue of securities to the public through a prospectus the option for 75% book-building shall be available to the issuer company and the following rules are applicable.

- The option of Book-building is available to all the bodies' corporate making issue to the public.
- The book-building facility is available as an alternative to the extent of the percentage of the issue, which can be reserved for firm allotment. The issuer-company has the choice to reserve the securities for firm allotment or to issue the securities through the book-building process.
- The issue of securities is identified as "placement portion category" in the prospectus.
- The securities available to the public are identified as "net offer to the public". This includes the required minimum 25% of the securities to be offered to the public.
- If the book-building route is adopted, then underwriting is mandatory to the extent of net offer to the public.
- The draft prospectus containing all the information except the information regarding the price at which the securities are offered are filed with the Board.
- One of the lead Investment bankers is appointed as a book runner whose name is mentioned in the prospectus.
- The copy of draft prospectus filed with the Board may be circulated by the book runner to the institutional buyers who are eligible for firm allotment and to the intermediaries eligible to act as underwriters inviting offers for subscribing to the securities. The draft prospectus that is circulated indicates the price band within which the securities are being offered for subscription.
- The book runner maintains a record of the names and the number of securities ordered and the price at which the institutional buyer or underwriter is willing to subscribe the securities under the placement portion. The book runner also maintains a record of orders received by him for subscribing to the issue out of the placement portion.
- The underwriters aggregate the offers received for subscribing to the issue and intimate to the book runner the aggregate amount of the orders received by him. The institutional investors also forward their orders to the book runner.
- Once the information is received, the book runner and the issuer company determine the price at which the securities are to be offered to the public.
- The issue price to the placement portion and offer to the public are same.
- After the price is determined, the underwriter enters into an underwriting agreement with the issuer indicating the number of securities as well as the price at which the underwriter shall subscribe to the shares.
- The prospectus of the company is to be filed with the registrar of companies two days after the determination of the issue price.
- The issuer opens two different accounts for collection of application money, one for the private placement portion and the other for public subscription.

The Issuer Company appoints eligible Investment bankers as book runners and their names are mentioned in the draft prospectus. The lead Investment banker acts as the lead book runner and the other Investment bankers are termed as co-book runners. The primary responsibility of building the book is that of the lead book runner.

- The book runners can appoint intermediaries registered with the Board as syndicate members to carry out "underwriting" activities.
- The total size of the issue is mentioned in the draft prospectus, which is filed by the Lead Investment banker.
- In the event of appointment of more than one lead Investment banker/book runner for book building, the rights, obligations and responsibilities of each should be delineated.
- In the case of undersubscription in an issue the book runners must make up the shortfall to the issue and the fact should be incorporated in the *inter se* allocation of responsibility.
- The Board should suggest modifications to the draft prospectus within 21 days of receiving it and the lead Investment banker is responsible to incorporate the modifications in the draft prospectus.
- The issuer company should make an advertisement of the final draft prospectus with all modifications in one English national daily, one Hindi national daily and regional national newspaper where the office of the issuer company is situated. The Issuer Company should compulsorily offer an additional 10% of the issue size offered to the public through the prospectus.
- The book runners and the Issuer Company determine the issue price based on the bids received through the 'syndicate members'. After the determination of the issue price, the number of securities to be offered is determined by dividing the issue size by the determined price.
- Only successful bidders (whose bid is at and above the final price) are entitled for allotment of securities.
- The final prospectus containing all disclosures including the price and number of securities proposed to be issued are filed with the Registrar of Companies.

## Overpricing and Underpricing

i. **Underpricing:** To test whether a stock has been priced at its intrinsic worth or not, returns are computed. If these returns are positive, the indication is one of underpricing.

The returns on the stock Rit (in %) for stock i in period t is calculated using the equation.

$$R_{it} = \left( \frac{P_{it}}{P_{io}} - 1 \right) \times 100$$

Where,

$P_{it}$ = Price of stock i in period t.

$P_{io}$ = Offer price of stock i.

Return on Market Index is given by,

$$R_{mt} = \left[ \frac{P_{mt}}{P_{mo}} - 1 \right] \times 100$$

For adjusting the return on stock i to the market return we calculate the market adjusted return.

$$AR_{it} = R_{it} - R_{mt}$$

ii. **Overpricing:** Similarly if the returns on the stock is negative, then it is an indication of overpricing.

Apart from these indicators, another indicator called the "Wealth Relative" can be used to indicate the performance of IPOs *vis-á-vis* the market.

$$WR_{it} = \frac{1+\frac{1}{N}\sum_{i=1}^{n} r_{it}}{1+\frac{1}{N}\sum_{t=1}^{n} r_{mt}}$$

Where,

N = Total number of IPOs in the sample

$r_{it}$ = $R_{it}/100$

$r_{mt}$ = $R_{mt}/100$.

A wealth relative greater than 1 indicates that IPOs have outperformed the market in that period and *vice versa.*

## IMPLICATIONS AND CONSEQUENCES OF UNDERPRICING

- Underpricing can be related to timing of the issue and prevailing market conditions particularly in the secondary market.
- An empirical study conducted at different periods (both bullish as well as bearish) indicates that initial returns in bullish phase are greater than that in the bearish phase. This may be attributed to the behavior of secondary market during the period of listing.
- As a result of underpricing, the promoter or the company loses the opportunity to raise more funds.
- Since an IPO is mainly intended as a long-term financing strategy, underpricing would give its shareholders good returns thereby enhancing its credibility. This would enable it to tap the market again for its future ventures.
- Underpricing could result in a lower net worth on an increased equity, which might make dividend pay-outs or investments in the future difficult.

## IMPLICATIONS AND CONSEQUENCES OF OVERPRICING

- Overpricing might leave a bad feeling in the minds of the investors particularly if initial returns to them are negative.
- The logic behind overpricing may have to do something with conditions prevailing in the secondary market. Promoters may want to take advantage of the boom in the primary market and would price the issue very high.
- The consequences of overpricing could be really vital, resulting in the devolvement of the issue thereby making the promoters guilty of overestimation which would degrade the image of the company in the market.
- Another logic behind this practice could be to lend credibility to the organization by getting the issue oversubscribed.
- The overpricing is done through rosy projections compared to its past performance and, in the present scenario, the blame goes on to the Investment bankers who price the issues without due diligence and ignore the market rules and regulations thereby leading to strained relations between Investors and Investment Bankers.

### FACTORS UNDERLYING UNDERPRICING AND REMEDIES

i. **Asymmetric Information:** The most basic problem of the IPO process is the presence of both 'good' and 'bad' firms going public, coupled with asymmetric information between firms and investors. Firms know themselves reasonably well but investors do not. When information and analysis is costly, it is difficult for investors to learn about a firm thoroughly.

   Superior information disclosures can reduce this asymmetry and should help reducing underpricing.

ii. **Fixing the offer Price Early:** The firm sets the offer price at time 0 and the issue opens at time T. Firms are likely to be risk-averse with respect to the prospects of issues falling. Hence they underprice to forestall this possibility.

   The delay between choosing an offer price and the issue date has diminished in some sense with the current policy allowing firms to choose a price band at the time of vetting the prospectus instead of a precise price.

iii. **Interest Rate Float:** The issuing company controls the application money for a month. Even if stock invest were widely used, the interest rate on stock invest is quite low. At equilibrium, markets would compensate investors for this low rate of return, through underpricing.

   This problem can be solved if issuing firms and Investment bankers become more efficient and shorten the lags between issue date and listing date.

iv. **Liquidity Premium:** Investors who apply for public issues lose liquidity on the amount paid at issue price. Usually at equilibrium, the markets would compensate them for this by paying a liquidity premium, which would show up in IPO underpricing.

v. **Building Loyal Shareholders:** Firms may have an incentive to underprice when they expect to return to the capital market to raise further resources at a later date, via a rights issue or a public issue.

   Though firms may want to build loyal shareholders at equilibrium the Japanese auction system if prevalent prevents from using underpricing as a means towards this end.

vi. **Investment Banker Rewarding Favored Clients:** The interaction between the Investment banker and the company going public is typically a one shot interaction, but the Investment banker is in a repeated game with many of his clients, especially the large institutional investors. In this situation the Investment banker has an incentive to underprice to retain his established clients.

The repeated game between the Investment banker and his institutional clients is irrelevant in Japanese auction system.

Another method of reducing this underpricing would be by making the IPO market more institutionalized where wholesale buyers in turn offload it to the lay investors.

## Finding the Right IPO Process

### Why are IPOs Underpriced?

There are several reasons behind IPOs getting underpriced. The primary reason is the combined presence of both 'good' and 'bad' issues tapping primary market, coupled with the asymmetric information between firms and investors. While firms know everything about themselves, most of the investors know very little about the fundamentals of the firms. To compensate for this asymmetric information, IPOs are often underpriced. Another reason is the time gap between

setting up of the offer price of the IPO and the actual offer of the IPO to the public. Here firms underprice the issue to discount the risk of possible forestalling of the issue.

One more reason is once the issue is over, the company controls the issue proceeds for about a month. Here the investors would be compensated for their loss of interest or the low rate of return (if they apply through stock invest) by the underpricing of the issue. Also, the investors lose liquidity of their application amounts for quite some time and this has to be compensated by the underpricing of the issue. Another reason is when a company again wants to tap the market for additional funds it would like to keep some loyal shareholders. Sometimes this is done through the underpricing of the initial public issue.

### IPOs Abroad

The US market has also witnessed a very erratic trend in the last decade, as a result of the increased importance of new debt instruments coming into the market.

## SUMMARY

- An Initial Public Offering (IPO) is the first public offer of equity shares by a company since its inception.
- An IPO is used as a financing strategy (to raise funds) or as an exit strategy (to offload holding to the general public).
- There are various advantages and disadvantages of going public.
- The eligibility norms for IPO are: The company should be in existence for the last 5 years with dividend payment for at least 3 years or the project for which funds are required should be appraised by a bank or financial institution who should invest in at least 10% of the equity or debt capital of the company. The issue size does not exceed 5 times the pre-issue net worth.
- The company has to appoint various intermediaries like: Investment bankers, registrars and share transfer agents, bankers to the issue, debenture trustees (if applicable), advertising agency and printers of stationery, underwriters to the issue, brokers to the issue, auditors and legal advisor to the issue.
- The contribution of the promoter should be 20% of the post-issue equity capital. The percentage of holding for a new company coming out with an issue at a premium depends on the size of the issue. The lock-in requirement for the promoters' holdings is 3 years.
- In case of under-subscription of less than 90% of the issue size, the company must refund the proceeds to the investors. In order to avoid refunds, the company can take the help of underwriters who have to subscribe to the balance shares as per their pre-decided commitments.
- While designing the capital structure of a company, the following points must be kept in mind: Type of asset being financed, nature of the industry in which operating, degree of competition, obsolescence of one's products, product life cycle, financial policy and past/current capital structure.
- While deciding about the financial instrument, the following points must be kept in mind: Purpose of the offer, debt servicing, tax considerations, credit rating, asset cover and dilution of ownership.
- The capital markets have seen the following innovative financial instruments in the recent past: zero coupon bonds, secured premium notes, deep discount bonds, optional convertible bonds, third party convertible bonds, zero coupon convertible notes, tax saving bonds, cumulative convertible preference shares, non-convertible debentures with equity warrants, floating rate instruments, auction rated debt, zero coupon bonds with equity warrants, among others.

- New companies should price their issues at par, but private companies with profitability track record can price their issues at a premium and listed companies can price their issues freely. At present, 10% of the issue has to be made by the book building method.
- There are various alternatives to price an issue: Dividend discount model, yield expectation of the public, book value of share, current market price, past price behavior, Japanese auction pricing, book building method, brand equity of the company, etc.
- An issue could be overpriced, rightly priced or underpriced. The factors underlying underpricing are: Asymmetric information, early fixation of offer price, interest rate float, liquidity premium, building shareholders loyalty, rewarding the favored clients of the Investment bankers and to attract the financial institutions.
- The factors responsible for persistent underpricing in the market are: The winner's curse, information disclosure in the pre-selling period, informational cascades, avoidance of litigation, signaling for a future issue, information asymmetry between firms and investment bankers, regulatory constraints, political goals and market incompleteness.

## Lesson 2

# Rights Issues, Bonus Issues, Private Placements and Bought-out Deals

**After reading this lesson, you will be conversant with:**

- Value of Share
- Bonus Issues
- Private Placements and Bought-out Deals

## Introduction

Shares offered by a company to its existing equity shareholders, are called rights shares because they are offered to the shareholder as a matter of legal right. Rights shares are usually offered on terms advantageous to the shareholders. For example, shares of the face value of $10 may be offered at par value, while the market price of the shares at the time of announcing offer may be more than $10 per share.

Generally these shares are offered with in the boundaries of the following rules:

1. Such shares must be offered to holders of equity shares in proportion, as nearly as circumstances admit, to the capital paid-up on the share.
2. The offer must be made by giving a notice specifying the number of shares offered.
3. The offer must be made to accept the shares within a period specified in the notice.
4. Unless the articles of association of the company provide otherwise, the notice must also state that the shareholders have the right to renounce all or any of the shares offered to them in favor of one or more of the nominees.
5. After the expiry of the time specified in the notice or on receipt of intimation earlier from the shareholder declining to accept the shares offered, the Board of Directors may dispose of the unsubscribed shares in such manner as they think most beneficial to the company.

## VALUE OF SHARE

What are the likely consequences of a rights issue on the market value per share, value of the rights, earnings per share, and wealth of shareholders? To answer this question, let us look at the illustrative data of the Right and Left Company given in the following table:

### Illustration 1

**Illustrative Data of the Right and Left Company**

(Amount in $)

| | |
|---|---|
| Paid-up equity capital (1,000,000 Shares of $10 each) | 10,000,000 |
| Retained earnings | 20,000,000 |
| Earnings before interest and taxes | 12,000,000 |
| Interest | 2,000,000 |
| Profit before Tax | 10,000,000 |
| Taxes (50 percent) | 5,000,000 |
| Profit after Taxes | 5,000,000 |
| Earnings per share | 5 |
| Market price per share | 40 |
| (Price earnings ratio of 8 is assumed) | |
| Number of additional equity shares proposed to be issued as rights shares | 200,000 |
| Proposed subscription Price | 20 |
| Number of existing shares required for a rights share (1,000,000/200,000) | 5 |

### Solution

The value of a share, after the rights issue, is expected to be:

$$\frac{NP_o + S}{N+1}$$

Where

N = Number of existing shares required for a rights share.

$P_o$ = Cum-rights market price per share.

S = Subscription price at which the rights shares are issued.

The rationale behind this formula is as follows: For every N shares before the rights issue, there would be N + 1 shares after the rights issue. The market value of these N + 1 shares is expected to be the market value of N cum-right shares plus S, the subscription price.

Applying this formula to the data given in Table, we find that the value per share after the rights issue is expected to be:

$$\frac{5 \times 4{,}020}{5+1} = \$36.67.$$

## Value of Rights

Since the offer of rights is a call option, and options are valuable it will have a positive value prior to its expiration. The value of a right is a function of the strike price, the value of underlying stock, the time of expiration, the variance of the rate of return of the underlying stock and the riskless rate of interest. The value of rights also depends on the dilutive effect which is the difference between the strike price and the market value of the existing equity.

To encourage subscription the issuer sets the subscription price at less than the market price of its stock on the record date. The initial value of the right just after the offering is announced, and when the stock is trading rights-on i.e., the rights are still attached to the stock is calculated by,

$$R = \frac{P_r - S}{N+1}$$

Where, R is the value of the right, $P_r$ is the market value of a share trading rights, S is the strike price and N is the number of rights to purchase one new share. For example a company "X" wants to make a rights offer and has decided on the strike price of $15 and currently has a market price of cum rights of $16.50 and has fixed five rights for one new share. Then the initial value of each right will be:

$$R = \frac{16.50 - 15}{5+1} = 0.25$$

After the specified date the share is said to trade ex-rights because of the shares is not entitled to receive the rights. On the specified date the share price decreases by the value of the right, which is no longer attached to it. Therefore the share price ex-rights is denoted as $P_e$, where, $P_e = P_r - R$.

In a perfect capital market environment the offering of rights does not affect the shareholders wealth, the value of a right plus the value of a share ex-rights just equals the value of a share rights-on. Immediately thereafter the market value of each right will vary with the price of the firm's common stock:

$$R = \frac{P_e - S}{N}.$$

## Wealth of Shareholders

The wealth of existing shareholders (*per se*), is not affected by the rights offering, provided, of course, the existing shareholders exercise their rights in full or sell their rights.

### Illustration 2

To illustrate this point, consider what happens to a shareholder who owns 100 equity shares of the Left and Right Company that have a market value of $40 each before the rights issue. The impact of her wealth when she exercises her rights, when she sells her rights, and when she allows her rights to expire is shown below:

| | |
|---|---|
| **She exercises her rights** | |
| Market value of original shareholding of 100 shares at the rate of $40 per share | $4,000 |
| Additional Subscription price paid for 20 rights shares at the rate of $20 per share | $400 |
| Total Investment | $4,400 |
| Market value of 120 shares at the rate of $36.67 per share after the rights subscription | $4,400 |
| Change in wealth ($4,400–$4,400) | |
| **She sells her rights** | $0 |
| Market value of original shareholding of 100 shares at the rate of $ 40 per share | $4,000 |
| Value realized from the sale of 100 rights at $3.33 per right | $333 |
| Market value of 100 shares held after the rights issue at the rate of $36.67 per share | $3,667 |
| Change in wealth ($3,667 + $333 – $4,000) | $0 |
| **She allows her rights to expire** | |
| Market value of original shareholding of 100 shares at the rate of $40 per share | $4,000 |
| Market value of 100 shares held after the rights issue at the rate of $36.67 per share | $3,667 |
| Change in wealth ($3,667 – $4,000) | $(333) |

## Setting the Subscription Price

Theoretically, the subscription price is irrelevant because the wealth of a shareholder who subscribes to the rights shares or sells the rights remains unchanged, irrespective of what the subscription price is.

### Illustration 3

To illustrate this point, consider a shareholder who has N shares valued at $P_o$ and who enjoys the right to subscribe to an additional share for S. His total investment would be:

$$NP_o + S$$

i.e., Number of shares x Market value per share after rights issue. This is equal to:

$$(N + 1)\ \frac{NP - S}{N + 1} = NP_o + S$$

The value of his shareholding after subscription is equal to the value of his investment, irrespective of the subscription price S.

In practice, however, the subscription price is important. Existing shareholders do not like the idea of S being higher than $P_o$ because when S is higher than $P_o$, the market value after issue would be lower than S. Non-shareholders, who have an opportunity to subscribe to shares not taken by existing shareholders, will have no interest in the shares if S is higher than $P_o$ because they would then suffer a loss when the market value falls below S after the issue.

Due to the above considerations, S has to be set equal to or lower than $P_o$. A value of S equal to $P_o$ is not advisable because it has no appeal to existing shareholders and other investors as they do not see any opportunity of gain in such a case. $S_o$, S has to be set lower than $P_o$. In determining S, the following considerations should be borne in mind:

i. The lower the S in relation to $P_o$ the greater is the probability of success of the offering.

ii. When S is set low, a large number of rights shares have to be issued to raise a given amount of additional capital. If the company wishes to maintain a certain level of earnings per share and/or dividend per share, it would find it difficult to do so when S is set low.

iii. The expectations of investors, the fluctuation of the share price, the size of rights issue in relation to existing equity capital and the pattern of shareholding are important factors in determining what S is acceptable to investors.

### Advantages and Disadvantages of a Rights Offering

A rights offer provides the shareholders with the option of retaining their proportionate ownership in a company when it sells additional shares. It is probably beneficial only to large shareholders because of the separation of ownership and control. A rights offering can be more beneficial to the company as it need not have a broad market appeal and can be only concentrated on investors who already have shares in the company. On the other hand a rights offerings generally takes longer time to complete and the offering eliminates the possible transaction cost savings of selling large blocks of shares to institutions not currently holding the stock. The cost of making rights offerings is less when compared to public issues.

## BONUS ISSUES

The issue of bonus shares is a common feature for certain profitable companies. Normally companies do not distribute their entire earnings earned, to the shareholders, as dividends. A part of the profit is ploughed back into the company in the form of retained earnings. When a company is prosperous and accumulates a large surplus, it converts some of this surplus as capital and divides this capital among the members in proportion to their holdings. This is done by issuing fully paid shares representing the increased capital. The shareholders, to whom the shares are allotted, do not have to pay anything to acquire the share. This process of capitalization of reserves converts the quasi-capital into capital. Issue of Bonus Shares is generally made to bring in line the paid-up capital with the capital employed by the company.

### Impact of Bonus Issue on Valuation

In perfect market conditions, the market capitalization of the company remains constant. Both the Earnings Per Share (EPS) and the book value per share get diluted due to the issue of bonus shares. This would result in a fall in the market price per share. However, the loss to the investor will be offset due to the increase in the number of shares that he possesses. The wealth of the shareholders should remain constant.

**Illustration 4**

The following are the financial data of XY Company.

| | | |
|---|---|---|
| Profit After Tax | – | $15 mn. |
| Share Capital | – | $50 mn. |
| Reserves & Surplus | – | $75 mn. |
| P/E multiple | – | 8 |

The company decides to capitalize reserves of $25 mn. by issuing 1 bonus share for every 2 shares held.

**Solution**

$$\text{EPS} = \frac{\text{PAT}}{\text{No. of Shares}} = \$15 \text{ mn}/5 \text{ mn} = \$3$$

Market Price = EPS x P/E multiple = $3 x 8 = $24

$$\text{Book Value per share} = \frac{\text{Net worth}}{\text{No. of Shares}}$$

= ($50 mn + $75 mn)/5 mn= $25

After the bonus issue

Earning Per Share = $15 mn/7.5 mn = $2

Market Price = $2 x 8 = $16

Book Value Per Share = ($75 mn + $50 mn)/7.5 mn

$$= \frac{125}{7.5} \$16.66$$

If Mr. A held 100 shares in the company, Pre-Bonus:

Market Value = $24 x 100 = $2400

Post Bonus Market Value = $16 x 150 = $2400

There is no change in the wealth of Mr. A.

## PRIVATE PLACEMENTS AND BOUGHT-OUT DEALS

Private placement of securities is one of the most popular avenues of raising capital. Private placement is a method of raising capital in which companies directly sell their securities to a limited number of "sophisticated and discerning" investors. Historically, the private placement market has been as popular as the public issue market. In 2001-02, the amount raised through IPOs has been very meagre as compared to the nineties. Reasons for this could be the scam created by broker Ketan Parekh and attacks on New York that made the stock markets fall from their level of 6000 points (sensex) to a level of 2600 points. It is expected that funds raised through private placements and bought-out deals may increase as a result.

**FEATURES**

a. There are no entry barriers for the private placement market.

b. The terms of the issue can be negotiated between the issuers and the investors.

c. The company has a choice of investors in private placement.

d. The transaction costs are low.

e. Credit Rating is optional in case of debt instruments.

f. The execution of the deal is faster.

## Players in the Placement Market

The main **investors** in the private placement market are:

a. Mutual Funds;
b. Financial Institutions;
c. Banks;
d. Insurance Companies;
e. Foreign Institutional Investors;
f. High Net Worth Individuals; and
g. Private Equity Funds.

The main **issuers** in the private placement market are:

a. Listed Companies;
b. Financial Institutions; and
c. Unlisted and closely held companies.

## Merits of Private Placement

The inherent advantages of private placement as an efficient route for raising capital and profitable avenue for investments makes it acceptable to both the issuers and the investors:

i. **Accessibility:** There are no entry barriers for a company to access the private placement market. Unlike the public issue market, an existing company does not require a dividend track record for 3 years nor does a greenfield project mandatory appraisal and funding by a Bank/Financial Institution. This route is also available to unlisted and closely held public companies. Further, public offering may not be viable if the amount proposed to be raised is very small.

ii. **Speed:** A private placement deal can be successfully executed much faster than a public offering. The procedural formalities for a private placement transaction are minimal. The time-frame required to plan and complete a public offering ranges between 4 and 6 months (or even more in some cases). On the other hand, a private placement deal can be successfully closed in 4 to 6 weeks. This results in substantial saving of time and energy for the issuer.

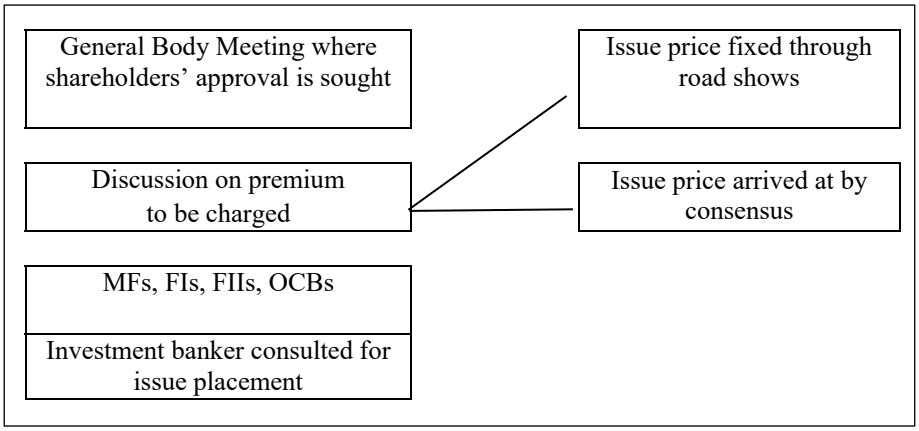
iii. **Flexibility:** In a private placement, there is greater flexibility in working out the terms of the issue. In addition to greater flexibility at the time of structuring the issue initially, there may be more latitude to re-negotiate the terms of the issue subsequently and even roll-over the debt. This is because the issuer has to deal with only a few institutional investors in the Private Placement Market (PPM).

Besides, one of the most attractive features of PPM is that it can be tailored to the needs of first generation entrepreneurs who are comparatively less known to the public which makes their public issue less attractive. It also satisfies investors who want large holdings, but whose needs cannot obviously be met in case of public issue. Thus, for large investors, stocks will be available in the quantity they desire at reasonable transaction cost compared to secondary market buying.

iv. **Lower Transaction Cost:** A public issue entails several statutory and non-statutory expenses associated with underwriting, brokerage, printing, mailing, announcements, promotion and so on. In the absence of advertisement and prospectus, the issue expense in case of private placement is as low as 2 percent of the total issue amount as compared to 10 to 12 percent in case of public issues.

v. **Confidentiality:** Private placements also have the advantage of confidentiality of information. In a competitive environment, keeping strategic business secrets pertaining to a firm is of crucial importance.

**Figure 1: Procedure Normally Adopted by Companies for Private Placement Methods Adopted for Private Placement**

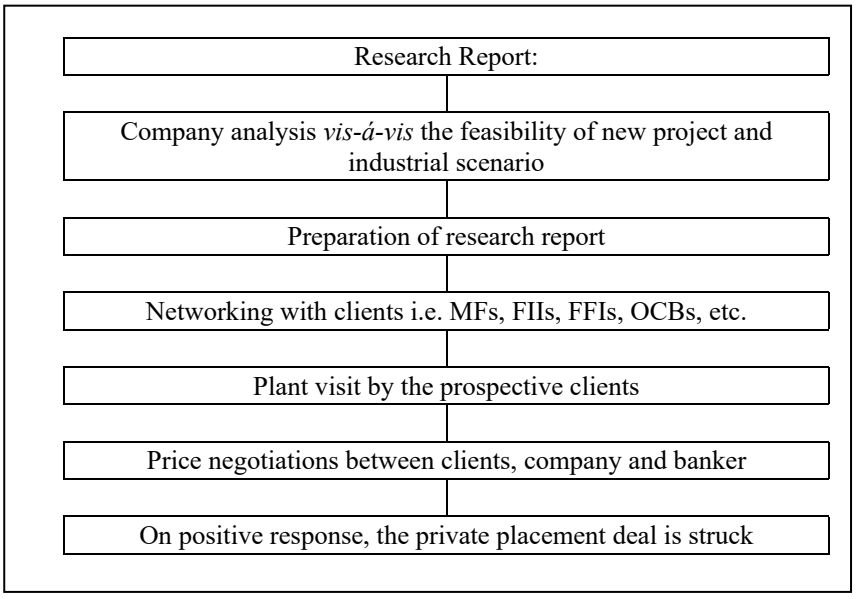



The procedure normally adopted by companies for private placement is that a General Body Meeting is held where the shareholders approval is sought for privately placing the shares. The modalities of it are discussed and the amount of premium that should be charged is put-up for discussion. In doing so, the share price is either fixed through consensus or by making marketability assessments at road shows.

For any Merchant Banker, the return on investment would be the sole criterion for striking a deal on private placements. As such he examines each issue scientifically and objectively. The usual procedure adopted by a Merchant Banker would be:

First, a detailed research is done on the company *vis-á-vis* the feasibility of new project, projected earnings potential, industrial scenario, etc. If the research reports favors a "buy", he proceeds further. He establishes a network with clients viz., MFs, FIIs, FFIs, OCBs, etc., to ascertain their inclination towards the project. Collectively or individually, they make a visit to the plant to check for the facts and have a first hand information. If satisfied, price negotiations between clients, company and banker take place. If the response is positive, the deal on private placement is struck.

**Figure 2: Procedure Normally Adopted by Merchant Bankers for Private Placement**



## Private Placements Abroad

Whenever a security is sold to less than 25 investors in the US markets, it is known as a private placement and it is not necessary to register the same with the SEC. Most of the American private placements are for bonds, with only new and relatively unknown companies going for private placements of equity stock, as they may not be very sure of being successful in tapping the public markets. Also, private placements are mostly done for issues up to $100 million and not for the larger ones.

### BOUGHT-OUT DEALS

#### Definition

A buy-out is a process whereby an investor or a group of investors buys-out a significant portion of the equity of an unlisted company with a view to make it public within an agreed time-frame. To put it simply, buy-outs are nothing but wholesale investments.

## Distinctive Competitive Advantages of a Bought-out Deal in Comparison to a Public Offer

- **The Price Privilege:** One of the main advantages in a bought-out deal as compared to a run-of-mill public issue is that the price is not subject to the vagaries of the market place as the buyer of the stock is sophisticated enough to gauge the future earnings capacity of a company without the help of imperfect signals from the stock market. While this price may not necessarily reflect a company's earning potential to the fullest extent, the discount is the price the issuing company has to pay to get the money upfront.
- **The Quick Fix:** The small investor, who had lost money in the primary market due to companies with dubious record, has a general mood of skepticism to all new issues. Often a promoter cannot convince the lay public about the merits of a project, especially if it is an unknown company or a greenfield project. In such a case, select investors in the form of one or several investment bankers are easier to convince about a project's future earnings capacity. So, some companies will find it easier to go in for a bought-out deal.
- **The Cost Advantage:** If the size of an issue is small, it sometimes makes sense for companies to avoid a public issue. The support for this contention is based on the fact that the fixed costs of a retail capital offering like mandatory advertisements, printing of forms, underwriting and the like are steadily rising. Merchant bankers estimate that for a small issue of $1.5-2 crore, costs may be as high as 15-20 percent of the issue size. This cost advantage has already made its presence felt as a catalyst for private placements. A bought-out deal takes the argument to its logical culmination.
- **Time is Money:** For a company, public issue translates into a six months ordeal of convincing merchant bankers, regulatory and investors. In a bought-out deal, a company is normally saved the sweat. For an entrepreneur, valuable time is wasted in raising money especially when he should be concentrating on funds usage. The possible result: Faster implementation and fewer chances of cost overruns.

## Advantages of Bought-out Deals

Bought-out deals generate all-round benefits for the issuer, intermediaries such as merchant bankers, underwriters, and the investor.

**Benefits to the issuer:** For the issuer with a good project, it means obtaining funds upfront at a minimal cost without the fear of undersubscription in a depressed market. No longer will there be the need to wait for 6-7 months after floating a public issue for collecting the monies minus the 10-12 percent spent as issue cost.

**Benefits to the intermediary:** For the intermediary, it could mean an annualized return of 30-35 percent on a conservative basis, notches higher than the fee for conventional merchant banking services, or, asset-backed leasing or hire purchase, where the returns range is between 18-22 percent. But, by far the greatest benefit for the merchant banker would be his graduation into an investment banker. This is bound to come about, once the market gets organized, since taking a position would naturally require more stringent project evaluation for the sponsor's own sake, if not for that of the investor.

**Benefits to the investor:** For the investors, the benefit would be two-fold. One, of entering into a stock at the initial public offering stage with the comfort of professional evaluation of a merchant banker who holds stakes in it, and two, the assurance of entering at a time when the gestation should logically have been over.

**Figure 3: Advantages and Disadvantages**

| Company | |
|---|---|
| • Timely Funds<br>• Low costs<br>• Procedure-free approach<br>• Quick implementation of the project | • Greater obligation to perform<br>• Risk of placing a substantial chunk of shares with an unknown party |
| Investment banker/Bought-out dealer | |
| • Fixed Yield<br>• High profit margins in •<br>• little time • | • Highest risk involved<br>•<br>• Credibility at stake |
| Investor | |
| • Assured returns<br>• Exposure to lower risk<br>• companies, project<br>• already completed | • Lower returns since they are exposed to lower risk |

## Mechanism of a Bought-out Deal

A bought-out deal works according to a mechanism which envisages a scenario where the issuer of equity would approach the lead manager, who, after evaluating the project, would buy off the entire issue at a negotiated price. The deal would be funded by availing lines of credit from banks and financial institutions by placing the shares as collateral.

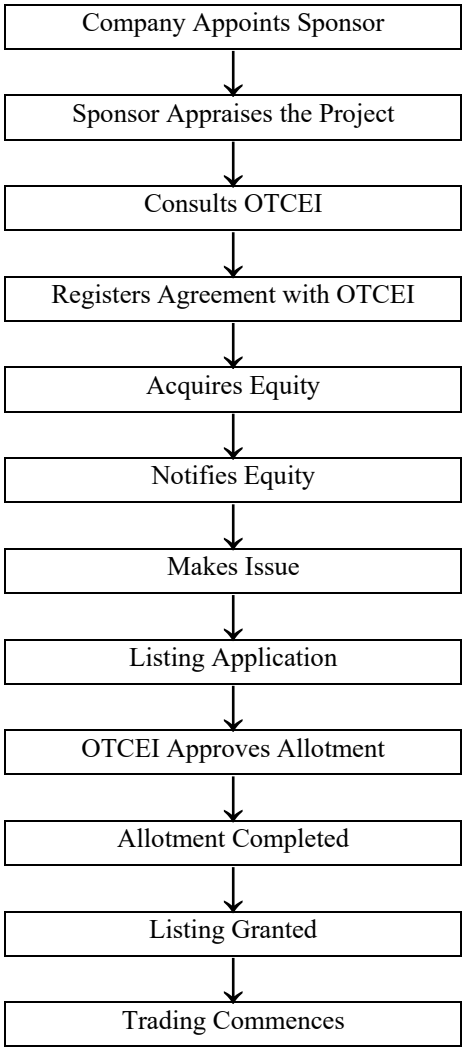
The shares would be immediately listed on placement with the company receiving the funds.

The lead manager, who would be tracking the market for a suitable timing of exit, would offload in favor of a syndicate of underwriters. The underwriters would have two options when the time to book profit arrives: One, to come out with a public issue or, two, to place the shares directly with retail investors registered with them.

## Pricing and Timing of BODs

What is most crucial to shaking hands on the bought-out deal is the consensus on the pricing of the deal. The pricing is a complex exercise that takes into account the project, its viability, gestation period and most important, its financials, such as the post-issue EPS, the industry P/E, etc. Even the approximate rate at which the investment banker could subsequently offload to the public is calculated at the same time.

**Figure 4**




Apart from the conventional pricing parameters of demand and supply, book value, industry P/E and the company's projected earnings, another cost-benefit analysis that needs to be worked out is the period of holding, since disinvestment within a year will entail short-term capital gains tax of 30 percent. The time period up to which the investment banker can hold the issue is very flexible. As a norm the banker holds the shares for about six months to a year. But it is not unusual for him to hold it longer or otherwise because the market fancy and stock market mood to buy the shares at the said premium is more important to him as they play a major role in influencing the profitability of the deal. Many merchant bankers feel that timing is crucial to optimize capital appreciation. In the international markets, shares, acquired through this route, are usually sold after the company has come out with two balance sheets.

## Identification and Evaluation of Bought-out Deals

A very interesting case for study in this emerging scenario would be the projects that sponsors are going in for. Very few sponsors would like to go in outright for greenfield projects promoted by promoters with no track record. Growth industries such as oilfield and oil drilling (contract work and not the long gestation projects), food processing projects with export potential, forging and auto ancillaries, software, and stocks of turnaround scrips were riding the crest of the BOD wave.

Divestment should not be the criterion for making a bought-out deal. The attitude of the merchant banker should be "I don't mind owning the company."

It is very important for sponsors to study bought-out proposals with diligence, to avoid grief later. Special attention needs to be paid to information pertaining to projected earnings. Future earnings is the biggest risk factor. When doing a buy-out, it should be entirely on the confidence of company's estimated earnings.

Returns on bought-outs are fixed on the basis of the company's prospects, and cost of funds for the sponsor. Since the risk element is greater in bought-outs, as compared to, say, debt instruments or investing in the primary or secondary markets, there is a promise of much higher returns.

A sponsor of a bought-out deal assumes that it would divest the equity within a certain time when it would earn returns on investment. Cash flow calculations are prepared accordingly. But, if the sponsor has to hold on to the bought-out longer than expected, all other calculations go haywire. More than half of over twenty BODs which have been offloaded in the market are already quoting below the offer price. There is a feeling that bought-out scrips are overpriced and therefore, should be treated with a great deal of caution.

## Syndication for Bought-out Deals

Merchant bankers have evolved innovative strategies to face, what one merchant banker calls the "bought-out trauma". They have started adopting a consortium approach to bought-out deals which have been forced on the capital market intermediaries primarily on account of the existence of the two regulations that place a cap on the maximum exposure that a merchant banker and broker can take in the company, in which the bought-out deal is being done.

Further, since a bank cannot invest more than 5 percent of the incremental deposit growth of the previous year in corporate assets (shares), these stipulations place a severe restriction on bank and bank-related merchant banking divisions to participate in bought-out deals.

Together, these regulations limit the ability of a small merchant banker to invest in a large-sized bought-out deal. However, since the size of the deals have grown, most merchant bankers are opting for a collective approach to bought-out deals. "The collective approach not only spreads the risk, but the collective bargaining also helps in firming-up a reasonable price". Thus, the concept of syndication or "Club Deal" where four to five merchant bankers subscribe jointly to the deal has come into existence.

## SUMMARY

- Rights shares are shares offered to the existing shareholders as a matter of legal right.
- The objectives of Sec. 81 are: equitable distribution of shares, voting rights not to be affected, shareholders interest in reserves/net worth not to be impaired.
- SEBI has come out with detailed guidelines for rights issues as well as the action plan on how to go about a rights issue.
- A rights issue affects the wealth of those shareholders who renounce adversely, but does not change the wealth of those who exercise their rights or sell the rights to someone else.

- The advantages of a rights issue are: it enables existing shareholders to retain their proportionate ownership of the company, the company can also concentrate on the existing shareholders without increasing the shareholder base and its cost of making is lower than that of a public issue.
- The main disadvantage of a rights issue is that it takes a long time to complete the transaction.
- Bonus issue is the process of capitalizing reserves to convert the quasi-capital into equity capital, generally to bring the paid-up capital in line with the capital employed.
- A bonus issue does not affect the wealth of a shareholder.
- A private placement is a method to raise funds under which companies directly sell their securities to a limited number of sophisticated and discerning investors.
- Mutual funds, FIs, banks, insurance companies, FIIs, rich individuals and private equity funds are the players in the placement market.
- The main issuers are: Listed companies, FIs, unlisted companies, closely-held companies, PSUs and government companies.
- The merits of private placement are: Accessibility, speed, flexibility, lower transaction costs and confidentiality.
- A buy-out is a process whereby an investor buys a significant portion of the equity of a company with a view to make it public within an agreed time-frame. It is also known as a wholesome investment.
- The main reasons for bought-out deals are: Funds requirement in adverse market conditions, funds requirement when the company is not entitled to an IPO, when the company cannot go for an IPO at a premium and when the offer of an investor is more lucrative than an IPO.
- The advantages of a bought-out deal as compared to a public offer are: Price privilege, quick fix, cost advantage and time to realize the funds.

## Chapter VII

# Issuance of Euro-bonds

**After reading this chapter, you will be conversant with:**

- Introduction to Bond Market
- Types of Bonds
- Trends in the Issuance of Euro-bonds
- Instruments used in Euro-bond Markets
- Bond Issue Procedures – Primary Market Deals
- International Bonds – Secondary Market
- Clearing and Settlement
- Strategic Considerations
- Credit Rating of Bonds

## INTRODUCTION TO BOND MARKET

In its basic form, a bond represents a loan. It reflects a promise by a borrower (the issuer of the bond) to repay the amount borrowed at a specific date in the future, plus interest at an agreed-upon rate. The bond market is the channel through which governments and corporations that need to borrow money are matched with investors who have funds to lend. Bond dealers at securities firms and banks act as intermediaries, buying from issuers and selling to investors in the primary market. Once the bonds have been issued, bond dealers use their capital to maintain active secondary markets, bidding for bonds that investors wish to sell and offering bonds from their inventory to investors who wish to buy.

Bonds are bought by thousands of institutions, including mutual funds, pension funds, insurance companies, commercial banks, corporations, state and local governments and international investors such as central banks. Millions of individual investors also buy or own bonds, either directly or through mutual funds or pension plans. In general, bond investors look for dependable income, relative safety and portfolio diversification. A strategy combining both bonds and stocks in a portfolio generally provides for a more stable investment performance over time than one limited to just one or the other. The following table illustrates the pattern of borrowing in the international bond markets. It can be seen that the quantum of borrowing has increased hugely among the financial institutions and state agencies.

**Table 1: Quantum of Borrowing by Agencies in International Bond Market**

| | 1992 (%) | 2000 (%) |
|---|---|---|
| Governments | 19.1 | 2.3 |
| State agencies and public sector | 16.3 | 17.3 |
| Financial institutions | 20.1 | 54.6 |
| Corporate issuers | 32.1 | 23.8 |
| International institutions | 12.4 | 2.0 |

*Source: IMF.*

The features of bonds can be as follows:

- The bonds issued by the issuer typically range between medium- to long-term.
- The repayment of principal in these instruments takes place in two forms, one is by means of agreed amortization over a period of time and the other is one lump sum payment at the end of the given maturity of the bond called as bullet payment.
- Bonds are issued in the form of bearer instruments that are transferable by delivery.
- Bonds are characterized by annual servicing and settled through the international clearing house mechanism.

Bond issues had been one of the oldest techniques to raise finance. With the entry of the merchant banks in the international financial markets, bonds began to be issued internationally in the nineteenth century. The two World Wars, and the government policy in developed countries erected higher barriers to both trade and capital flows. Economic shocks (German hyperinflation and the 1930s Depression) gave support to protectionism over free trade. The move away from fixed exchange rates since 1973, together with the gradual removal of exchange controls and discriminatory tax regimes, led to the emergence of a “global” bond market.

Bond markets have become much bigger relative to global economic activity in recent decades. The main influence on the size of a bond market is the size of the underlying economy. This determines both the desire to hold assets in a particular currency and the ability to use that currency to make coupon and principal payments. In addition, participants are attracted by the lower transactions costs in more efficient markets, so the largest markets (dollar, euro, and yen) are becoming still larger.

## TYPES OF BONDS

The international bond market consists of the Euro-bond market, the foreign-bond markets and domestic markets, in which the global bond investors participate actively. Let us discuss them in detail.

**Domestic bonds:** These are usually fixed-interest, fixed-maturity claims with maturities ranging from 1 to 30 years. They are issued by domestic entities, in the domestic currency, and are sold largely to domestic investors. They are subject to domestic issuance regulations and taxes. They are typically unsecured and may or may not have a call feature, allowing the issuer to redeem the bond at some price prior to its final maturity. They are accompanied by "prospectus" containing information about the issue and stating the rights and obligations of the issuer. They are characterized by an "arm's length" relationship between the investor and the issuer, with little flexibility to renegotiate terms in the light of changing conditions.

**Foreign bonds:** A "foreign currency" bond is a bond that is issued by an issuer in a currency other than its domestic currency. Issuers make bond issues in foreign currencies to make them more attractive to buyers and to take advantage of international interest rate differentials. They are issued to non-resident borrowers. Foreign currency bonds can be "swapped" or converted into the home currency of the issuer in the swap market. Foreign currency bonds have a much different risk and return profile than domestic bonds. Not only is their price affected by movements in a foreign country's interest rate, they are also very sensitive to changes in the exchange rates. If the value of the foreign currency goes up, the bond value also increases. They help to diversify the bond portfolio because interest rates in other countries do not match with the domestic country interest rate. For example, bonds issued by foreign issuers in the United States market in US dollars are known as "Yankee" bonds. Bonds issued in British pounds in the British bond market are known as "Bulldogs". Yen denominated bonds by foreign issuers are known as "Samurai" bonds.

**Euro-bonds:** A Euro-bond is a long-term loan issued in a currency other than that of the country or market in which it is issued. Like in the domestic markets, the Euro-bond market also consists of medium-term, fixed-rate, coupon-paying bonds issued by creditworthy corporates. The publicly issued bonds are traded in the secondary bond markets. The market is free of constraints like registration requirements and withholding taxes. Euro-bonds can be defined as "bonds and other debt securities issued by companies and entities, domestic or foreign, as well as State and supranational bodies, which are subject to different regulations from those governing the issuer and which are placed in two or more countries".

The first Euro-bond issue in the international market was that of Italy's Autostraders issue in 1963 amounting to $15 million and having a maturity of 15 years.

## TRENDS IN THE ISSUANCE OF THE EURO-BONDS

The expansion of the Euro-bond and foreign bond market has been spectacular. The issuances in the Euro-bond market have seen quite a few boom and bust phases in their history dating back to the 1960s. The market has witnessed a wide range of events affecting its performance in the international markets. The trend in the growth of Euro-bonds is categorized into five distinct phases from 1960 to date.

### 1963-1968

The period began with very limited issuances and gradually gained market acceptance. By 1964, the bond market expanded slowly. The bond operations extended to various countries such as Germany in 1964, Netherlands in 1965 and France in the year 1966. During this period the dollar bonds in the Euromarkets continued to surge ahead due to the US current account deficits and a consequent flow of dollars out of the US. Thus, this period can be called as a growth period for Euro-bonds.

### 1969-1974

This period witnessed a downtrend in the Euro-bond market. With the increasing flight of dollars from the US market to other markets, the interest in the markets shifted to other currencies and the Deutsche Mark (DM) sector of market witnessed growth in volumes. Slowly the market witnessed few issues in dollar denominated Euro-bonds. Germany's 25% coupon tax exemption in foreign issues of DM bonds further fuelled the activity in the market. And players increasingly started shifting towards the German mark instead of the dollar. Other developments which severely reduced the activity in the Euro-bonds market are (i) increase in the US interest rates (ii) decline in the stock markets activities (iii) weakening of the US currency (iv) first major oil crisis (v) floatation of international currencies etc.

However during this period, the Euro-bond markets saw new developments like,

- Issuances of FRNs,
- Issuance of Yen bonds by non-Japanese institutions,
- Emergence of supporting services like clearing mechanism for bonds and the setting up of Euroclear in 1968, and
- Formation of Association of International Bond dealers (AIBD) in 1969.

### 1975-1981

This period saw the Euro-bond market rebounding from the slumber and bonds issued by the players slowly started picking up after a temporary slump. The period was marked by the following developments:

i. Volumes in the bond market jumped to new heights spurred by low interest rates.

ii. The introduction of the *bought* deal concept acquired popularity. It changed the dimensions of the issue procedure.

iii. Success of FRN issues and subsequent variations introduced in the market were welcomed by the market players and added to the spurt in the volumes.

iv. Introduction of swap technique in bond market enabled players to switch to other currencies.

v. Issuance of convertible bonds also provided impetus to the market.

**1982-1993**

This period saw the maximum growth in the history of Euro-bonds. According to OECD, bond issue volumes touched an all-time high of $481 billion accounting for a share of 58.7% of the total international lending in the year 1993.

The emergence of the European Monetary System in the year 1979 gave a whole new dimension to the Euro-bond market. This system enabled many European countries to open their markets and the subsequent rush in the bond market skyrocketed the bond market volumes. Apart from this development many other changes took place in the market, which can be summarized as follows:

i. Deregulation of various financial markets across the world.

ii. The introduction of Derivatives during the latter half of the eighties provided a new tool to the market players in the bond market to tackle risks and exposures associated with bond issues.

iii. Introduction of swaps and options helped smaller currencies get inducted into the bond market.

**1994-2001**

The activity for the above said years is illustrated in the following table. It can be seen that the issuances of Euro-bonds in almost all the currencies is fluctuating. The total issuances increased steadily from 1993 to 2001.

**Table 2: Total issuance of International Securities**

| Currency | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001($Q_1$) |
|---|---|---|---|---|---|---|---|---|---|
| U S dollar | 31.5 | 69.8 | 66.3 | 242.7 | 323.8 | 410.0 | 544.6 | 570.0 | 144.0 |
| Japanese yen | 33.8 | 83.8 | 79.3 | 80.6 | 32.9 | –24.8 | –8.2 | 31.1 | –12.2 |
| ECU/euro | – | –10.1 | –6.7 | –12.4 | –1.3 | 87.0 | 533.9 | 443.4 | 135.1 |
| Selected euro member currencies | | | | | | | | | |
| Deutsche mark | 31.2 | 27.3 | 49.7 | 51.9 | 44.6 | 71.3 | N.A | N.A | N.A |
| French franc | 34.5 | 26.4 | 4.4 | 28.9 | 33.9 | 29.3 | N.A | N.A | N.A |
| Italian lira | 13.0 | 17.1 | 8.6 | 23.9 | 32.2 | 17.2 | N.A | N.A | N.A |
| Dutch guilder | 7.9 | 14.5 | 12.7 | 17.0 | 12.7 | 19.7 | N.A | N.A | N.A |
| Spanish peseta | 3.5 | –0.7 | 1.4 | 6.3 | 5.6 | 1.0 | N.A | N.A | N.A |
| Belgium franc | –0.4 | –0.3 | 1.9 | 9.3 | 1.7 | –4.1 | N.A | N.A | N.A |
| Total euro member currencies | 89.7 | 84.3 | 78.7 | 137.3 | 130.7 | 134.4 | N.A | N.A | N.A |
| Pound sterling | 31.7 | 13.9 | 7.5 | 29.7 | 46.8 | 55.0 | 79.0 | 94.5 | 15.4 |
| Canadian dollar | 20.5 | 7.1 | –2.2 | –6.8 | –6.3 | –7.9 | –2.3 | –2.9 | –1.9 |
| Swedish krona | 0.6 | 0.9 | 0.0 | 0.2 | – 0.2 | 3.4 | 0.2 | 1.4 | 0.3 |
| Swiss franc | –2.3 | 18.1 | 0.3 | –1.7 | –2.5 | 7.0 | 3.9 | –0.9 | –1.3 |
| Other | –8.0 | 6.9 | 18.0 | 19.2 | 24.0 | 12.7 | 12.8 | 11.6 | 4.4 |
| Total | 197.5 | 248.5 | 241.2 | 488.8 | 547.9 | 676.8 | 1163.9 | 1148.2 | 283.8 |

N.A – Not Available.

*Source: BIS; International Banking and Financial Market Developments.*

**Table 3**

**Main Features of Net Issuance in International Debt Securities Markets**

In billions of US dollars

| | 2000 | 2001 | 2000 | 2001 | | | | Stocks at end-Dec 2001 |
|---|---|---|---|---|---|---|---|---|
| | Year | Year | $Q_4$ | $Q_1$ | $Q_2$ | $Q_3$ | $Q_4$ | |
| Total net issues | 1,243.5 | 1,071.1 | 312.9 | 328.4 | 295.5 | 177.0 | 270.1 | 7,247.5 |
| Money market instruments[1] | 152.1 | –79.3 | 46.6 | 2.2 | –26.2 | –45.6 | –9.8 | 397.5 |
| *Commercial paper* | 55.2 | 26.9 | 23.3 | 22.3 | 10.1 | –12.0 | 6.5 | 243.1 |
| Bonds and notes[1] | 1,091.3 | 1,150.4 | 266.2 | 326.2 | 321.6 | 222.7 | 279.9 | 6,850.0 |
| *Floating rates issues* | 359.2 | 306.1 | 90.7 | 86.4 | 72.0 | 75.0 | 72.8 | 1,745.2 |
| *Straight fixed rate issues* | 715.4 | 808.5 | 166.1 | 236.0 | 239.0 | 142.2 | 191.2 | 4,833.7 |
| *Equity-related issues* | 16.7 | 35.7 | 9.4 | 3.8 | 10.5 | 5.5 | 15.9 | 271.2 |
| Developed countries | 1,163.1 | 995.2 | 302.8 | 314.0 | 256.1 | 164.0 | 261.0 | 6,287.5 |
| *United States* | 467.2 | 483.6 | 125.9 | 153.3 | 121.2 | 94.8 | 144.4 | 2,225.8 |
| *Japan* | –25.8 | –12.2 | –5.4 | –4.0 | 2.3 | –6.8 | –3.7 | 260.0 |
| Offshore centers | 15.0 | 20.8 | 3.1 | 7.3 | 5.4 | 4.6 | 3.5 | 90.1 |
| Emerging economies | 42.8 | 39.1 | –0.7 | 8.9 | 28.4 | –2.6 | 4.4 | 486.5 |
| International institutions | 22.6 | 16.0 | 7.6 | –1.8 | 5.5 | 11.0 | 1.2 | 383.4 |
| Private sector | 975.6 | 807.7 | 253.1 | 267.0 | 219.2 | 121.7 | 199.8 | 5,418.8 |
| *Financial institutions*[2] | 802.8 | 642.0 | 203.5 | 222.7 | 161.3 | 102.3 | 155.6 | 4,352.2 |
| *Corporate issuers* | 172.7 | 165.7 | 49.6 | 44.3 | 57.9 | 19.3 | 44.2 | 1,066.7 |
| Public sector[3] | 245.3 | 247.4 | 52.2 | 63.2 | 70.7 | 44.4 | 69.1 | 1,445.3 |
| *Central government* | 52.6 | 38.0 | –3.6 | 9.2 | 23.3 | –2.3 | 7.9 | 515.6 |
| *State agencies and other* | 192.7 | 209.4 | 55.8 | 54.0 | 47.5 | 46.7 | 61.3 | 929.6 |
| *Memo: Domestic CP*[4] | 255.9 | –130.3 | 124.9 | –57.0 | –63.1 | –49.2 | 39.1 | 1,918.9 |
| *of which: US* | 208.3 | –161.2 | 42.5 | –63.0 | –67.9 | –58.5 | 28.3 | 1,440.9 |

1 Excluding notes issued by non-residents in the domestic market.
2 Commercial banks and other financial institutions.
3 Excluding international institutions.
4 Data for the fourth quarter of 2001 are partly estimated.

*Source: Bank of England; Dealogic; Euroclear; ISMA; Thomson Financial Securities Data; national authorities; BIS*

## INSTRUMENTS USED IN EURO-BOND MARKETS

The structuring of the Euro-bonds had witnessed major changes in the 1990s. Many new instruments in the form of equity-related bonds, and equity-related warrants or convertibles were introduced in the markets. These instruments make use of swap techniques to switch from one currency to another, or to acquire multi-currency positions. Of all the instruments introduced, the Floating Rate Notes (FRNs) made a significant impact on the international bond markets. Zero-coupon bonds and asset-backed securities are other variations in the Euro-bond market.

### Floating Rate Notes (FRNS)

Floating Rate Notes were introduced as instruments of borrowing in the Euromarkets. FRNs can be described as issue of bonds for medium- to long-term, whose coupon rate varies and is re-fixed at periodical intervals. FRNs were designed to be traded in the secondary market.

The concept of FRNs has become popular with both the investors and the issuers. The note holders benefit from the secondary market liquidity and have an assured rate of return linked to the Libor movements. For investors, the rate of return on the FRNs is higher than the rate of return from the other money market instruments. Above all FRNs are more relevant in a situation of rising interest rates as investors can easily shuffle their holdings from fixed rate to floating rate papers.

FRNs provide an additional source of funding to the issuers with much lower interest spreads than those payable on syndicated loans. Borrowers who do not have access to fixed rate bond market can mobilize funds from primary investors like pension funds, insurance companies, unit trusts and individual investors. The issuer has a benefit of issuing the instruments in various currencies apart from dollars like, Swiss francs, German marks, Pound sterling, Yen etc.

## Different Types of FRNs

As the popularity of FRNs with investors grew there came many variations in their structure and many new types of the instruments were introduced in the market like:

i. *Flip-flop FRNs*: These were introduced by the World Bank. The main features of these instruments are that the interest rate on the FRNs has a spread of 50 basis points over the three month US treasury rate and has a perpetual life. At the end of every six months, the investor has the choice to convert the FRNs into a three-month note with a flat three-month yield. On maturity he can convert the same into a perpetual note.

ii. *Mismatch FRNs or rolling FRNs*: Notes issued under this type pay interest semi-annually though the actual rate is fixed monthly. This method of arrangement enables investors to benefit from arbitrage arising on account of differentials in interest rates for different maturities.

iii. *Mini-max FRNs*: In this type of notes investors agree to a minimum and maximum rate on their notes, which enable them to benefit in terms of high spread over Libor. These notes are also called as collared FRNs.

iv. *Capped FRNs*: Under this type, FRNs issued are tied to an interest rate cap and this cap provides a ceiling above which the borrower is not required to service the notes even if the Libor rates goes above that level.

v. *VRN-structured FRNs*: These types of notes are basically long-dated papers with variable interest spreads and with margins over Libor going up for the latter maturities.

vi. *Perpetual FRNs*: These FRNs as the name indicates are not redeemable and hence are called as perpetual floaters or undated issues.

The features of FRNs are as follows:

- The interest rate is variable and determined periodically.
- The interest rate is the sum of a reference rate plus a spread.
- The reference rate is often Libor.
- The periodicity of the reference rate determines reference period for the FRN.
- Six month Libor is the most common reference period.
- Higher face value than fixed rate.

Thus, FRNs with many benefits and variations under their umbrella became popular among with the investors and issuers. At the time of their launch during the seventies, they were the only instrument of their kind available in the market and hence investors showed a keen interest in investing in them. However, they started losing their significance following few country defaults, the problem of rescheduling debt on a very large-scale and other similar factors. All these affected the sentiments of investors investing in FRNs. They became cautious to lock their funds for a long-term and preferred to take short positions. Thus, the importance of FRNs started declining and short-term instruments like NIF (Note Issuance Facility) gradually gained prominence at the cost of FRNs.

## Fixed Rate Bonds (Straight Bonds)

The fixed rate bonds or straights are the simplest and the most widely used and issued type of bonds in the international markets. The main characteristics of these types of bonds are their interest rates or coupon rates. The issuer fixes the interest rate of the bond at the time of issue considering the market conditions. The rate is arrived at, by using a formula. These instruments are mainly floated in the American and Japanese's markets. When these bonds are floated in the European markets they are known as Euro-bonds. The interest rates fixed on the bonds have a usual reference to the rates on the US treasury bonds for comparable maturities. The issuer's creditworthiness is also considered in arriving at the interest rate. The entire bond amount is redeemed at the time of maturity, known as *bullet* redemption. They are generally listed on London or Luxembourg or Singapore Stock Exchanges.

The interest rate volatility and shifting yield curve have led to the modification of straights into an innovative form called fixed/reversal floating rate notes. These start as fixed rate bonds in the initial years and get converted into the FRN issue pattern, with the interest rate maintained at Libor minus a certain margin. These bonds protect the borrower from the increasing Libor in the Euromarkets. The most significant and successful experiment in the Euromarkets' fixed rate segment was the introduction of Zero-Coupon Bonds.

## Zero-Coupon ("Strip") Bonds

Zero-coupon or strip bonds are fixed income securities that are created from the cash flows that make up a normal bond. (The cash flows of a normal bond consist of the regular interest or "coupon" payments that take place over the term of the bond, and the principal repayment that occurs at maturity of the bond). During their inception in the early 1980s, the individual coupons were "physical", and an actual paper certificate existed for each coupon and the residual. Now these securities are "book based" and are entered on a centralized financial registry system known as the Central Depository System (CDS).

The process of "stripping" a bond involves depositing bonds with a trustee and having the trustee separate the bond into its individual payment components. This allows the components to be registered and traded as individual securities. The interest payments are known as "coupons" after their source of cash flow, and the final payment at maturity is known as the "residual" since it is what remains after the coupons are stripped off. Both coupons and residuals are known as "zero-coupon" bonds or "zeros". Once a bond has been stripped, a trustee directs the appropriate amount of the interest or maturity payment to the security holders. The holder of a zero-coupon receives the par amount of the particular term of the zero that he holds.

The yield of a zero-coupon bond is different than the yield of a normal bond of the same issuer. This difference of "spread" reflects the economics or profits available to investment dealers from "stripping" activities and the supply and demand for zero-coupon bonds. There is also a difference in yield between coupons and residuals, which reflects the larger size of residuals and the economies of trading compared to many smaller coupon positions or "lines".

### Advantages

i. As investors do not receive any interest payments they are not liable to pay tax.

ii. The difference between the issue and redemption price will be considered as capital gains and taxed accordingly at a lower rate.

iii. Very useful in situations of high inflation and high interest rates.

### Disadvantages

i. Market makers do not find this instrument attractive because of absence of periodic income by way of interest receipts.

ii. Different countries have different tax laws and hence all investors may not derive the same benefit and cost savings.

## Asset-backed Securities

Asset-backed securities are bonds that are based on underlying pools of assets. These assets are usually illiquid and private in nature. In order to make these assets available for investment to a much broader range of investors, these bonds have to be securitized. The "pooling" of assets occurs to make securitization economical and to diversify the qualities of the underlying assets. A special purpose trust or instrument is set-up which takes title to the assets and the cash flows are "passed through" to the investors in the form of an asset-backed security. The types of assets that can be "securitized" range from residential mortgages to credit card receivables.

The significance of securitization is that it considers a wide variety of formerly illiquid and directly held assets and makes them available to many investors in the form of asset-backed securities. This simple process can be applied to all sorts of cash flow producing assets. If a retailer needs cash, it securitizes part of its outstanding credit card balances from its customers into a "credit card receivables trust". An auto-leasing firm takes the outstanding automobile lease balances and turns them into an "auto receivables trust". A bank takes a group of its higher quality customers and creates an "evergreen revolving financing trust" which constantly takes high quality receivables and finances them by issuing bonds from the trust.

**Table 4: Characteristics of International Bond Market Instruments**

| Instrument | Frequency of Pmt | Size of Coupon | Pay-off at Maturity |
|---|---|---|---|
| • Straight Fixed Rate | Annual | Fixed | Currency of Issue |
| • Floating Rate Note | Every 3 or 6 months | Variable | Currency of Issue |
| • Convertible Bond | Annual | Fixed | Currency of issue or conversion to equity shares |
| • Straight fixed rate with equity warrants | Annual | Fixed | Currency of issue plus conversion to equity shares |
| • Zero-Coupon Bonds | None | Zero | Currency of issue |

*Source: www.cba.okstate.edu*

## Standard Terms and Conditions

**No Restrictions:** Bond issue does not impose any restrictions regarding the deployment of funds (raised from the issue) on the part of the issuer. They can be used for any purpose according to the discretion of the issuer. Absence of such usage restrictions gives the issuers the flexibility to use the resources for various corporate needs.

**Guarantees:** While raising finances, issuers of bonds must obtain certain guarantees backing the issue in the market. Like sovereign borrowers require a state guarantee, corporates require a bank guarantee, etc.

**Tenure of Bonds:** Bonds can be issued for longer maturities say up to seven to ten years. Certain English and American markets issue bonds with 25 years maturity.

**Redemption:** Bonds typically carry bullet redemption clause, i.e., one time principal maturity payment. Some issues carry amortized payments also. Lately, novel redemption schemes have been introduced which have built in call or put options whereby both the issuer and investors can exercise their respective options.

**Fees Collected:** Bond issues generally involve elaborate administrative expenses in terms of issuance costs like legal and documentation costs, which can be up to 2% of the issue cost. Similarly, other fee like front-end, out-of-pocket expenses, trustee fees, listing fees, etc., should be borne by the issuers.

The issuers have to fully understand the various nuances involved in the issuance of bonds and accordingly plan their borrowing program.

# BOND ISSUE PROCEDURES – PRIMARY MARKET DEALS

Bonds are issued in the primary markets following certain formalities and complying with certain rules and regulations. The procedure followed is similar to the issuance of Euro-equities. However, issuance of Euro-bonds requires an elaborate mechanism compared to other instruments. The issuance of Euro-bonds has to pass through various stages. The different stages of bond issuance are:

## Bidding and Awarding Mandate

The issuer of Euro-bonds has to fulfill various formalities involved while issuing them. Unlike the issuance of syndicated credits and Euronotes, this requires elaborate administrative set-up with the treasury department of the issuer handling the issue. The borrowers have to work down their cash flow positions, assess their fund requirements and determine thoroughly the funds required and accordingly structure the drawdown and redemptions of the bonds issued.

Bids are called initially from interested banks or merchant bankers who wish to participate in the issue. While undertaking evaluation of bids submitted to the issuer, they are carefully scrutinized on various financial parameters like agency fees, listing fees, delivery and handling of bonds, trustee arrangements, experience of the bidder in handling the issues, etc. After going through the details, the issuer short lists some bidders and negotiations are held with the prospective lead mangers and then a final decision is taken in awarding the mandate. Once the bidder is zeroed in and the lead manager is selected other formalities connected with the issue are taken-up. The ability of the lead manager to place the issue with a wide array of investors matters a lot. In a way the issuer benefits from the experienced lead manager because he is well versed with various market nuances and his expertise will come in handy to ensure the widest possible reach.

## Syndication

Once an issuer awards the mandate to a lead manager, the second stage of issue sets in. The lead manager is the key member of the syndicate group and takes the responsibility for a series of tasks. The lead manger has to frame all the requirements and see that all rules and regulations are complied with. Initially, the lead manager enters into a discussion with the issuer, looks thoroughly into the financial strengths of the issuer and considering his financial needs, steps are taken and the amounts to be raised are precisely quantified.

Once a basic understanding is reached with the issuer about the bond issue, the lead manager initiates the action to form the syndicate of underwriters, appoint selling agents and finalize banking arrangements to handle payments. Further the lead manager takes steps to prepare the prospectus with due diligence. The lead manager ropes in other co-mangers in carrying out other various bond issue preparations and tasks. The lead manager ensures that a fair representation is brought geographically in terms of co-management, underwriting and selling groups, so as to give a truly multidimensional look.

Thus, the syndication process is initialized and it may take up to five weeks to arrange co-managers and underwriters for the issue. Instead of depending on the lead manager's expertise to fix the price of the issue, the rate of return and other nuances, the international markets have come up with an alternative called as the *bought deal*.

## Bought Deal

Under this system, the issue is pre-priced by the lead manager and co-managers and is presented to the market and the issuer knows the exact issue price and coupon rate before the former is launched in the market. This method of issuing bonds first made its presence in the US markets in 1979, and the Euromarket slowly picked up the idea.

## Launching, Offering and Closing

***Launching of the issue:*** On receiving various approvals and authorizations by the issuer, the launching of the bond issue is advertised through various media like newspapers, magazines, etc. Invitation telexes are sent to underwriters, selling group members inviting their support. Here, the underwriters become responsible once they commit to underwrite the issue. They have to see that enough subscribers put their money in the issue lest they should face devolvement.

***Floatation of the issue:*** In this phase, the lead manager tries to gauge the support the issue is likely to command in the market based on the feedback from underwriters, co-managers, and selling group. During this phase pricing is determined on the basis of the underwriters' response and this exercise is usually undertaken a day before the offering is opened to the public.

## Offer Period

During the offer period, the lead manager organizes a sales campaign and markets the issue by means of road shows and explains to the investors the merits of the issue and encourages them to invest. During this period, an offer document outlining various issues is circulated to investors. The contents covered in the document are provided in Appendix I.

## Closing Phase

As in the case of issuance of other instruments in international markets, a tombstone advertisement is issued in the leading newspapers and magazines to indicate the closure of the transactions. This stage will see the proceedings of the payments from various parties involved in the issue. Both underwriters and members of the selling groups tender their payments net of their commissions to the clearing house followed by the delivery of notes and bonds to the investors.

It is important to note that the three phases mentioned above go side by side and in fact they overlap each other in some cases and should not be read as exclusive phases.

## Role of IPMA

The International Primary Market Association (IPMA) was set-up as a self-regulatory body with a large number of bond houses as members. IPMA stipulates and ensures adoption of common standards of professional behavior as regards the bond issues and lays down guidelines for making greater disclosures, market stabilization and charging fees. Costs for bond issue floatation and the respective guidelines are also framed in respect of selling activity under the syndication procedures.

## Documentation Requirements

The documentation requirements of the Euro-bond issues are similar to those of other instruments in the international markets. However, Euro-bond issues require some more documents as compared to other instruments. Basically, the documents required are a collection of agreements entered into by the issuer with other parties like trustee, underwriters, stock exchanges, etc., involved in the issue program. The documents to be filed are:

**Prospectus:** This describes the borrower company, its formation, ownership, management; it's past, present, and future operations. The financial performance of the issuer is also outlined in this document. This document gives insights to the issuer regarding the prospective investors and helps in forming an informed decision. It is the responsibility of the lead manager to carry out a due diligence review, under which he studies the strengths and weaknesses of the company at the macro level, labor policies and relations, technological and operational risks and review of accounting policies and procedures.

**Subscription Agreement:** Through this document the lead manager undertakes to subscribe or procure subscription to the bonds being issued. Appendix II carries the items covered by a subscription agreement.

**The Trust Deed or Fiscal Agency Agreement:** This is a long and comprehensive document between the issuer and the trustees. The trust agreement lays down detailed procedures for submission of periodical information by the issuer, holding of meetings of note-holders and orderly servicing of notes by the issuer. It is a very complex and expensive statement.

**Paying Agency Agreement:** This agreement is executed between the issuer and various banks that are the paying agents (who undertake to service the notes). The paying agency agreement also stipulates accounting procedures.

**Underwriting and Selling Agency Agreement:** This agreement is executed between the lead managers or co-managers on one hand and the underwriters and selling agents on the other hand.

**The Listing Agreement:** This agreement is between the issuer of notes and the stock exchange concerned, under which certain conditions have to be fulfilled by the issuer to obtain a listing and continued listing of notes.

**Bible:** In the end, the bond issue managers should compile a comprehensive docket, called the bible, which consists of all the relevant issue documents. The bible, apart from facilitating all future references, simplifies the tasks of various parties, especially the issuers, when they go in for repeat bond issue floatations. It contains all the documents, from the invitation telex for the bids to the tombstone advertisement. It contains all the approvals and authorizations, terms and conditions, offering circular, underwriting and selling agreements, paying agency agreement, subscription agreement, trust deed, bond certificate, closing documents and finally tombstone advertisement.

The bond issuance program contains complex documentation procedures, which have to be followed diligently by the issuer. The complexities involved in the bond issuance programmed can get compounded depending upon the stock exchange chosen for its listing.

### Listing

Once the bond issue is opened and the entire issue subscribed and all the issue procedures are covered, the bond issues have to be listed at one or more stock exchanges depending upon the type of the bond issue, the currency of denominations and the desire of the issuer to seek a quotation at various centers. Euro-bonds or international bonds are listed generally at centers like London, and Luxembourg as these centers cater to a wide array of investors. The bonds issued in the domestic markets like Japan, Switzerland, and Germany should be listed in their respective countries.

A list of documents required for listing on London and Luxembourg exchanges is given in Appendix III.

## INTERNATIONAL BONDS – SECONDARY MARKET

After the issue of bonds in the primary market, facilities exist for secondary market operations in both foreign and Euro-bonds issued. These markets provide a mechanism for buying and selling of bonds and provide liquidity to the instruments and also help in price determination of bonds. The securities can be traded in centralized flow trading markets. The transactions are not physically located in an exchange but are conducted by telephone or telex (or internet). Such a market is known as an Over-The-Counter (OTC) market. Unlike foreign bonds, which are easily traded across various markets, problems arise with sale of Euro-bonds, because transactions are seldom organized on any specific stock exchange. They are usually traded on an Over-The-Counter (OTC) basis. However, quotes are available on those stock exchanges where the issues are listed. Parties generally strike, sell or buy deals over telephones and a clearing system like Euroclear or Cedel is provided to settle the transactions.

Secondary markets serve two main purposes (a) Market making and (b) Market dealing or trading.

**Market Making:** This set-up helps the market makers who have resources to buy or sell on their own account. They have bonds at their disposal for sale and supply liquidity to the market. They provide a two-way (bid and offer) price to investors based on various parameters like interest rates, exchange rates etc., and thus enable the marketability of bonds. The bid price is the price the market maker is willing to pay; the offer price is the price at which he is prepared to sell. The difference between the two prices is the spread.

**Market Dealing or Trading:** A dealer/trader executes buy or sell orders for his clients and helps him trade in the markets and thus creates an active market to trade bonds. The secondary market provides an avenue to investors who have subscribed at the time of primary issue of the bond, to exit by selling their shares in the secondary market. Normally, traders help to execute the deals in the market and provide liquidity for the bonds.

Bond trading in reality is a simple process and bonds are dealt with on a cum-coupon basis. In the market, a trading spread of around 1/2% between bid and offer prices is a common trend and selling commission in the range of 1.25% to 1.5% is levied on new issues.

## Grey Market

Usually the secondary market starts functioning after the closure of the issue. But some issues generate investments at a very early stage and trading commences even before the issue is closed. Such trading is referred to as *grey market* trading. The grey market trading is under the control of the lead manager. The scope for trading is provided by the quantum of bond issue commissions. Underwriters and large institutions buy heavily from this market. Any issue's success is determined by the level of discounts offered in the paid price.

## AIBD (Association of International Bond Dealers)

The secondary market operations are standardized by an international body called as the Association of International Bond Dealers (AIBD), which was set-up under the Swiss law of 1969 as a self-regulatory body at Zurich. It has a large membership of principal bond houses and its objectives are as follows:

i. Promote good relations between members,

ii. Organize services for international securities markets,

iii. Frame rules and regulations for secondary market trading,

iv. To solve technical difficulties of members, and

v. Ensure high degree of professionalism in secondary markets.

AIBD has its presence in number of countries and has several regional level committees to tackle the various problems that members face. The board oversees the operations of regional committees through a central committee of regional representatives. IPMA regulates primary market operations at international level, whereas AIBD governs secondary market operations.

# CLEARING AND SETTLEMENT

A clearing system is an arrangement for transferring assets and settling payment obligations between sellers and purchasers after a trade has been completed. Such an arrangement is possible because the terms and conditions of any international issues are specified so that all bonds of a particular issue are standardized and as a consequence perfectly substitutable for one another.

In order to facilitate both new issues and secondary market operations, clearing house arrangements have been made and necessary systems were laid down to handle transactions. Since a majority of the transactions took place in Europe, the first clearing center was located there. Overtime, clearing on an international basis

was facilitated with the physical delivery of the bonds being substituted by book entries. Euro-bonds are usually cleared either at Euroclear or CEDEL. The two systems are linked by an '*electronic bridge*', which enables members to transact with both the clearing systems. Apart from providing clearing arrangements, both the systems facilitate market-making operations and *bond borrowing* operations. Under *bond borrowing* system investors holding bonds with the clearing system or not having any immediate need for bonds can lend them to other players in the market who can use them for the short run in the bond markets.

- **Euroclear** was created in 1968 by Morgan Guaranty Trust Company. Euroclear is located at Brussels. The custodian banks are located in the majority of financial centers. In its position as a clearing house, Euroclear matches payments against bond deliveries or coupons claims. In 1972, Morgan Guaranty sold Euroclear to 120 financial institutions but retained its role of an operator. In 1987, Euroclear was transformed into a cooperative organization incorporated in Belgium. Its board of directors consists of 22 members.

  On December 31, 2000 *Euroclear Bank* was created, taking over the Euroclear operations and banking roles from Morgan Guaranty. On January 10, 2001, the merger between Euroclear and Sicovam SA became effective and Sicovam SA was renamed Euroclear France SA.

  Euroclear handles trades held on *fungible basis*. A trade is said to be on *fungible basis* when the parties involved in a transaction are informed about the name of specific bond issue and the quantum of bonds credited. Further the identity of the owners and the location of the individual securities are also provided under *fungible basis.*

  The core of Euroclear Bank service is the settlement of cross-border securities transaction on behalf of Euroclear Participants. Over 165,000 different securities are accepted for settlement through Euroclear. Settlement-related services such as wholesale custody, money transfer in over 40 currencies, and securities lending and borrowing meet the changing needs of professionals. All services are integrated within the settlement process.

- **CEDEL International** was incorporated in Luxembourg in 1970. It was established by, 66 financial institutions from eleven countries, as a neutral and independent capital markets infrastructure. It was founded specifically to reduce the costs and risks of settling securities transactions in the Euro-bond market.

  CEDEL International handles both *fungible* and *non-fungible basis* trades. *Non-fungible basis* trade provides details regarding the certificate numbers and helps in locating easily the nature of bonds.

  Over the years Cedel International grew into a global service provider with a mission to deliver to financial institutions competitive, high quality clearing, settlement and custody services.

  Cedel International became the parent company of *Cedelbank, Cedel Global Services* and a number of other subsidiaries. Cedel International is currently owned by more than 90 financial institutions from Europe, America and Asia. Its Board of Directors consists of fifteen senior executives from leading financial institutions around the world.

  In 1999, *Cedel International* announced a merger with *Deutsche Börse Clearing AG*. *Clearstream International* is the result of the merger of the former *Cedel International* and *Deutsche Börse Clearing*. The new company, 50% owned by the current Cedel International, has EURO 7 trillion in assets under custody and is handling in excess of 80 million transactions per annum.

- **Settlement Alliance** was formed from the merger of the former *SIS Sega Inter Settle* from Switzerland and *Crest Co* Ltd. of London. This is another example of consolidation in Europe clearing and settlement industry.

## Recent Developments in the International Secondary Markets

### THE SWISS EXCHANGE

In July 1998, the Swiss Exchange started Euro-bond trading on the fully integrated SWX platform. SWX matches, buy and sell orders and then automatically executes them.

### COREDEAL LIMITED

Opened in May 2000, COREDEAL is a screen-based, order-driven exchange, designed and developed by the International Securities Market Association (ISMA). Debt securities traded on the exchange are predominantly investment-grade corporate issues (bonds rated BBB-/Baa3 or higher at the time of writing), denominated in a variety of currencies, but the exchange also offers trading in euro-denominated government issues.

# STRATEGIC CONSIDERATIONS

We see many issuers and investors actively participating in the bond market. However, both the issuers and investors have to predetermine their priorities, necessities and consider all the relevant facts before plunging into these markets.

## From Issuers' Point of View

Issuers before zeroing in on a bond issue, have to carefully consider the following points and then make a decision.

**Cash Management:** Unlike syndicated loans that allow drawdown and amortization of funds or Euronotes programs offering considerable flexibility; bond issues do not offer these facilities to the issuer. They are characterized by immediate drawdown and bullet redemptions. Hence, the issuer has to carefully analyze the requirements and accordingly take decision to issue bonds.

**Usage of Resources Raised:** Issuers must regard the utilization of resources raised by bond issue, and accordingly deploy the resources as soon as possible. As bid rates are lower than offer rates, issuers who seek to deposit idle funds may face losses on account of interest rate differentials and unnecessarily create interest rate burden. Hence, funds raised must be carefully deployed.

**Redemption Pressures:** Issuers of bonds have to redeem their bonds after the expiry of bond issue period. For that they need to plan very carefully to avoid cash flow problems. Large sums of money are required to redeem the bonds and if it is in foreign currency, it involves considerable foreign exchange exposure.

**Managing Liquidity:** The issuer should have an excellent treasury management set-up to manage liquidity. A close monitoring of the markets and appropriate choice of investment avenues can take care of the redemption pressures in a smooth manner otherwise a sinking fund provision has to be created to cover redemption pressures.

In view of the above mentioned peculiar features, the issuer has to take the decision of issuance of bonds after careful evaluation of all parameters connected with the issue of bonds. The bond issuance method is preferable generally to raise finances for long-term project financing. If the needs are for medium- to short-term then other avenues like syndicated credits, Euronotes should be exploited.

Once a decision for issuance of bonds is made, it calls for issuers to analyze various aspects like selection of markets, choice of currency, quantum of funds to be raised, etc. However, it must be remembered that bonds are an attractive option to raise large quantities of external finances on a long-term basis. Hence, considering the various aspects discussed above, the issuer has to take a prudent decision. Any hasty decision unmindful of the consequences may land the issuer in a financial mess.

## From the Investors' Point of View

A wide variety of investors invest in bond issues. They include large number of individual investors, institutions, sovereign entities, central banks, supra-nationals, MNCs, insurance companies, investment trusts and pension funds. These investors invest in a wide array of bonds in different markets around the world. All these investors have different requirements and expectations out of their investments. For instance individual investors may get attracted to yields, safety and for portfolio considerations. Similarly, supra-nationals and central banks may access these markets for managing and financing trade deficits or to invest their surplus monies. Hence, each different entity has different expectations out of the market and invests money in these bonds to realize the desired goals. If we look into the investors' aims and expectations we find the following aspects to be of common importance to all investors in the international bond markets:

**Currency of Denomination:** As bonds are of long-term, investors have to keep track of the exchange rate behavior and the yields available on bonds. The nature of currency in which bonds are denominated can also influence the yields. Hence, investors have to invest only in those bonds, which are denominated in widely accepted and traded currencies like dollar, euros etc.

**Maturity Profile:** The maturity profile of the bonds also plays an important role in the investment portfolio of the investors. For example, pension funds and investment trusts have to provide regular returns to their investors. Hence, they ensure regularity of income instead of capital gains from the investments. Basically, investors have to assess their fund requirements and accordingly invest in the suitable bond instruments.

**Credit Quality of Issuer:** The credibility of the issuer plays an important role in the issuance of bonds. If investors invest in highly rated bonds then they can easily get their bonds redeemed on time. However, if investors invest in low rated bond issues lured by higher returns, then chances are, they may be left holding paper bonds without any value at the time of redemption. Hence, care has to be taken by investors to invest in good quality bond issues only and not get attracted by high returns (high risk) as some bond issues promise.

**Liquidity in Secondary Markets:** If the bonds don't have enough liquidity in the secondary markets, there is a possibility of investors' funds getting locked up and their chances of portfolio management and selection can become a bit difficult. Hence, investment has to be made in those bonds, which have fair chances of providing enough liquidity in the markets.

The recent innovations in the market like swaps, options, and futures also aid the investors in managing their portfolios by offering restructuring facilities and helping them manage their portfolios in a prudent manner. Thus, investors have to carefully analyze the bond issues keeping in view their requirements and should invest in bonds in a prudent manner.

# CREDIT RATING OF BONDS

A credit rating is an independent assessment of the creditworthiness of a bond (note or any security of indebtedness) by a credit rating agency. It measures the probability of the timely repayment of principal and interest of a bond. Generally, a higher credit rating would lead to a more favorable effect on the marketability of a bond. The credit rating symbols (long-term) are generally assigned with "triple A" as the highest and "triple B" (or Baa) as the lowest in investment grade (See below for definition of rating grades). Anything below triple B is commonly known as a "junk bond."

## Rating Definitions – Investment Grades

**AAA (Aaa):** Bonds rated AAA have the highest ratings assigned by rating agencies. They carry the smallest degree of investment risk. Issuer's capacity to pay interest and principal is extremely strong.

**AA (Aa):** Bonds rated AA are judged to be of high quality by all standards. They differ from the highest rated (AAA) bonds only by a small degree. The issuer's capacity to pay interest and principal is very strong.

**A:** Bonds rated A have strong capacity to pay interest and repay principal although they are somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than bonds in higher rated categories.

**BBB (Baa):** Bonds rated (BBB) are considered medium grade obligations. They are neither highly protected nor poorly secured. Interest payments and principal security appear adequate for the present but certain protective elements may be lacking or unreliable over a length of time. These bonds lack outstanding important characteristics and have speculative characteristics as well.

+ / – / 1, 2, 3: Relative standing within a rating category.

**International Credit Rating Practices:** All over the world, the rating process for the Euro-bonds is similar and is based on practices established by the internationally known credit rating agencies. Fitch IBCA, Moody's and Standard & Poor's are the three international agencies, which provide credit rating analysis globally.

## The Elements Involved in Determining a Credit Rating

The bonds are rated considering the economic factors, debt/issue structure, financial factors, and management/structural factors.

**Economic Factors:** The following economic factors of a country are considered for rating the bonds issued in that country:

- Evaluation of historical and current economic factors,
- Economic diversity,
- Response to business cycles,
- Economic restructuring, and
- Assessing the quality of life in the given area.

**Debt/Issue Structure:** The capital structure of the firm issuing the bond is considered. Capital can come from debt or equity sources. Business-specific factors tend to drive the capital structure decision. Increased leverage promises more Return On Equity (ROE) as firms are restructured and earnings get a higher priority than, for example, market share and revenue growth. However, it can also lead to a downward drift in the firm's credit rating and possibly higher rating volatility. The following factors are also taken into account:

- Economic feasibility and need for project,
- Length of bond's maturity, short-term debt financing,
- Pledged security and other bondholder protections, and
- Futuristic outlook capital improvement plan.

**Financial Factors:** The firm's financial strengths and weaknesses are assessed while rating the bonds. Bonds of a firm having a strong finance base are rated highly. On the other hand the bonds of a firm having a weak finance base are rated low. The debt servicing capacity of a firm is mainly assessed. Therefore, the following factors are keenly observed:

- Sufficient resources accumulated to meet unforeseen contingencies and liquidity requirements.
- Ongoing operations are financed with recurring revenues.
- Prudent investment of cash balances.
- Ability to meet expenditures within the economic base.

**Management/Structural Factors:** The following structural factors are considered:

- Organization of government and management,
- Taxes and tax limits, and
- Clear delineation of financial and budgetary responsibilities.

## Mechanics of Rating Bonds

The rating process begins with an application to the rating agencies by the issuer or its agent either via a telephone call or in writing. The rating request is usually made several weeks before the issuance of the bonds to allow time for the rating agencies to perform their review and analysis. Generally, the following documentations are provided to the rating agencies as soon as possible:

- The preliminary official statement;
- Latest audited and un-audited financial statements;
- The latest budget information, including economic assumptions and trends;
- Capital outlay plans;
- The bond counsel opinion addressing the authority and tax-exempt status of the bond issuance;
- All legal documents relating to the security for the bonds; and
- Any other documents that may pertain to the bond issuance as requested by the rating agencies.

Following this, a meeting is set-up at the office of the rating agency or the issuer to assess the creditworthiness. The credit analyst prepares a municipal credit report, which discusses key analytical factors. The credit analyst presents credit for a "sign-off" with the senior analyst and makes a recommendation for rating. The credit analyst makes a presentation before a rating committee comprising of senior analysts. Finally, the rating is released to the issuer, thereafter to a wire service, followed by a publication of full credit report.

## SUMMARY

- The issuance of bonds is thus a universally employed technique, in both the domestic and international markets, of both the developed and developing countries, regardless of the prevalent economic situation in the economy concerned.
- The importance of this route is also unlikely to diminish in the future, if one goes by past experience in this regard. Finance managers throughout the world would thus be required to comprehend this technique with all its manifestations in order to use it effectively in their operations.

# Appendix I

## Outline of Offering Circular

1. The cover page of the circular describes the offering of bonds along with broad terms, namely, the coupon rate and issue price, the date of offering and redemption, and the fact that the listing is sought on one or more stock exchanges (London, Luxembourg or Singapore). The cover page also contains the names of the lead manager and the members of the syndicate team.
2. **Details of terms and conditions:** Form and denominations of certificates, title to bonds, transfer of bonds, status of bonds, negative pledge, interest calculations and payments, redemption, purchase and cancellation of bonds, payments arrangements, taxation, events of default, meetings of bondholders, trustees and trust deed, notices governing law and jurisdiction, use of proceeds.
3. **The issuer:** Textual description, history, status in the industry, business outlook, management and employees, capitalization and annual report details (summary of profit and loss accounts and balance sheets, auditors reports).
4. Description of guarantor and details of guarantee agreement (if applicable).
5. Status of governmental and/or central bank approvals, as applicable in the country concerned.
6. **Subscription and sale of bonds:** Details of understanding between lead manager and the issuer regarding subscription to bond issues, handling of allotments and restrictions on sale of bonds.
7. **Miscellaneous Information:** Auditors certification (as required), details of legal counsels whose opinions are being obtained, details of clearing arrangements (Euroclear and cedel).
8. **The last page:** Names and addresses of the issuer, trustees, paying agents, legal advisors, auditors, listing agents.

# Appendix II

## Outline of a Subscription Agreement

**Usual Recitals:** Names of parties indicated-issuer states that it proposes to issue bonds of a specified denomination at a specified coupon rate and issue price, having a defined maturity.

**Procuring Subscription:** The lead managers and co-managers agree to procure subscription to the issue of bonds under reference. The underwriting commitment of the management group as regards subscription is joint and several.

**Selling Group Agreement:** Details of selling arrangements and selling commissions defined.

**Conditions Precedent to Drawdown:** Closing date and terms of payments indicated on completion of various formalities prior to the closure of the bond issue.

**Paying Agency Agreement:** Names of paying agents fixed and agreement drafted specifying terms and fees of paying agents.

**Trust Deed:** A reference to the trust deed indicating names of trustees with functions and rights defined.

**Fees and Commissions:** Issuer agrees to pay front-end fees comprising management fee and underwriting commissions.

**Out-of-pocket Expenses:** Issuer agrees to reimburse the lead manager and co-managers for all out-of-pocket expenses incurred, usually subject to a ceiling.

**Extel Cards:** Issuer states that the Extel cards are complete and accurate to a ceiling.

**Financial Statements:** Issuer states that its financial statements are in conformity with the generally accepted accounting principles and that they give a true and fair view of the financial position of the issuer.

**Listing:** Issuer states that it will arrange listing of bonds at an agreed stock exchange(s) and pay for such listing.

**Terms of Indemnification:** Issuer states that it will indemnify managers for damages arising on account of misrepresentations or breach of warranties.

**Termination of Agreements:** Conditions under which, the agreement can be terminated by the managers to the issue are specified.

**Notices, Governing Law and Jurisdiction:** Usual references to the notices (how and to whom), governing law and jurisdiction of specified courts.

## Appendix III

### *Summary of Documents Required for Listing on Major Stock Exchanges

| Item | Luxembourg | London |
|---|---|---|
| 1. Preliminary prospectus (Listing particulars) | 25 copies | 4 copies |
| 2. Final prospectus (listing particulars) | 70 copies to be with listing agent before the business day preceding first listing | 4 copies, one of which to be signed by officials(s) of issuer/guarantor. At least 25 copies to be sent to company announcement office |
| 3. Execution copy of each final prospectus from guarantor and issuer | 1 copy from each | NR |
| 4. Copies of borrower's bylaws and articles of incorporation | 5 certified copies of issuers and 3 of the guarantors, statutory documents to be with listing agents 3 working days before listing | 1 copy |
| 5. Copies of annual reports for last two years | 3 copies from issuer and guarantor | 1 copy from issuer and guarantor |
| 6. Copies of underwriting contracts | NR | 1 copy of letter offering the securities and a distribution statement, in a form issued by the quotations department and 1 executed copy |
| 7. Copies of fiscal and paying agency agreement (trust deed), subscription agreement, agent bank agreement, warrant agreement. | 3 confirmed copies | 1 executed copy |
| 8. Resolution of borrower/guarantor authorizing issue/guarantee and necessary government and other consents. | 3 certified copies | 1 certified copy |
| 9. Listing application or letter of undertaking | 1 copy addressed to the societe de la Bourse de Luxembourg | 1 copy signed by official(s) of issuers and 1 copy signed by partner or director of sponsor |
| 10. Expert opinions | NR | 1 copy of the opinion of experts referred to in the listing particulars (if any) and 1 copy of their consent |
| 11. Specimen bond certificates | 3 specimens | 1 copy of any temporary document of title and any definitive documents of title. |
| 12. Statistical cards (for issue and issuer) | NR | 1 certified copy together with formal or other notice submitted for approval |

NR: Not Required

*Extracted from Fisher, F.G., Euro-bonds, P 110.

## Chapter VIII

# Issuance of Euronotes

**After reading this chapter, you will be conversant with:**

- Genesis of Euronotes
- Features of Euronotes
- Euronote Applications
- Euromarket Trends
- Note Issuance Facilities
- Euronotes from the Parties Perspective

## GENESIS OF EURONOTES

Towards the end of the 1990s, the Euromarkets presented a versatile and innovative funding instrument referred to as "Euronotes". The concept of Euronotes is different from the age-old concept of bond issue and syndicated eurocredits. Euronotes are usually of short-term maturity, mostly of three-to-six months duration.

Borrowers and bankers underwent considerable metamorphosis before they adapted the instrument to suit a particular financial transaction thereby forging the growth of the Euronotes market.

The early seventies saw a market where the role of banks, as fund providers, diminishing with the emphasis shifting to securitization of the funds (raised by the corporates and banks). Vigoros efforts were made to develop a market in line with USA's Commercial Paper (CP) market. But banks played an important role during the seventies and were busy in their lending operations and hence did not show any interest in the development of the CP market.

But the situation changed during the eighties with a series of developments, which made banks reconsider their approach towards their lending operations. Moreover, the international banks were faced with the problem of country defaults and so they resisted against taking on further exposures. Also the uneven developmental phases in the developing countries resulted in a subdued demand for external finance. The surpluses from the OPEC countries were the main source of supply during the1970s. But a fall in the surpluses from these countries in the 1980s necessitated the development of marketable instruments for the competent handling of the shortfall in the surpluses. All these events resulted in a shift in market focus in the developed countries and prompted the development of "securitization". Also certain macroeconomic imbalances due to rising inflation and volatile exchange and interest rates facilitated the process of securitization. Apart from the fund-raising techniques, risk-management tools were also structured to suit the needs of market players.

The improved communication systems, ably assisted by computer applications facilitated a number of innovations during the late eighties. The innovations were aimed at hedging and transferring risks, enhancing liquidity and generating fresh debt and equity finances. The major focus of Securitization was to obtain a wider support from the primary investors in various markets and to go to beyond interbank market to arrange the funds.

## FEATURES OF EURONOTES

The emergence of Euronotes has provided the much-needed thrust to the international financial markets, which were reeling under the pressure of defaults by countries. They have given a new life to the markets with their innovative and built-in flexibility features, which proved to be a great hit among the investors. Euronotes have emerged as tools to hedge interest rates and foreign exchange exposures and have a promising future.

- Euronotes allow for short-term maturities and provide investors with liquidity because of their wide spread sale in the secondary markets.
- Even though the maturity of these instruments is short, the borrowers have the advantage of raising funds for medium to long-term periods, i.e., up to five to seven years and place the instruments in the market with financial intermediaries to pledge, underwrite, or to market them.
- Since the instrument is of short-term in nature, it is marketed with ease and the price it can command is usually few basis points above or below Libor rates.
- The documentation formalities are minimal.

- The flexible nature of these instruments allows them to be tailored to suit the specific requirements of the borrowers.
- Euronotes require minimal administrative maintenance and provide resource diversification opportunity.

## EURONOTE APPLICATIONS

The above mentioned features have helped the Euromarkets absorb these instruments well in the recent times. Investors who were wary of taking medium-to long-term positions in Eurobonds find these instruments attractive because of their shorter maturities. The concept of Euronotes was whole heartedly accepted by, the commercial banks, merchant banks and corporate borrowers.

With the market absorbing the concept of Euronotes well there have been a lot of innovations resulting in a spate of new instruments.

### Commercial Paper

The Commercial Paper had been successfully tried in Euromarkets and is referred to as Euro Commercial Paper. The concept of Commercial Paper emerged in the US markets and eventually spread to other parts of the world. The structure and features of the CP that existed in the US markets were retained with minor variations and introduced in Euro markets. The most important factor of the Euro Commercial Paper (ECP) is that they are not underwritten and their maturity mostly ranges from three to six-months. Even though the maturities are short, the overall funding program could be for medium- to long-term. However, the borrower has the advantage of extending the program once it has proven to be successful and he can plan ECPs in a series of tranches to match their funding needs throughout the life of the program.

### Note Issuance Facilities (NIFs)

A variation of ECPs is the Note Issuance Facilities (NIFs). Lately they are the most favorable among the investors. Like ECPs, NIFs are issued mostly for three month or six month duration with an aim to issue and establish the funding program for a medium to long range period; and unlike ECPs, these instruments are underwritten.

The flexible nature of the Euronotes is well exploited by the banks and merchant banks who have released their own versions of NIFs with different acronyms, but it must be noted that these various acronyms though meant to stand for different instruments, convey basically the common funding instrument, which serves the purpose of raising financial resources from the market. Different terms were introduced to indicate the various marketing and placement techniques adopted for the issue of NIFs.

The different instruments issued by the investment banks as part of NIFs are:

- *Revolving Underwriting Facilities (RUFs*): The main distinguishing factor is the placement of the instrument. Unlike NIFs, which are based on a tender panel, RUFs were associated with sole placing agency arrangement and the mode of raising finances is same as that of NIFs. Barring differences in placement, these indicate a standard structure of raising finances and are used as generic terms.
- *Transferable Revolving Underwriting Facilities (TRUFs)*: Euromarkets provide the advantage of transferring the Euromarket commitments to other parties by following certain procedures. To facilitate these transfers, a formally structured transferable revolving underwriting facility (TRUFs) was introduced which facilitated the process of underwriting by banks and placing agents.

- *Multiple Option Facility*: Under this NIFs program, a borrower is allowed to draw funds in a number of ways as part of overall NIFs, and these options are referred to as 'short-term advances and swing line credits'. Under 'short-term advances' a borrower has an option to use his NIF to borrow funds in a number of currencies, whereas 'swing line credit' takes care of funding needs in an eventuality of delay in issue of NIFs.
- *Borrower's Option for Notes and Underwritten Standby (BONUS)*: Under this arrangement, a borrower has the option to use the cheapest or most convenient route to raise the required finances. In addition to the choice between CP and NIFs, a standby facility is designed for an identical amount under a single deal and integrates both short- and medium-term financing benefit of corporate entities.

### Medium-term Notes (MTNs)

Another variation of NIFs is Medium-term note facility, which is structured as non-underwritten facility and issued for maturities of more than one year with several tranches depending upon the preferred maturities. Commercial paper allows the borrower to issue a series of notes with regard to overall program whereas, MTNs allow the funding under, one issue upfront.

The various forms of Euronotes have made a significant progress in the market and investors show interest in them because of their varied features. Thus, Euronotes are poised to play a major role in the Euromarkets.

## EUROMARKET TRENDS

### Commercial Paper

The concept of commercial paper has quite an old history of more than hundred years in the USA. As a short-term funding route it has been replicated in the European markets in the early eighties giving birth to a new market called the European Commercial Paper (ECP) market, which has emerged as an extension of the Euronotes.

The European commercial paper became a big hit with investors when it was introduced in the European markets and proved to be a boon to the corporates who were hard pressed to raise financial resources for a short tenure. Added to the growth, certain US regulations like interest equalization tax and stipulations of the Office of Direct Foreign Investment (ODFI), made it obligatory for the US corporations to fund their overseas activities with overseas funding. These restrictions have forced US corporates trading in Europe to access the Euro Commercial Paper (ECP) market to raise dollar finances in the Euro markets and this has accelerated the momentum of the market.

### Definition

The Bank for International Settlements (BIS) defines commercial paper as "a short-term unsecured promise to repay a fixed amount representing borrowed funds plus interest on a certain future date and at a specified place". It can also be described as a promissory Eurodollar bearer note issued by a corporate, which is issued in two ways. One way is to issue at a discount price and the other way is to issue an interest-bearing note.

### Features

The Euro Commercial Paper has the following features:

- The underlying CPs issued by the issuer are unsecured in nature and generally stand on the credibility and creditworthiness of the borrower.
- These are issued in the form of promissory notes which are negotiable.
- ECP does not have any underwriting support and the issue has no underwriting obligation from the dealer who places them in the market.

- ECP instruments are priced with reference to Libor and with a margin varying over or under Libor rate according to the credit standing of the issuer, the issuer's reputation in the market and its maturity period.
- Technically speaking, ECP can be issued with maturities ranging between seven and 365 days, however the usual practice in the industry is to raise the finances between 90 and 180 days.

## Participants in the EC

The Euronote program in the form of NIFs is mainly borrower-driven, whereas ECP has emerged as an investor-driven technique. A typical ECP issue involves four parties namely (a) Dealer (b) Issuing and paying agent (c) Issuer and (d) Investors.

**Dealer:** The first entity in the chain, the dealer initiates the deal on receipt of an order from the issuer and undertakes the pricing and arranges a sale to the investors. The dealer also takes care of the delivery of notes and payment of proceeds to the issuer of notes.

**Issuing and Paying Agent:** This role is usually played by commercial banks that take the responsibility of looking into receipt and payment of funds and also extend their role to handle notes of the investors who invested in the ECPs.

**Issuer:** ECPs are usually accessed by, sophisticated borrowers such as sovereign bodies, multinationals, financial institutions, supranationals and the like. By and large the major issuers of these instruments belong to the OECD group.

**Investors:** Investors in these instruments are major fund managers, insurance companies, bank trust departments and corporate entities.

## Issuance of ECP

Commercial paper markets around the world follow different practices to issue CPs. In US, markets follow typically two ways of placing the instrument in the market: *dealer-placed method* and *directly placed method.*

*Dealer-placed method* is usually used by non-financial entities, which have a seasonal demand for funds, entrust the task of raising funds to the dealers. This system is advised if the issuer is keen on effective placement of paper and would like to have control over supply and price of the instrument issued.

*Directly placed method* is usually preferred by large financial bodies which are in constant need of funds and place their CP directly in the market and have a very large sales force to market their issue effectively. This method eliminates the presence of middle men like dealers in the issue and gives a free hand to the issuer to directly go into the market.

## Procedure to Issue CP

The procedure is a relatively simple and straight forward means to raise finance. CP can be issued either in an interest-bearing form or in a discounted form with the interest built into the issue itself. The issuer of CP initiates the program by selecting a *dealer* and an *issuing and paying agent* (whose functions were discussed in the previous section). Unlike in the US markets, it is not mandatory to get credit ratings for the issue, but it is preferred to seek ratings for a successful issue. The first step to be followed involves filing of various documents. These documents include (a) information memorandum, (b) dealer agreement, (c) issuing and paying agency agreement and (d) the actual notes to be issued to investors. The above mentioned documents are not part of a standard procedure. Hence, filing of additional documents becomes necessary to meet the various

practices of the domestic market regulator, whenever needed. The additional documents are as stated below:

- *Information memorandum:* This document is filed by the issuer and basically contains the operational and financial information regarding the issuer. The main purpose of this document is to inform the investors about the financial soundness of the issuer and help decide whether to invest in the issue or not. Once filled, the issuer has to update it to reflect the latest information.
- *Dealer agreement:* This document is executed by the issuer and spells out the terms of issue and arrangements to market the paper.
- *Issuing and paying agency agreement:* This agreement is executed between the issuer and the bank, which is designated to handle notes and the payments. The agreement mentions the various details like, the issue and delivery of notes, payments to parties involved in the issue etc.
- *Actual notes:* These are issued by, the issuer to the bank, which act like issuing and paying agent, who in turn hand over the ECP notes to the investors of the instrument.

The ECP market is organized in a very professional manner and has four clearing houses to clear the papers as and when they mature and disburse the payments to investors immediately. The clearing houses are: Cedel (Luxembourg), Euroclear (Brussels), First Chicago (London) and Chase Manhattan (London). The main function of these clearing houses is to promote sales by means of a book entry, effect payments through electronic transfers and minimize physical delivery of paper and cash remittances. Off late ECP market has seen many dealers in the market and in view of the cut-throat competition among dealers, this has resulted in low margins among dealers and has turned out to be less lucrative in nature.

## CP Markets around the World

In view of its universal appeal, the instrument has attracted quite a lot of developing countries to raise finances. Once introduced in the European markets, these instruments attracted quite a lot of players and even other countries like Canada, the UK, Australia, France, Japan, etc., introduced CPs in their domestic markets, which were positively accepted by the investors.

Japan braced the CP markets in 1987 and introduced four kinds of CPs in the markets: domestic and Euroyen CP for residents, Samurai and Euroyen CP for the non-residents. Apart from Euroyen CP, which is not open to the Japanese public, the other three are presently allowed by, the Japanese MOF, the apex body, which regulates the market.

In the UK, the Bank of England approved the CP program for the first time in the year 1986. However, there was no visible progress in the market because of its strict regulatory environment.

In France, the market opened in the year 1985. The initial stages showed no visible signs of development and the market remained sluggish for two years from 1986 to 1987. However, conditions changed a bit later and the markets rebounded. Similarly, these markets opened up in Canada and Australia in the mid-eighties registering a mixed growth in their market development.

# NOTE ISSUANCE FACILITIES (NIFs)

These instruments are a classic blend of capital market and syndicated loan operations. According to Bank for International Settlement (BIS), “A NIF is a medium-term legally binding commitment under which the borrower can issue short-term paper in his own name, but where underwriting banks are committed either to purchase any notes which the borrower is unable to sell, or to provide standing credit”.

These instruments provide the issuer a guarantee that the issue will be underwritten in case of non-subscription and the underwriters namely, banks, etc. provide funding support for five to seven years. To the investors these represent a short-term instrument for say, three to six months period and enable them either to continue in the scheme or unload their positions from time to time.

## History of NIFs

NIFs first made their appearance in the year 1981 with the much-publicized deal of the New Zealand government for US $0.5bn. In 1982, 'revolving underwriting facility' (RUF) was issued under which the lead manager acted as the sole placing agent. The year 1983 saw yet another significant development in the form of floatation of *tender panel* concept for the placement of notes. The following year witnessed the concept of *continuous tender panel CTP* and *Issuer-set margin ISM* concepts. These constant innovations in NIF's instruments provided the much-needed boost to the markets and from year 1985, there was a rapid growth in underwriting and issuance of these instruments in the market.

## Documentation Procedures

NIFs program begins with a contractual arrangement between the parties and accordingly a program is devised and the issue comes into the market through a series of steps, as stated below:

*Step 1:* The issuer of NIFs instructs the facility agent or lead arranger to issue Euronotes as per the placement strategy agreed between them.

*Step 2:* After receiving the orders, the facility agent arranges to sell Euronotes through agreed placement agents like sole placing agent, multiple agents, etc., and the procedure usually takes, three-to-ten days.

*Step 3:* Once the issue is open and investors invest into the note issue, it is the underwriters' responsibility to take the unsubscribed portion after the expiry of the selling period.

*Step 4:* The bids from underwriters are aggregated and the placing agent allots the unsold paper on pro rata basis of their commitments.

## Investors, Issuers and Underwriters

The main investors of NIFs are from the OECD group of countries and off late investors from the third world countries have also started accessing these markets. The main issuers of NIFs are Governments, Quasi-Government bodies, Industrial corporations, banks and holding banks. NIFs have the facility to underwrite the un-subscribed portion of the issue. The role of underwriting is performed usually by commercial banks and saving banks. Investment companies and insurance companies also play a role in the underwriting exercise but to a small extent.

## Important Documentation in NIFs

The issue of NIFs requires the following important documentation:

i. *Underwriting agreement:* This document specifies the basic understanding between the parties regarding the fees payable on underwriting of the issue.

ii. *Issuing and paying agency agreement:* This agreement spells out the procedures to handle notes and payments; fee denotes the amount paid for structuring, pricing, syndication and documentation of the NIFs.

iii. *Dealership or tender panel agreements:* This gives the details about the tender panels and their way of execution of the mandate and specifies the rates at which it is executed.

iv. *Information Memorandum:* The issuer's operational and financial performance details are complied so that investors fully understand the entity they are going to invest in.

v. The notes in bearer form are issued to the investors.

vi. Additional documentation is required when, NIF programs are supported by, swing lines, short-term bank advances or bankers' acceptances.

The above mentioned documents more or less refer to the standard documentation formalities followed in the industry, in essence, as that in a syndicated Euro credit. Once the NIFs are issued to the investors, the settlement can be effected through physical delivery or through clearing houses.

The NIFs are unique in their flexible nature and in addition to this nature new innovations appear in the market from time to time and prove very helpful in placing in the market. These innovations have boosted the growth of NIFs market, and in the process, all issuers of notes, placing agents and underwriters have benefited a lot.

## Different Types of NIF Placements

**Sole Placing Agent:** One of the first significant developments regarding the issue of Euronotes was the introduction of the *sole placing agent*. Under this system, the facility agent or lead arranger who acts as the sole placing agent issues notes to the investors and the Euronotes issued under this arrangement are called as "Revolving Underwriting Facilities" (RUFs). Under this system, the sole placing agent places the notes for subscription to investors and allots the notes to investors according to the issue size and ensures that the investors subscribe them. The main advantage in this system is that, since it involves only one agent to manage the show, the agent gets all the independence to allot the notes to a diverse spectrum of investors and issue guidelines and modify them according to market conditions. These are sold at a pre set yield, which may vary according to the market and commend interest price, which may be above or below Libor rates. The banks can only step in once the subscription is closed to general investors and they need to underwrite the unsubscribed portion, which the sole agent allots them on a pro rata basis.

But this system was criticized upon because the yields set by the agent often may not reflect the true market yields.

**Tender Panel System:** Under this system, the facility agent draws a group of banks and forms a tender panel, which is then requested to quote the prices and the size of the notes they are going to apply for. This procedure of calling bids starts five or seven days before the issue date of notes. The agent scrutinizes the bids received from the members of the panel and allotments are made based on the bids made by the banks. This system has the advantage of getting the most aggressive bids from the banks as they will bid after considering the market conditions and the agent can expect some good attractive bids which can prove to be a good bargain. The tender panel method is expected to be cost-competitive as only aggressive and lowest-price bidders would be in a position to acquire adequate allocations for eventual placement in the market. Thus the issuer benefits as he shares the cost savings thus effected and the tender panel helps the issuer in achieving greater breadth in the note placement.

Some experts say that this system has some inherent disadvantages like non-commitment of banks and high bidding rates that affect the uniformity in the bids. Apart from these drawbacks, it is pointed out that investors are in a position to arbitrage between different prices of panel members.

**Continuous Tender Panel (CTP):** A slight variation in the Tender Panel was introduced in the Euronotes market in 1984, in the form of "Continuous Tender Panel" (CTP), and this represents a mediocre approach between the sole placing agency and the multiple placing-agency. The main feature of this system is that, the underwriters constitute a continuous tender panel for each drawdown of Euronotes. The members are entitled to purchase notes, subject to their availability during the offer period itself.

The CTP mechanism works thus the notes are opened for subscription at a rate called 'Strike Offering Yield' (SOY), which is actually yield to maturity on the notes under review. This modification in the placement of NIFs was brought about to widen the interest of 'issuers' and 'underwriters' in the market and make it more competitive. SOY benefits the 'issuer' because he gets the advantage of fixing the rate of notes at a market prevailing rate.

**Issuer Set Margin (ISM):** Under this method, the issuer sets a margin over Libor, above which the paper would not be issued in respect of each tranche. The concept of ISM emerged to tackle some problems in the issue of NIFs. The placing agencies that participate in the placement are required to take up the notes at a price not exceeding the ISM fixed by the issuer.

**Bonus:** This system allows maximum flexibility to borrowers, and the borrower is given the option to use the cheapest or most convenient route to raise finances. They have the option to choose from CPs, NIFs, and a standby facility is outlined for an identical amount under a single deal. They have access to a range of methods to raise finances like uncommitted note placement facility, revolving credit facility and a swing line credit to give same day funding. But as bonus involves accessing various instruments, it involves a complex documentation and hence a plethora of legal, regulatory and tax issues have to be taken care of. In view of these complexities, professionals and high-quality borrowers have access to these instruments.

## Capital Adequacy Factor and NIFs

Note issuance facility has seen the increasing presence of banks in underwriting these instruments. Many banks showed a great deal of interest in this aspect because they had a flexibility to show underwriting obligation as off-balance sheet items, just like how they did in Eurobond issues. This single factor has seen droves of banks clamoring for underwriting NIFs. Obviously this has led to fierce competition among banks to get a mandate. This considerably reduced their spreads and underwriting fees and led to banks' exposure to credit risks and disrupted the system. A stage came when the banks started indulging in soul searching. At this juncture, BIS stepped in and recommended steps to achieve capital adequacy on a comprehensive basis. Earlier the usage of gearing ratio (unweighted total of on-balance sheet items/capital) was only used, but BIS stressed the need to adopt risk-asset ratio (which takes into consideration off-balance items as well) as an appropriate measure to indicate sound bank financials.

This approach was widely appreciated and the Bank of England (BOE) initiated the action to bring NIF obligations under the purview of on-balance sheet items in determining capital adequacy of the banks. Thus the steps taken by BIS, BOE made an impact on the underwriting obligation of NIFs by banks and improved, their balance sheet and presented a more realistic picture. Thus the market witnessed less competition in underwriting the NIFs in the market.

## Medium-Term Notes

Even though the entry of the Medium Term Notes into the market was a bit late, it has grown by leaps and bounds. It made its first appearance in the USA in late seventies and later in the European markets in the late eighties. In simple words MTNs are viewed as long-term, non-underwritten and fixed interest rate sources to raise finances by the issuers.

MTNs are defined as "continuously issued fixed interest securities, which have a maturity of over one year and enable the issuer to offer Euronotes for different maturities ranging from over one-year to the desired level of the maturity by the issuer". The biggest advantage to the issuer is that he need not worry about the falling or rising interest rates because, these are fixed rate funding arrangements as the price for each preferred maturity is fixed upfront at the time of their launch.

Of late certain variations have started appearing in the market. Floating rate MTNs and extended underwriting facilities have started appearing in several MTN issues. The popularity of the European MTNs is mainly because of three features (a) convenient to issue (b) Flexible in nature (c) Cost-effective mode of raising finances.

## Documentation and Currencies

The documentation formalities are less onerous and similar in nature to that of other Euronotes documentation procedures. The main documents involved are (a) Subscription agreements (b) Paying agency agreements (c) Trust deed and (d) Usual offering circular. The most famous currency in use for issue of Euro medium-term notes E-MTNs is dollar denominated. Other currency issues have also started appearing in the market, the important one being Deutche mark denominated E-MTNs. The ECU has also started appearing in the market. The important issuers of E-MTNs are banks, sovereigns and supranationals from the OECD group of countries. However, this instrument has not attracted the attention of corporate borrowers.

## Introduction of G-MTNS

The latest instruments from the stable of MTNs, which started appearing on the Global arena from Euromarkets, were the Global Medium-Term Notes (G-MTNs). These were launched with an aim to tap both the Euro and the US markets under the same program. Under this issue, the issuers of different credit ratings raise finance by placing the instrument with both retail and institutional investors like banks, mutual funds, etc. The fees charged by the placement agency usually range between 1% and 1.5% of the issue. It is not easy to issue this instrument in the market. It requires issuers of very high caliber and sophisticated borrowers like supranationals and sovereigns with a global presence in every continent to tap simultaneously various markets. Issue of G-MTNs involves selection of top rated merchant bankers and placement agencies. The main advantages with this instrument are its flexible nature, speed, efficiency and enhanced investor base.

# EURONOTES FROM THE PARTIES PERSPECTIVE

Euronotes offer many advantages compared to other instruments like Syndicated bank credits and Eurobond issues. Their attraction lies in their cost effectiveness and flexible nature; not all instruments can possess such features. The main players like issuers, investors and intermediaries play a crucial role in the working of these instruments. It requires the participants to better comprehend the market nuances, because it helps them successfully place more issues in the market.

## Issuers

The main advantages of Euronotes viewed from the angle of issuers are:

- Euronotes can be raised in a very cost effective manner, because the issuer needs to pay spreads over Libor in their short-term paper issues. If the issuer has good credentials then he could manage the issue at sub-libor levels.
- Professional issuers can achieve matching fund raising, instead of drawing down all the funding either in a lump sum as done in case of bond issues, or by way of drawdown over a short period as in syndicated loans.
- The administrative and financial arrangements are not required for redeem liabilities underlying Euronotes in view of the continuous roll over of funding.
- Execution of Euronotes programs and documentation formalities are certainly less cumbersome compared to other Euro issues like SECs and Eurobonds.

Even though Euronotes offer so many advantages, it fails when it comes to the matter of certain issues like:

- Euronotes do not serve the purpose of raising funds for certain long-term needs, because this source can be used mainly to garner funds for short-term periods only.
- When the markets are dry and subdued, raising funds by this route may prove to be very difficult. The creditworthiness of the issuer plays quite an important role in raising finances in this market.

## Investors

Investors, without whom the market cannot survive, play a crucial role in determining the success of the Euronotes. Usually the investors in the market are professionals and active institutional investors who would like to put their pie in these instruments because they offer the following various advantages:

- Euronotes help to obtain returns higher than those comparable to other short-term avenues available in the international markets.
- Euronotes offer the advantage of unloading holdings at short and frequent intervals.
- Euronotes help investors to achieve better asset management by capitalizing on arbitrage opportunities because investors always have the free exit route available at a very short period of time, which can be exploited to a maximum extent.

## Drawbacks

- The returns generated by these short-term Euronotes are less than those on long-term bonds and investors who have liquid funds in hand show very little interest in these instruments and preferably go for long-term maturities.
- Investors have to do some groundwork before investing in these instruments. They need to analyze the issuer's profiles, market conditions and accordingly take positions.
- Market analysis shows that investors prefer long-term bond issues of higher quality issuers.

## Intermediaries

Intermediaries like banks and merchant bankers play an important role in the success of issue as well as their devolvement.

Euronotes offer some advantages to the intermediaries:

- Compared to bond issues or syndicates loans, intermediaries cannot be exposed to medium- to long-term borrowers.
- Enables banks to retain their business share coming in as underwriters or arrangers of Euronotes.

However, intermediaries need to take care of certain aspects like:

- Before underwriting, issuers have to be selected very carefully after due diligence and research.
- BIS capital adequacy guidelines have to be borne in mind before they undertake any underwriting obligation.

Thus we see that Euronotes have certain attractive and unattractive features for the parties involved in the deals. It becomes onerous on the part of issue advisors and intermediaries and also issuers to keep in mind the peculiar requirements, preferences and corporate objectives. They have to come up with more innovative instruments to meet the growing demands of the borrowers and play a proactive role in the development of the market.

## SUMMARY

- The market developments during the last couple of decades have proved that innovative and practical concepts get accepted by players in the open and competitive markets like the Eurocurrency market or other foreign markets. It takes time to test and perfect a financing technique, devise appropriate documentation procedures and ascertain the response of investors, issuers and market intermediaries.
- The developments during the latter half of the 1990s indicate that Euronote issuance, as a technique of raising and managing finances, has been accepted by the global capital markets. Barring variations in the share of specific structures of Euronote programs, the overall importance of Euronotes is likely to continue in the markets with the market participants being called upon to understand this complex technique for effective international financial management.

## Chapter IX

# An Introduction to Equipment Leasing

**After reading this chapter, you will be conversant with:**

- Concept and Classification
- Advantages of Leasing
- Can Leasing be Disadvantageous?

## CONCEPT AND CLASSIFICATION

Conceptually an 'equipment lease' (lease hereafter) can be defined as a contractual arrangement where the owner (lessor) of an equipment transfers the right to use the equipment to the user (lessee) for an agreed period of time in return for rental. At the end of the lease period the asset reverts back to the lessor unless there is a provision for the renewal of contract or there is a provision for transfer of ownership to the lessee.

Operationally, an equipment lease transaction comes into existence as follows: The lessee identifies the exact specification of the equipment, its supplier, price, terms of guarantee and warranty, delivery period, etc., and approaches the leasing company – a financial intermediary – with a lease proposal. The negotiation between the lessor and the lessee revolves around the duration of the lease, lease rentals, terms and conditions relating to usage, maintenance and insurance of the equipment, etc. Once the negotiations culminate into a lease contract, the lessor buys the equipment and delivers it to the lessee. The lessee usually bears the costs of insuring and maintaining the asset.

Given the nature of an equipment lease transaction, the natural question is: How does it differ from the other asset financing plans say hire purchase or conditional sales agreement? The fundamental difference between a lease transaction and other asset financing plans like the hire purchase is that a lease contract cannot provide for a transfer of ownership from the lessor to the lessee whereas the other asset based financing plans carry this feature. Consequently, the tax and the accounting aspects of lease transactions are different from that of the other financing plans.

An equipment lease transaction can vary along the following dimensions; extent to which the risks and reward[1] of ownership are transferred, number of parties to the transaction, domiciles of the equipment manufacturer, the lessor and the lessee, etc. Based on these variations, the following classifications have been developed:

i. Finance Lease and Operating Lease.

ii. Sale and Leaseback and Direct Lease.

iii. Single Investor Lease and Leveraged Lease.

iv. Domestic Lease and International Lease.

**Table 1: Comparative Benefits of Lease Structures**

| Country | Nature | NPV Benefit |
|---|---|---|
| US | Pickle-dole | 5 percent |
| Japanese | Narrow Body Aircraft | 5 percent |
| Japanese | Wide Body Aircraft | 7 percent |
| Japanese | Rail Equipment | 3 percent |
| German | Aircraft | 8 percent |
| German | Rail Equipment | 4 percent |
| French | – | 6 percent |
| Canadian | Leasehold | 8 percent |

*Source: Financial Services, ICFAI-Vision Series, Finance, 2001, page 20.*

1 Risk in this context refers to the possibility of loss arising on account of under utilization or technological obsolescence of the equipment. Reward refers to the incremental net cash flows that can be generated from (i) the usage of the equipment over its economic life; and (ii) the realization of the anticipated residual value on expiry of the economic life.

## Finance Lease and Operating Lease

The distinction between a finance lease and an operating lease is of fundamental importance in the financial evaluation and accounting of leases. The distinction is based on the extent to which the risks and rewards of ownership are transferred from the lessor to the lessee.

### FINANCE LEASE

A lease is defined as finance lease if it transfers a substantial part of the risks and rewards associated with ownership from the lessor to the lessee. According to the International Accounting Standards Committee (IASC), there is a transfer of a substantial part of the ownership-related risks and rewards if:

i. The lease transfers ownership of the asset to the lessee by the end of the lease term; (or)

ii. The lessee has the option to purchase the asset at a price which is expected to be sufficiently lower than the fair market value at the date the option becomes exercisable and, at the inception of the lease, it is reasonably certain that the option will be exercised; (or)

iii. The lease term is for a major part of the useful life[2] of the asset. The title may or may not eventually be transferred; (or)

iv. The present value of the minimum lease payments is greater than or substantially equal to the fair market value of the asset at the inception of the lease. The title may or may not eventually be transferred.

The aforesaid criteria are largely based on the criteria evolved by the Financial Accounting Standards Board (FASB) of USA. The FASB has in fact defined certain cut-off points for criteria (iii) and (iv). According to the FASB definition of a finance lease, if the lease term exceeds 75 percent of the useful life of the asset or if the present value of the minimum lease payments exceeds 90 percent of the fair market value of the asset at the inception of the lease, the lease will be classified as a 'finance lease'.

For the purpose of determining the present value, the discount rate to be used by the lessor will be the rate of interest implicit in the lease and the discount rate to be used by the lessee will be its incremental borrowing rate.

### Illustration 1

Montari Industrial Corporation (MIC) has recently leased equipment costing $400 million on the following terms:

* Lease Term : 5 years
* Lease Rentals : $300/$1,000 per annum.

The incremental borrowing rate for MIC is 18% p.a. Can the transaction be classified as a finance lease if the useful life of the equipments is six years? ten years?

### Solution

a. i. Lease Term : 5years

ii. Estimated Useful Life : 6 years

(i) as a percentage of (ii) : 83.3

Since the lease term exceeds 75 percent of the estimated useful life of the equipments, the transaction must be classified as a finance lease.

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2 How do we define 'useful life' (or 'economic life')? Usually the useful life is taken as the minimum of the following: (a) Physical Life, (b) Technological Life, and (c) Product-Market Life. Physical Life refers to the period for which the equipment can perform the function for which it has been acquired. Technological Life refers to the period for which the equipment is not rendered technologically obsolete. Product Market Life refers to the period for which the product line in which the equipment is used enjoys a satisfactory market.

b. i. Lease Term : 5 years

ii. Estimated Useful Life : 10 years

(i) as a percentage of (ii) : 50

The third condition specified by the FASB for classifying a lease as a 'finance lease' is not fulfilled.

iii. Present value of minimum lease payments

= ($400 mn x 0.3) x PVIFA $_{(18,5)}$

= $120 mn x 3.127

= $375.24 mn

iv. Fair market value at the time of inception = $400 mn

(iii) as a percentage of (iv) : 94

The fourth condition specified by the FASB is fulfilled and therefore, the transaction must be classified as a finance lease.

In a finance lease, the lessee is responsible for repair, maintenance and insurance of the asset. The lessee also undertakes a "hell or high water" obligation to pay rental regardless of the condition or the suitability of the asset. A finance lease which operates over the entire economic life of the equipment is called a "full pay out lease".

## OPERATING LEASE

The International Accounting Standards Committee defines an Operating Lease as "any lease other than a finance lease".

An Operating Lease has the following characteristics:

a. The lease term is significantly less than the economic life of the equipment.

b. The lessee enjoys the right to terminate the lease at short notice without any significant penalty.

c. The lessor usually provides the operating know-how, suppliers, the related services and undertakes the responsibility of insuring and maintaining the equipment in which case an operating lease is called a 'wet lease'. An operating lease where the lessee bears the costs of insuring and maintaining the leased equipment is called a 'dry lease'.

From the features of an operating lease, it is evident that this form of a lease does not shift the equipment-related business and technological risks from the lessor to the lessee. The lessor structuring an operating lease transaction has to depend upon multiple leases or on the realization of a substantial resale value (on expiry of the first lease) to recover the investment cost plus a reasonable rate of return thereon. Therefore, specializing in operating leases calls for an indepth knowledge of the equipments per se and the secondary (resale) market for such equipments. Of course the prerequisite is the existence of a resale market. Given the fact that the resale market for most of the used capital equipments in our country lacks breadth, operating leases are not in popular use. But then this form of lease ideally suits the requirements of firms operating in sun rise industries which are characterized by a high degree of technological risk.

**Box 1: Types of Leases**

Based on the extent to which the risks and rewards incidental to the ownership of the equipment lie with the lessor, leases can be divided into two types. Operating lease and Financial lease.

1. **Operating Lease:** This has the following features:
   a. It is a short-term lease, the lease period being less than the economic life of the asset.
   b. The lease is not fully amortized.
   c. The lease is usually canceled at short notice.
   d. The lessor is responsible for the insurance and maintenance of the asset.
   e. The lessor bears the risk of economic and functional obsolescence of the asset.
2. **Financial Lease:** A financial lease (capital lease) as opposed to an operating lease is a long-term non-cancelable lease. The salient features of a finance lease are as follows:
   a. The lease is non-cancelable for a specified period usually referred to as the primary period. The primary lease period is between 5 and 8 years.
   b. The leases fully amortized over the primary lease period.
   c. The lessee is responsible for the maintenance of the asset and for insuring it against accidental damage or loss.
   d. The risk of obsolescence is shifted from the lessor to the lessee.

*Source: Financial Services, ICFAI-Vision Series, Finance, 2001, page 15.*

## Sale and Leaseback and Direct Lease

### SALE AND LEASEBACK

In a sale and leaseback transaction, the owner of an equipment sells it to a leasing company which in turn leases it back to the erstwhile owner (the lessee). The 'leaseback' arrangement in this transaction can be in the form of a 'finance lease' or an 'operating lease'.

A classic example of this type of transaction is the sale and leaseback of safe deposit vaults resorted to by commercial banks[3]……. Under this arrangement, the bank sells the safe deposit vaults in its custody to a leasing company at a market price which is substantially higher than the book value.

The leasing company offers these lockers on a long-term lease to the bank. The advantages to the bank are:

a. It is able to unlock its investment in a low income yielding asset.
b. It is able to enjoy the uninterrupted use of the lockers (which can be leased to its customers).
c. It can invest the sale proceeds (which are not subject to the reserve ratio requirements) in high income yielding commercial loans.

In general, the 'sale and leaseback' arrangement is a readily available source of funds for financing the expansion and diversification programs of a firm. In case where capital investments in the past have been funded by high cost short-term debt, the sale and lease back transaction provides an opportunity to substitute the short-term debt by medium-term finance (assuming that the leaseback arrangement is a finance lease).

From the leasing company's angle a sale and leaseback transaction poses certain problems. First, it is difficult to establish a fair market value of the asset being acquired because the secondary market for the asset may not exist; even if it exists, it may lack breadth. Second, the Income Tax Authorities can disallow the claim for depreciation on the fair market value if they perceive the fair market value as not being 'fair'.

3 Kamath K.V. *et al.*, "The Principles and Practice of Leasing", (Lease Asia, England).

## DIRECT LEASE

A direct lease can be defined as any lease transaction which is not a "sale and leaseback" transaction. In other words, in a direct lease, the lessee and the owner are two different entities. A direct lease can be of two types: Bipartite Lease and Tripartite Lease.

**Box 2: Growing Significance of Big Ticket Leasing**

Big ticket leasing involves infrastructure project leasing. The financing of projects through leasing has become attractive in the recent past with increasing participation of banks and other financial institutions. The advantages of leasing to the project managers may be the readily available finance to fund the project undertaken. The firm is not exposed to additional debt by resorting to leasing. Its debt position remains the same so that its borrowing capacity is unaffected overlooking the off-balance sheet items. The funding institution benefits from the low risk involved because the underlying assets in an infrastructure lease serve as a collateral. The lessor can structure the lease payments to suit the cash flows of the lessee to avoid uncertainty about his lease rental payments. But the financial institutions should take up such deals with caution so that they do not end up in a high risk funding in the name of innovation.

*Source: Financial Services, ICFAI-Vision Series, Finance, 2001, page 12.*

**Box 3: CIBC Wood Gundy's Big Ticket Lease Strategy**

Globally, there has been an increasing trend towards banks getting into big ticket lease origination and arranging. This has meant increased competition for private lease arrangers like Fieldstone and Babcock and Brown. No company, perhaps, embodies this shifting paradigm better than CIBC Wood Gundy, a subsidiary of the Canadian Imperial Bank of Commerce. It has made big ticket lease transactions its core focus area. CIBC is attempting to increase its penetration of the large North American market by expanding the product offering and delivery network. The aim of the CIBC leasing division is to staff up selectively to strengthen the origination effort. So far the focus has been on arranging leveraged leases for clients in the airline, rail, energy, automotive, mining and forestry business worldwide. CIBC acts both as a lessee and a lessor advisor. It also has the muscle to take a large amount of equity on its balance sheet if it wishes.

In addition to accessing its equity base in the US, CIBC also has a network in Canada for raising funds. But the two core advantages in favor of CIBC are the accent on long-term client relationships and provision of one stop solutions. The advantage that CIBC has over pure advise shops is that if the client needs advisory services, the same can be offered and if he needs a cheque even that can be arranged, example, If CIBC is visiting an airline and they are interested in fuel hedging, as opposed to leasing, all that they need to do is to call up their financial products division.

In fact, CIBC sees an important role for big ticket leasing even when the lease versus buy analysis is unfavorable for the lease. Where people are making profits and paying taxes from a lease versus buy standpoint, buying appears more attractive on a stand-alone basis if you just consider the economics. But, for example, in the airline business, people use fleet planning as a major determinant to decide whether to lease or buy. Another issue is that a lot of people prefer leasing because it provides them with alternative sources of capital. Even if the base case economics suggest buy, there may be a situation where an airline wants to use the capital that is available from a leasing company versus a lender.

CIBC, in fact, epitomizes the subtle shift in global big ticket leasing from private arrangers to big banks, because of their liability to provide one stop

solutions and absorb global risk. Quite logical, since the international spread of operations, transactions in a multitude of currencies and markets, all provide them a natural hedge against the vagaries of country specific tax laws and currency values. And that is precisely where banking conglomerates like CIBC have a distinct advantage in the future.

*Source: Financial Services, ICFAI-Vision Series, Finance, 2001, page 19.*

## Bipartite Lease and Tripartite Lease

### BIPARTITE LEASE

In a bipartite lease, there are two parties to the transaction – the equipment supplier cum-lessor and the lessee. The bipartite lease is typically structured as an operating lease with in-built facilities like upgradation of the equipment (Upgrade Lease) or additions to the original equipment configuration. The lessor undertakes to maintain the equipment and even replaces the equipment that is in need of major repair with a similar equipment in working condition (Swap Lease). Of course, all these add-ons to the basic lease arrangement are possible only if the lessor happens to be a manufacturer or a dealer in the class of equipments covered by the lease.

### TRIPARTITE LEASE

A tripartite lease on the other hand is a transaction involving three different parties – the equipment supplier, the lessor, and the lessee. Most of the equipment lease transactions fall under this category. An innovative variant of the tripartite lease is the sales-aid lease where the equipment supplier catalyzes the lease transaction. In other words, he arranges for lease finance for a prospective customer who is short on liquidity. Sales-aid leasing can take one of the following forms:

a. The equipment supplier can provide a reference about the customer to the leasing company.

b. The equipment supplier can negotiate the terms of the lease with the customer and complete the necessary paper work on behalf of the leasing company.

c. The supplier can write the lease on his own account and discount the lease receivables with the designated leasing company.

The effect of the transaction is that the leasing company owns the equipment and obtains an assignment of the lease rental. By and large, sales-aid lease is supported by a recourse to the supplier in the event of default by the lessee. The recourse can be in the form of the supplier offering to buyback the equipment from the lessor in the event of default by the lessee or in the form of providing a guarantee on behalf of the lessee.

## Single Investor Lease and Leveraged Lease

This classification is also based on the number of parties to the lease transaction. In a single investor lease transaction there are only two parties to the transaction – the lessor and the lessee in contrast to a leveraged lease transaction where there are three parties to the transaction – the lessor (equity investor), the lender and the lessee.

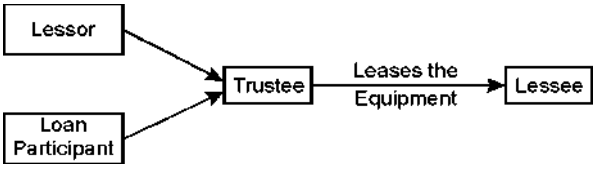
### SINGLE INVESTOR LEASE

In a single investor lease transaction, the leasing company (lessor) funds the entire investment by raising an appropriate mix of debt and equity. The important point to be noted is that the debt funds raised by the leasing company are without recourse to the lessee. Put differently, the lender cannot demand payment from the lessee in the event of the leasing company defaulting on its debt-servicing obligations.

## LEVERAGED LEASE

In a leveraged lease transaction, the leasing company (called equity investor) invests in the equipments by borrowing a large chunk of the investment with full recourse to the lessee and without any recourse to it. The lender (also called the loan participant) obtains an assignment of the lease and the rentals to be paid by the lessee, and a first mortgage on the leased asset. The transaction is routed through a trustee who looks after the interests of the lender and lessor. On receiving the rentals from the lessee, the trustee remits the debt-service component of the rental to the loan participant and the balance to the lessor. A schematic representation of the transaction is provided in Figure 1.

**Figure 1: Leveraged Lease Transaction**




### Illustration 2

Innovative Financial Services has recently structured a leveraged lease transaction involving an investment cost of $80 million with itself as the equity participant and Standard Chartered Bank as the loan participant funding the investment in the ratio of 1:4. The loan carries a rate of interest of 18% p.a. and is to be repaid in five equated annual installments. If the required rate of return (gross yield) of Innovative Financial Services is 22% p.a. Calculate the Annual Lease Rental to be charged.

### Solution

Loan Amount = 0.8 x 80 = $64 million

Equity Contribution = $16 million

$$\text{Equated annual installment} = \frac{64}{PVIFA_{(18,5)}}$$

$$= \frac{64}{3.127}$$

= $20.47 million

Denote the annual lease rental as Y.

Annual cash inflow to Innovative Financial Services = (Y – 20.47)

Given that Innovative Financial Services requires a rate of return of 22% p.a. it follows that,

$(Y - 20.47) \times PVIFA_{(22,5)} = 0.2 \times 80 = 16$

i.e., $2.864 (Y - 20.47) = 16$

i.e., $2.864 Y = 74.63$

i.e., $Y = \$26.06$ million

In terms of the standard quote, the lease rental works out to be

$325.75/$1,000/p.a (= 26.06 x $1,000/80)

Like any other lease transaction, a leveraged lease transaction entitles the lessor to claim tax shields on depreciation and other capital allowances on the entire investment cost despite the fact that a substantial part of the investment cost has been funded with non-recourse debt. Therefore, the return on equity (defined as Profit After Tax divided by Net worth) tends to be high. From the lessee's angle, the effective rate of interest implied by the lease transaction turns out to be less than that of a straight loan because the lessor passes on a portion of the tax benefits to the lessee in the form of lower rental payments. Leveraged lease packages are usually structured for leasing investment-intensive assets like aircraft, ships, etc.

## Domestic Lease vs. International Lease

A lease transaction is classified as a domestic lease if all parties to the transaction – the equipment supplier, the lessor and the lessee – are domiciled in the same country. On the other hand, if these parties are domiciled in different countries, the transaction is classified as an international lease transaction.

The distinction between a domestic lease transaction and an international lease transaction is important for two reasons. First, packaging an international lease transaction calls for,

a. An understanding of the political and economic climate; and

b. A knowledge of the tax and the regulatory framework governing these transactions in the countries concerned.

Second, as the payments to the supplier and the lease payments are denominated in different currencies, the economics of the transaction from the points of view of both the lessor and the lessee tend to be affected by the variations in the relevant exchange rates. In short, International Lease Transactions unlike Domestic Lease Transactions are affected by two additional sources of risk – Country Risk and Currency Risk.

International Lease Transactions can be further sub-classified into two groups, Import Lease Transactions, and Cross-Border Lease Transactions. In an import lease transaction, the lessor and the lessee are domiciled in the same country, but the equipment supplier is located in a different country. The lessor imports the equipment and leases it to the lessee. On the other hand, in a cross-border lease transaction, the lessor and the lessee are domiciled in different countries. The domicile of the supplier is immaterial.

The question that arises is: Given the complexities and additional risks characterizing international leases in general and cross-border leases in particular, why should lessors and lessees go in for cross-border leasing? The proponents of cross-border leasing advance the following reasons:

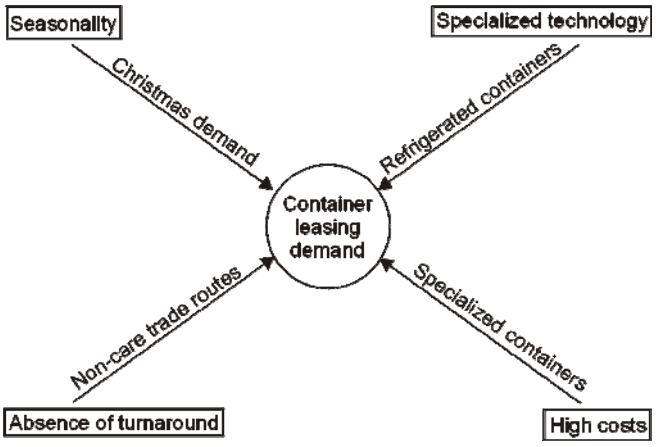
i. The lease can be so structured as to obtain maximum tax benefits by taking advantage of the tax concessions and incentives offered by the tax laws of the different countries. The end result is that the lease can be priced on terms favorable to both the lessor and the lessee.

ii. Cross-border leases offer funding on a long-term basis at fixed rates of interest which may not be available to the lessee in its country.

iii. The lessor has access to cross-country equipment markets for disposing off the leased equipments. Hence, it is prepared to take a higher residual value exposure and in the process prices the lease on terms favorable to the lessee.

**Box 4: Nova Scotia Unlimco Structure**

**Figure: Demand Determinants of Container Leasing**



Despite an embryonic leasing market in Canada, the rare Canadian Unlimco (Unlimited Liability Company) structure is attracting increasing interest from some top tier end users. Canadian Pacific railroad has used an Unlimco while Canadian National and Newcourt Credit are seriously looking at it. In a cross- border leasing structure, the lessor in a Canadian leveraged lease to a resident Canadian lessee could be structured as a Nova Scotia Unlimco with its members being one or more US equity investors. For US tax purposes, the Canadian lease would be effectively imported into the US, if the US members treat the Unlimco as a foreign partnership. The advantage is that the lease payments made by the Canadian lessee to the Canadian lessor (Unlimco) will not attract Canadian withholding tax. Putting together such deals has been simplified on the US side of the border with the IRS regulations simplifying the entry classification rules. These rules will enable entities to elect for treatment either as a partnership or as a corporation. There was some concern that under the new rules the Unlimcos would not be able to elect partnership treatment. However, when the final rules are expected, it is anticipated, that Unlimcos will be partnership eligible.

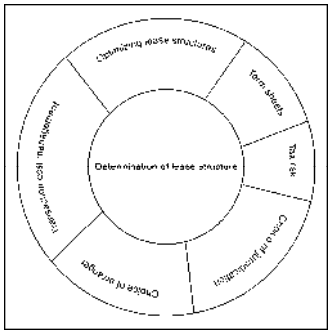
*Source: Financial Services, ICFAI-Vision Series, Finance, 2001, page 25.*

Of these reasons, the reason concerning the tax implications merits a more detailed discussion. In countries where a finance lease transaction is treated as a genuine lease transaction the lessor claims the tax shields on depreciation and the other capital allowances associated with the investment. The lessee claims the lease rentals as a tax deductible expense. But in some countries (USA, for instance) a finance lease is treated as a sale and the lessee is allowed to claim the tax shield on the investment-related depreciation and other capital allowances. A cross-border lease takes advantage of the laws of two countries, one in which the lessor can claim the investment-related tax shields and the other in which the lessee can claim these tax shields thereby enhancing the financial advantage of leasing to both the lessor and the lessee.

**Box 5: International Big Ticket Leasing Audit**

**Choosing a Jurisdiction:** Financial criteria should guide the choice of jurisdiction but this should be balanced against other issues. The UK markets, for example, offers NPV benefits to the tune of 7 to 22 percent. But the catch is that UK lessors refuse to take the tax risk. Lessees can never be sure of the benefits until the lease ends. Benefits can alter substantially and eventually turn into losses if tax risks materialize in the form of new legislation. Conversely, deals from emerging markets result in more management time being invested in protracted negotiations and higher costs, because the players viz., lawyers, arrangers and lessors are not as sophisticated as in mature markets. Risk of failure in such transactions is much higher. Austrian, Japanese and Swedish structures offer only limited benefits for railway transactions and need careful study before jumping into a deal. Double dip leasing may boost lease benefits but is costly and time consuming and the benefits cannot be assured. And tax authorities in some jurisdictions are more inclined to grant rulings in favor of tax lease structures when it benefits the country's industry.

**Choosing the Arranger:** The role of the arranger should necessarily be partisan i.e., supporting the lessee against other transacting parties. The lessee – advisor should not be a lessee-cum-lessor advisor. Though fees are mutually negotiable they should depend on the structure. Fees should not be high for straight forward deals like Straightforward Pickle Dole, leasehold leases and Japanese Leverage lease whereas it can be high for more innovative transactions like double dips, multiple dips or emerging market deals. Again fees can be a fixed percentage or success fees can be carved into the total fees. Like most other fund syndications, larger organizations are much more difficult to convince to work at lower rates compared to smaller boutiques.




**Managing Transaction Costs:** The cost of putting together a deal are substantial and directly influence the net present value. The Anglo-Saxon type of documentation mostly used in lease transaction is much more complex and time consuming than the continental type. To control cots, lessees usually ask the lessors advocates to cap their fees so that costs avoid getting out of hand. Lenders fees and margins can be minimized through bidding procedures. This is more difficult with appraisers because the number of appraisers are limited and most investors stick to a particular appraiser. Trustee and bank fees are mostly fixed and lessees try to spread it over higher transaction volumes or by closing the lease in different tranches over time so as to minimize the impact on the first tranche. There are some basic accepted axioms pertaining to transaction costs:

- If the transaction is not closed due to the lessor's failure, the lessor shall bear all the transaction costs incurred.
- If the transaction is not closed due to the lessee's failure, the lessee shall bear all the transaction costs incurred.
- If the transaction is not closed due to the election of the lessee because tax changes reduce the benefits below a certain level, then the lessee bears the transaction costs.
- If the transaction is not closed for any other reason like illegality or increased cost, each party will bear the transaction cost related to itself.

**Optimizing Lease Structures:** Lease economics are influenced by the cost of debt and guarantee fees if real financing is involved. For those leases that involve commercial banks, the usual bidding procedure applies in order to minimize the cost of funds. In a fully defeased structure (See: Defeasance structure for power leases) the intermediation fees of the intervening bank has also to be included. For structures where defeasance is needed to hedge the deal, the choice of the defeasance instrument influences the upfront benefits of the transaction.

The following approach is sometimes used. No direct investment in zero coupons in the currency of the purchase option, but adding swaps to the underlying investment, the maturity of which match the purchase option date. In doing so, the lessee pays to the swap counterparty all coupons and the principal at maturity and receives from it an amount equal to the purchase option. Less than triple-A investments could be acceptable. Working this way, the benefits on transactions can be enhanced substantially without increasing the credit risk of the defeasance to an unacceptable level.

**Term Sheets:** Before starting full documentation, it is necessary to negotiate and agree upon the term sheet. Certain key considerations need to be looked at while agreeing on the term sheet. Firstly, it is necessary to ensure the bankruptcy proof of the proposed structure, the securities to be put in place to secure recuperate title to the equipment and equity/lessor transfer restrictions. Secondly, it is necessary to clearly lay down when the lessor and lessee are in default and the magnitude of termination values (See Table Termination Values (TV) under different scenarios).

| Table: Termination Values (TV) Under Different Scenarios | | | |
|---|---|---|---|
| Case | High TV | Medium TV | Low TV |
| Loss of equipment | Yes | | |
| Lessee default | Yes | | |
| Illegality arising from lessee act or no act | Yes | | |
| Marginal cost increase outside lessor country | Yes | | |
| Negative tax impact of unauthorized sub-lease | Yes | | |
| Lessor default | | | Yes |
| Illegality within lessor's country after equity funding | | Yes | |
| Illegality arising from lessor act or non-act | | | Yes |
| Material cost increase within lessor country after closing | | Yes | |
| Material cost arising from lessor act or non-act | | | Yes |
| Negative tax impact of double dip with approval of lessor | | Yes | |
| Illegality in lessors country before equity funding | | Yes | |
| Material cost increase within lessors country before equity funding | | Yes | |

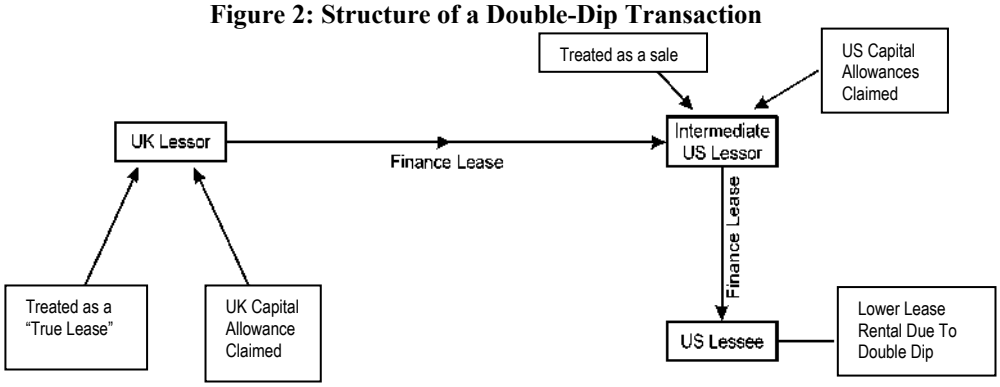
**Tax Risk:** Lastly, it is necessary to agree upon the tax risk in advance. Most lessees insist on the lessor assuming the tax risk implicit in the transaction. In the US, this is no longer an issue because the lessor takes the full tax risk. But in the UK, the lessors usually prefer to avoid taking the tax risk. They consider the lease as a loan, a condition of which is that the lessee takes all the consequences of any change in tax laws.

Double dip lease deals can give rise to a major headache, viz. the potential for disqualification of one of the leases by the tax authorities because of the existence of the other. The termination value is the issue here. And at the end of the day, it all boils down to negotiations between the two transacting parties.

*Source: Financial Services, ICFAI-Vision Series, Finance, 2001, pages 26-29.*

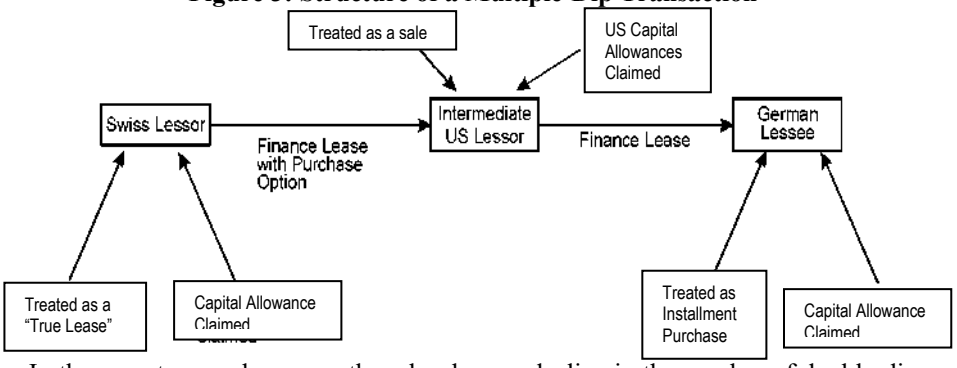
For example, consider a lease transaction in which a UK based lessor leases an equipment to a US based lessee under a finance lease arrangement. Under the tax laws of the UK, the lease will be treated as a 'true' lease and the UK lessor will claim the investment-related tax shields. Under the tax laws of the USA, the same transaction will be treated as a "sale" and the lessee will be allowed to claim the tax shields. This dual tax benefit (referred to as the "double-dip" advantage) reduces the cost of the lease to the lessee without affecting the return to the lessor. If the lessee is not in a position to absorb these tax shields, the UK lessor can write a lease with an intermediate lessor in USA who can absorb these tax shields and in turn sub-lease the asset to the lessee at a lower lease rental. A schematic representation of this transaction is provided in Figure 2.

**Figure 2: Structure of a Double-Dip Transaction**



A natural sequel to the "double-dip" transaction is the "multiple-dip" transaction in which more than two countries are involved. For example, consider a Switzerland based lessor writing a lease with a purchase option with a UK based intermediate lessor and this lessor writing a lease that resembles an installment sale with a lessee in Germany. The multiple tax benefits associated with this transaction is schematically presented in Figure 3.

**Figure 3: Structure of a Multiple-Dip Transaction**




In the recent years, however, there has been a decline in the number of double-dip and multiple-dip lease transaction.[4] This decline is largely on account of introduction of a number of deterrents including the phasing out of initial capital allowances in the UK restrictions on tax-oriented leases to the non-residents in the US as introduced by the Deficit Reduction Act of 1984 and the abolition of the Investment Tax Credit in the US implemented with the Tax Reform Act of 1986.

**Box 6: Growing Significance of Big Ticket Leasing**

Leasing has become a popular option for infrastructure projects because it suits both bankers and project managers. For banks, the advantages of leasing to infrastructure projects is the relatively lower risk. This is because assets in infrastructure leases are secured and lease deals are usually structured in such a way that the possibility of bad debts is lower.

For project managers, leasing also translates into lower fixed and financing costs. A major component of fixed costs, especially in thermal and gas-based power projects and transport projects like the railways, is basically equipment. Leased equipment reduces overall costs and helps save on subsequent depreciation and interest on funds the company would have otherwise borrowed. The other major advantage of lease financing in projects is that no standard debt equity ratios are applicable, since lease finance does not qualify either as borrowing or equity. This means that companies can operate on a relatively low equity base.

Financiers actually own the assets, and this gives them the advantage of a tax-saving depreciation shelter.

*Source: Investment Banking and Financial Services Book of Readings, August 2001, page 113.*

## ADVANTAGES OF LEASING

Having seen the different types of lease arrangements, let us try to identify the principal reasons for leasing. The proponents of equipment leasing offer the following reasons:

### Flexibility

Equipment leasing is a flexible financing arrangement in sense that the lease rentals can be structured in a manner that squares with the cash flow pattern anticipated by the lessee. If the lessee expects a constant net cash flow stream from the project in which the leased assets are employed, the lease rentals can be evenly

4 Nagano, Osamu, "The Development of International Framework for Cross-Border Leasing", – World Leasing Year Book 1990 (A Euromoney Publication).

spread over the lease term. On the other hand, if the lessee anticipates a steadily increasing stream of cash flows, the lease rentals can be stepped up gradually. If the lease finance is availed for a project with a gestation period, the lease rentals can be structured with a deferment period.

The various ways of structuring lease rentals is explained through the following illustration:

**Illustration 3**

Sunrise Leasing has made available the following data:

| | | |
|---|---|---|
| * | Investment Cost | : $40 million |
| * | Pre-tax required Rate of Return | : 20% p.a. |
| * | Primary Lease Period | : 5 years |
| * | Residual Value after the Primary Period | : Nil |

It seeks your help in determining the annual lease rentals to be charged under the following rental structures:

a. Equated
b. Stepped (Assume an increase of 15% p.a.)
c. Ballooned (Assume an annual rental of $4 million for years one through four)
d. Deferred (Assume a deferment period of two years).

**Solution**

a. Denote Y as the annual rental to be charged. The value of Y can be obtained from the equation:

$Y \times PVIFA_{(20,5)} = \$40 \text{ million}$

$Y = \frac{40}{2,991} = \$13.37 \text{ million}$

b. Denote Y as the annual rental to be charged in year 1. The value of Y can be obtained from the equation:

$Y \times PVIF_{(20,1)} + (1.15)Y \times PVIF_{(20,2)} + (1.15)^2Y \times PVIF_{(20,3)} + (1.15)^3Y \times PVIF_{(20,4)} + (1.15)^4Y \times PVIF_{(20,5)} = 40$

i.e., $0.833Y + [(1.15)Y \times 0.694] + [(1.15)^2Y \times 0.579] + [(1.15)^3Y \times 0.482] + [(1.15)^4Y \times 0.402] = \$40 \text{ million}$

i.e., $3.833Y = \$40 \text{ million}$

i.e., $Y = \$10.44 \text{ million}.$

The lease rentals to be charged over the lease term will be:

($ in million)

| Year | Lease Rental |
|---|---|
| 1 | 10.44 |
| 2 | 12.01 |
| 3 | 13.81 |
| 4 | 15.88 |
| 5 | 18.26 |

c. Denote Y as the ballooned payment to be made in year 5. The value of Y can be obtained from the equation:

$[4 \times PVIFA_{(20,4)} + Y \times PVIF_{(20,5)}] = \$40 \text{ million}$

i.e., $10.36 + 0.402Y = \$40 \text{ million}$

i.e., $0.402Y = \$40 \text{ million}$

or $Y = \$73.73 \text{ million}$

d. Denote Y as the equated rental to be charged between years 3 through 5. The value of Y can be obtained from the equation:

$Y \times PVIF_{(20,3)} + Y \times PVIF_{(20,4)} + Y \times PVIF_{(20,5)} = \$40$ million

i.e., $(0.579 + 0.482 + 0.402)\ Y = \$40$ million

i.e., $1.463Y = \$40$ million

i.e., $Y = \$27.34$ million

This flexibility associated with structuring is not found in the debt-servicing pattern associated with a conventional loan. To illustrate, the debt servicing burden associated with a loan of $40 million (carrying interest @20% p.a.) repayable in five equal annual installments will be as follows:

($ in million)

| Year | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Loan amount outstanding at the beginning | 40 | 32.0 | 24.0 | 16.0 | 8.0 |
| Principal repaid | 8 | 8.0 | 8.0 | 8.0 | 8.0 |
| Interest | 8 | 6.4 | 4.8 | 3.2 | 1.6 |
| Debt services charge | 16 | 14.4 | 12.8 | 11.2 | 9.6 |

## User Oriented Variants

There are several variants of a lease transaction which are designed to meet the specific requirements of the lessee. Examples of such innovative variants are the Upgrade Lease, which helps is hedging the risk of obsolescence or the cross-border lease which reduce the cost of the lease from the lessee's point of view. There are also leases which provide all services related to the usage and maintenance of the asset. For example, in a full service car lease, the lessee pays a predetermined charge for the use of a car or a fleet of cars and he gets the entire spectrum of services ranging from the provision of chauffeurs to break-down maintenance.

## Tax Based Benefits

Leasing makes a lot of financial sense to a firm which has no capacity to absorb the investment-related tax shelters like depreciation. A lessor who can absorb these tax shelters can acquire the assets and lease them to the firm at a lower lease rental. The cross border lease is a classic example of how leasing helps in exploiting multiple tax shelters to the advantage of both the lessor and the lessee. We will be discussing the tax-based advantages of leasing at greater length in the subsequent chapters.

## Less Paper Work and Expeditious Disbursement

Compared to the term loan arrangement, a lease arrangement requires (a) less of paper work to be done by the lessee, and (b) involves a shorter lead time between the date of submitting the proposal and the date of disbursement of funds.

## Convenience

Convenience determines the decision to lease when a firm intends using an asset for a very short period of time. For example, a firm which requires the use of a fleet of cars for a week will find it easier to rent a fleet for a week than to buy it on Monday morning and sell it on Saturday evening. Apart from convenience, it is also a financially sensible proposition because the transaction costs associated with buying and selling like search costs, legal charges, selling commissions, etc., will outweigh the rentals to be paid for the short-term lease.

## Hundred Percent Financing

The proponents of leasing often emphasize this feature of leasing as an advantage not available with the other forms of equipment financing. For example, the Equipment Finance Scheme of IFCI requires a borrower's contribution of 25% of

the equipment cost. Most of the other financing plans including hire purchase call for down payments varying between 15 to 25 percent. While it is true that equipment leasing does not call for as high a margin as other financing schemes, the fact remains that where lease rentals are payable say monthly in advance, the first installment amounts to a down payment.

### Better Utilization of Own Funds

The proponents argue that leasing is a sensible route for acquiring non-income generating assets like air conditioners, office equipments and vehicles. The firm can deploy its own funds in more productive channels.

## CAN LEASING BE DISADVANTAGEOUS?

We discussed several strong reasons in favor of leasing over buying. Does it mean that given a choice between leasing and buying, an asset must be always leased? The answer is 'no'. Some of the short comings of this form of asset-based financing are as follows:

i. Given the fact that most of the equipment lease transactions are structured as finance leases, the flexibility of the lessee to disinvest is seriously undermined. The non-cancelable feature is a serious disadvantage particularly, where, the equipments leased have uncertain technological and/or product-market lives.

ii. Propelled by the dubious advantage of "Off Balance Sheet Financing" or one firm can afford to increase its exposure to leasing beyond reasonable limits. Firms which are highly geared (with a high debt equity ratio) and firms which are subject to a high degree of business risk must be particularly wary about leasing because it reduces the debt capacity of such firms and increases the financial risk.

iii. In a perfectly competitive financial market, the cost of leasing tends to be equal to the costs of other forms of borrowing. Therefore, in this market a borrower (lessee) can afford to be indifferent between the options of leasing and borrowing. But in an imperfect financial market where the tax shields associated with leasing and owning are different, where some long-term interest rates are regulated, etc., the costs of leasing and borrowing can be significantly different. More often than not leasing turns out to be costlier than most forms of borrowing. So the lessee has to necessarily evaluate the costs of leasing and borrowing before choosing between lease or buy.

## SUMMARY

- While leasing has a history spanning over more than 5000 years, equipment leasing with which we are concerned is of a recent origin. It is said that the practice of equipment leasing began when the rail road companies in the USA and Europe resorted to leasing of rail cars and locomotives for expanding their operations. By the mid-sixties, equipment leasing came into popular use in the developed countries. Today equipment leasing is not just confined to leasing of equipments; large infrastructural facilities, power plants and other capital-intensive projects are also leased.
- In concept, an equipment lease is a contractual arrangement under which the owner (lessor) transfers the right to use the equipment to the user (lessee) for an agreed period of time in return for rent. At the end of the lease period the asset reverts back to the lessor.

- The features of an equipment lease transaction can vary along the following dimensions: extent to which risks and rewards of ownership are transferred, number of parties to the transaction, domiciles of the equipment manufacturer, the lessor, and the lessee. Based on these dimensions, the following classifications are possible: (a) Finance Lease and Operating Lease, (b) Sale and Lease and Operating Lease, (c) Single Investor Lease and Leveraged Lease, and (d) Domestic Lease and International Lease.
- Of the aforesaid classifications, the classification in terms of finance lease and operating lease is of fundamental importance in the financial analysis and accounting for leases. The distinction is drawn on the basis of the risks and rewards of ownership transferred from the lessor to the lessee. If a lease transfers a substantial part of the risks and rewards it is classified as a finance lease; otherwise, it is called an operating lease. The Financial Accounting Standards Board (FASB) of the USA was the first professional body to evolve the criteria for this classification and these criteria with some minor modifications have been adopted by the International Accounting Standards Committee (IASC).
- These are various factors which influence the decision to lease. The important ones are: (a) Flexibility, (b) User-Orientation, (c) Tax Based Advantages, (d) Convenience, (e) Expeditious Disbursement of Funds, (f) Hundred Percent Financing, and (g) Better Utilization of Own Funds.
- A lease is often marketed on the strength of a dubious advantage called the "Off-Balance Sheet Financing" which purports that a liability off the balance sheet does not affect the debt capacity of a firm. It must be noted that a finance lease whether on or off the balance sheet affects the borrowing capacity and increases the financial risk.
- There are of course, deterrents to leasing. These deterrents include the restrictive convenants on the usage of the asset, the non-cancelable feature of a finance lease which restricts the flexibility to disinvest, threat to real borrowing capacity and the high cost of lease finance vis-á-vis most forms of borrowing.

## Chapter X

# Legal Aspects of Leasing

**After reading this chapter, you will be conversant with:**

- Bailment and Lease
- Process of Lease Documentation
- Anatomy of a Lease Agreement
- Some Legal Issues

## Introduction

A lease transaction can have a number of variants and can be structured in various ways, thereby giving rise to a number of legal issues. In the absence of a separate legislative framework defining the rights and obligations of the parties to a lease contract, resolving the lease-related legal issues involves scanning a number of allied legislations and court rulings. Of course, this is a job which is best handled by the legal experts. But then the lessor and the lessee must be able to anticipate in the various legal issues that can arise from the lease transaction and ensure that these issues are adequately addressed by the lease document (agreement). For this purpose, it is necessary to have a basic understanding of the legal framework circumscribing lease transactions and an awareness of the key legal issues that have to be sorted out.

This chapter dwells on the legal aspects of equipment lease transactions and is divided into three parts. The first part deals with the salient features of the present legislative framework governing lease transactions. The second part describes the process of lease documentation and the important clauses that are built into a lease agreement. The third part briefly discusses the major legal issues that have to be considered at the time of drafting the lease agreement.

## BAILMENT AND LEASE

Bailment can be defined as, "The delivery of goods by one person to another for some purpose upon a contract that they shall, when the purpose is accomplished, be returned or otherwise disposed off according to the directions of the person delivering them". The person delivering the goods is called "the bailor" (the counterpart of the lessor) and the person taking delivery of the goods is called the "bailee" (the counterpart of the lessee). The reader must note that the delivery of goods as defined here will include both actual and constructive delivery. The obligations of the bailor and the bailee are as follows:

### Obligations of the Bailor

i. The bailor is responsible for putting the goods in the possession of the intended bailee or any person authorized to hold them on his behalf. The bailment does not commence until the goods have been delivered.

ii. The bailor is required to disclose to the bailee, the faults in the goods bailed of which the bailor is aware, and which materially interfere with the use of them or expose the bailee to extraordinary risks.

iii. The bailor is responsible to the bailee for any loss which the bailee sustains because the bailor was not entitled to make the bailment or to receive back the goods.

### Obligations of the Bailee

i. The bailee is bound to take reasonable care of the leased asset. He is liable for his own negligent acts and for those of his employees or agents. However, if the goods are damaged or destroyed through no fault of the bailee then in the absence of a provision to the contrary, the bailee is not liable to indemnify the bailor for the loss.

ii. The bailee has an implied obligation not to act in a manner that is inconsistent with the terms of the agreement. For example, if the bailee uses the asset for a purpose other than the one stated in the agreement, the agreement becomes voidable and the bailor is entitled to have an immediate possession of the goods.

iii. The bailee must return the goods on expiry of the time fixed or when the purpose is accomplished. If the bailee fails to return the goods at the proper time, he can be held liable for any loss, destruction or deterioration of goods from that time.

iv. Without the prior consent of the bailor, the bailee cannot mix the goods received on bailment with his own goods.

In addition to the aforesaid obligations, the following are also deemed to be implied obligations of the bailee and the bailor:

i. The bailee is required to pay the sums specified in the agreement as per the schedule and in the manner laid down in the agreement.

ii. The bailee is obliged to protect the bailor's title to the bailed goods by informing the bailor as soon as possible of any adverse claim of it.

iii. The bailor is required to ensure that the bailee's peaceful possession of the bailed goods during the currency of the agreement is not broken either by himself or by the lawful acts of the third parties.

iv. The bailor is required to ensure that the goods bailed are fit for the purpose for which the bailee is to use them.

Almost all the implied obligations stated above are taken as the implied obligations of the lessor and the lessee under an equipment lease agreement. But then one important implied obligation of the bailor which is expressly negatived by the lease agreement is the lessor's responsibility to ensure that the equipment(s) leased is fit for the purpose for which the lessee is to use it. This is because of the fact that in a typical equipment lease agreement, the lessor is only a financial intermediary whose role is limited to purchasing the equipment from the supplier and delivering it to the lessee. The equipment supplier is identified by the lessee and the equipment specifications and the terms and conditions relating to its performance are negotiated by the lessee.

## PROCESS OF LEASE DOCUMENTATION

The major steps in the process of lease documentation are as follows:

i. The lessee submits a proposal in the format specified by the leasing company. The proposal provides (a) information about the lessee in terms of a brief business history, financial statements for the last three years, projected financial statements for the next 3 to 5 years and data on the existing long-term debt obligations including hire purchase and lease commitments and (b) information about the equipment(s) to be leased, the supplier(s), the place of installation and the purposes for which the equipment will be used.

   The lessee may be required to submit copies of the audited financial statements for the last 3 years along with the proposal form.

ii. If the leasing company is satisfied about the financial feasibility of the investment and the creditworthiness of the lessee, the proposal is approved, and the decision is conveyed to the lessee through a letter of offer. More often than not, the lessee asks for a lease limit or lease line which can be utilized for acquiring a number of assets within an agreed period of time. The letter of offer indicates the sanctioned limit with the accepted terms and conditions. The letter of offer is open for a specified period of time.

iii. The letter of offer is accepted by the lessee by passing a Board resolution which authorizes an officer of the company to sign the agreement. Although the passing of a board resolution is not a statutory requirement, the leasing company usually insists on one so that the contract is not terminated at a later date on the ground that the signatory to the contract had no proper authorization.

iv. The acceptance of the letter of offer culminates in executing the lease agreement. Where the lease facility offered to the lessee is in the form of a lease line, the parties enter into a Master Lease Agreement which is in the nature of an Agreement to Lease – the lessor agrees to transfer on lease equipments in the future subject to the predetermined limit. The Master Lease contains the general terms and conditions (like the lessee's convenants, the lessee's warranties, etc.) governing the leasing facility. As and when

equipment is transferred on lease, the particulars of the equipment, the lease tenure and the rental structure are incorporated in the schedule to the agreement.

v. As we said earlier, in an equipment lease transaction, it is the lessee who selects the equipments and negotiates the terms and conditions of purchase with the equipment supplier. Therefore, it is important to recognize this role of the lessee in the contractual relationship that arises between the equipment supplier and the lessor.

This is done through the mechanism of a 'tripartite agreement' under which the role of the lessee in selecting the equipment is detailed; the warranties in respect of the equipment are assigned by the lessor to the lessee; and the lessee is made as the agent of the lessor in inspecting and accepting the delivery of the equipment.

## ANATOMY OF A LEASE AGREEMENT

The lease agreement can impose more number of obligations on the lessee/lessor and expressly render some of the implied obligations inapplicable. To understand the typical rights and obligations that are built in a lease agreement, let us take a look at some of the clauses built into a lease agreement.

### Contents of Lease Agreement

There is no uniform format for a lease agreement and the clauses included in the agreement vary from one lease agreement to another. But, by and large, the following clauses are found in most of the lease agreements:

**Description Clause** provides the description of the lessor, the lessee, the equipment and the location(s) where the equipment is (are) to be installed. The lessor usually stipulates that the equipment shall not be removed from the described location without its prior permission. For the sake of easy identification, the lessor may direct the lessee to affix plates or markings to the equipment indicating the lessor's interest.

**Period Clause** specifies the period for which the equipment is leased and the option available to the lessee for renewing the lease on expiry of the lease term.

**Rental Clause** specifies the amount of lease rentals to be paid, the periodicity, and the mode of such payment. If the rentals are not evenly spread over the lease term, the rental pattern is given by way of a schedule. This clause also specifies the initial deposit to be made, and the penal charge that is payable on lease rentals not paid on the due dates.

**Exemption Clause** clearly states that the lessee has selected the equipment based on his own judgment and has not relied on any statements or representations made by the lessor. Through this clause, the lessor expressly denies any obligation as to the fitness or merchantability of the equipment, and disowns responsibility for any defects in the equipment or the operations thereof.

**Manufacturer's Warranty Clause** entitles the lessee to the benefits of the warranties provided by the manufacturer/supplier of the equipment. This clause also authorizes the lessee to enforce due performance by the manufacturer of the equipment for any warranties or performance guarantee relating to the equipment.

**Ownership Clause** unequivocally states that no right, title, or interest in the equipment shall pass to the lessee and the lessee shall, at no time, contest or challenge the lessor's sole and exclusive right, title and interest in the equipment. This clause also stipulates that the lessee shall not sell, assign, pledge, hypothecate or otherwise encumber a lien upon or against the equipment.

**Equipment Delivery Clause** states that the lessee shall be solely responsible for taking delivery and possession of the leased equipment from the manufacturer/supplier. The clause also specifies that the lessor shall not be responsible for any loss suffered by the lessee on account of the equipment not being delivered on the due date. If the lessee cancels the purchase order/contract with the supplier of the equipment or refuses to accept delivery of the equipment, this clause entitles the lessor to terminate the agreement and be indemnified by the lessee for all expenses incurred on account of the action of the lessee.

**Repairs and Alterations Clause** specifies that the lessee at its own cost and expense will keep the equipment in good repair, condition and working order. While all replacements in the nature of maintenance will be deemed as part of the equipment, the additions, attachments, and improvements made to the equipment by the lessee (if not financed by the lessor) will belong to the lessee.

**Insurance Clause** specifies that the lessee must insure the equipment at its cost and expense for the benefit of and on behalf of the lessor against all normal risks and risks that are specific to the equipment and to the business of the lessee where this equipment is used.

**Surrender Clause** states that upon expiry of the lease term or earlier termination of the lease, the lessee must deliver the equipment to the lessor at the place where it is to be located in good working order and condition.

**Default Clause** specifies the events of default and the remedies available to the lessor upon the occurrence of any such event of default.

**Arbitration Clause** explains the arbitration procedure to be followed in the event of any dispute, difference or claim arising out of the lease agreement between the parties to the lease.

**Miscellaneous Clauses** includes provisions such as the lessee's obligation to submit its audited annual accounts to the lessor, the lessor's right to demand additional security in the event of any significant adverse change in the financial conditions of the lessee, etc. An interest variation clause is also included which provides for varying the lease rentals in line with the changes in the lending rates of commercial banks.

## SOME LEGAL ISSUES

We will now look at some of the lease-related legal issues. The issues which we will consider here are:

- Supplier-Lessor-Lessee Relationship.
- Insurance.
- Usage and Maintenance.
- Sub-Lease.
- Set-off Provisions.
- Defaults and Remedies.

### Supplier-Lessor-Lessee Relationship

The legal relationship between the three parties – supplier, lessor and lessee – becomes particularly important when the performance guarantees have to be enforced against the supplier. Since the sale contract is concluded between the supplier and the lessor, the latter enjoys the right of enforcing such guarantees against the supplier. Normally, the lease agreement contains a clause to the effect that the lessor will undertake to enforce the contractual obligations of the supplier to the extent it is necessary to protect the lessee's interest. Alternatively, the lease

agreement may provide for the lessor assigning to the lessee his rights against supplier. However, both these options do not provide an acceptable answer to the lessee's problem of securing the obligations of the supplier. This is because the damages that can be claimed by the lessee in the event of breach of the sale contract cannot exceed the loss suffered by the lessor on account of such breach. Given the 'hell or high water' clause (A clause in the lease agreement which reiterates the unconditional obligation of the lessee to pay rentals for the entire lease term, regardless at any event affecting the usage of the asset or any change in the circumstances of the lessee), in the typical lease agreement the loss incurred by the lessor in this context will be insignificant and the lessee is put at a serious disadvantage.

One way of resolving this problem in favor of the lessee is to enter into a tripartite commercial agreement between the supplier, the lessor and the lessee wherein the first party recognizes the interests of the third party. This practice gained acceptance in the UK after the court ruling in the case of Lambert vs. Lewis recognizing the validity of the tripartite agreement.

## Insurance

A finance lease agreement invariably requires the lessee to insure the equipment against such risks as are normally insured against by the owners of similar equipment. These risks include risks of loss or damage to the leased equipment itself and the risk of damage caused by leased asset to third parties and their property which can be substantial in the case of an asset such as an aircraft. The risk of loss or damage to the equipment will include loss or damage caused by fire, accidents, strikes, riot, burglary, acts of God, faulty handling and such other causes as the lessor may specify. In the case of assets like ships or aircraft insurance cover for war, expropriation and hijacking risks is warranted. Since the cost of an insurance cover increases with the number and nature of risks to be covered, thereby increasing the overall cost of transaction, the lessee and the lessor must arrive at an acceptable risk-cost trade-off. Usually the insurance policy is drawn in the name of the lessor for an amount equal to the replacement value/market value or purchase price as may be specified in the lease agreement.

In the event of the occurrence of any of the risks covered by the policy, the lease agreement must clearly specify the manner in which the proceeds received from the insurer will be applied.

## Usage and Maintenance

With movable equipment, the first concern is the geographic area in which the equipment is permitted to be used. The more areas in which the equipment is used, the greater are the risks to it. Typically, the lease agreement specifies the location(s) where the equipment can be used. But then the lease agreement cannot be too rigid on this point where the asset involved is say, an aircraft or a shipping container. Too many restrictions on the movements of such assets can impair the lessee's ability to make rental payments. The lessor must, however, ensure that, (i) its title or lien on the asset is respected in all the jurisdictions in which the asset can be located, and (ii) the 'use of the asset' in any location complies with the requirements of the local legal framework governing the operation of the asset.

The finance lease usually requires the lessee to maintain the equipment in good working condition at his cost. In this context, the lessor must specify the extent to which he will allow modifications to the leased equipment. Since the leased asset and all its parts must be clearly identifiable, the lessor will have to limit the extent to which the lessee can remove and replace parts. At the same time, he has to ensure that the restrictions placed do not prevent the lessee from carrying out his maintenance obligation.

## Sub-Lease

The issue of sub-lease is one of the important issues to be considered while structuring a lease agreement. The lease agreement can expressly permit or prohibit sub-lease. Where sub-lease is permitted, the lessor can impose restrictions on the identity of the sub-lessee, the duration of the sub-lease and the usage of the equipment. Alternatively, the lessor can require the lessee to obtain his prior approval before entering into a sub-lease arrangement. Normally, when the first lessee wants to sub-lease, the lessor calls for a tripartite agreement involving himself, the first agreement executed between the lessor and the first lessee. Among other things, the sub-lease agreement spells out the rights and obligations of the lessor, the first lessee and the sub (second) lessee.

**Box 1: Defeasance Structure in International Power Deals**

- Defeasance structures reduce the risk of the lender in the event of the bankruptcy or default of the lessee.
- Instead of paying an assumption amount to the payment undertaker or the guarantor, the sub-lessee deposits on closing, and amount equal to the assumption with a bank.
- The deposit account is in the sub-lessee's name.
- The deposit bank cannot be the same entity as the payment undertaker but it can belong to the same group.
- Under the payment undertaking agreement, the payment undertaker only makes sub-lease rental payments if it receives the cash from the deposit account.
- The sub-lessee grants irrevocable rights to the payment undertaker and access to the deposit account with the exclusion of the sub-lessee.
- The deposit account is pledged to the sub-lessor as security for the sub-lessees rental obligations.
- The sub-lessor repledges the deposit account to the lender as security for the loan.
- The major drawback with the structure is that it does not consider the cost of capital reserve or the cost of on balance sheet reporting. Debt defeasance is, therefore, attractive only if the transaction can be treated as an off balance sheet deal with zero risk weighting for the loan.

*Source: Financial Services, ICFAI-Vision Series, France 2001, page 32.*

## Set-off Provisions[1]

The set-off provisions are primarily meant to protect the interests of the lessor. An example is the 'hell or high water' clause which requires the lessee to make periodic rental payments and perform lease covenants under all circumstances regardless of the condition and fitness of the equipment. Likewise the lease agreement may bar the off-setting of any counter claims and defenses (against the lessor) against the lease payments. The lessee must ensure that the 'no set-off' provisions are not so drafted as to waive any claim the lessee may have against the lessor in a separate action.

## Defaults and Remedies

The lease agreement must detail the events construed as 'default' and specify the remedies available to the lessor upon occurrence of such events. Broadly, defaults can be grouped under three categories.

1 These sections draw on the paper "Leasing : An Overview of Legal Issues", authored by Duncan G Caldor III and Angela Mathieson, Leasing in Asia – A Publication of Asian Leasing Association.

The first type of default relates to the asset itself. For example, if the lessee violates any requirement relating to the insurance, use or maintenance of the equipment, such violation can constitute a default. Under such circumstances, the lease agreement may require the lessor to give a notice to the lessee allowing certain grace period to correct the default before exercising the remedies.

The second type of default relates to non-payment of rent and the general financial condition of the lessee. For example, the lease can contain specific financial covenants relating to the lessee's liquidity ratios, debt/equity ratio, interest coverage ratio, etc., violation of which can constitute a default. In practice, inclusion of such financial covenants are somewhat uncommon.

The third type of default relates to the insolvency of the lessee. Any insolvency, bankruptcy or reorganization proceedings which affects the lessee can give rise to a default under the lease whether or not the lessee has failed to make any rental payments or has committed a breach of the other covenants.

While we are on this subject, let us also consider the remedies to the lessee in the event of the lessor committing an act of default. If the lessor commits a breach of the obligations, then the lessee can terminate the lease agreement and claim damages. The measure of damages will be equal to the aggregate of (a) the additional lease rental (if any) the lessee will have to pay for leasing similar equipment from another source over the unexpired term plus, and (b) the cash loss resulting from the non-availability of the equipment for the period between the date of terminating the lease agreement and the date on which the lessee obtains a similar equipment on lease.

## SUMMARY

- Since in a typical equipment lease transaction, the lessor plays the role of a financier, the implied obligation of the bailor relating to the fitness of the bailed goods is expressly negatived by the lease agreement.
- The lease agreement provides for a number of obligations on the part of the lessee. Usually, the lessor and the lessee enter into a Master Lease Agreement which enables the lessee to add on leased equipment up to a predetermined limit in terms of value.
- The lease documentation process is fairly simple. It starts with the submission of a proposal by the lessee. On approval, the lessor issues a letter of offer detailing the terms and conditions of the lease. The letter of offer is accepted by the lessee by passing a Board resolution. This is followed by the lessor and lessee entering into a formal lease agreement.
- There are a number of legal issues to be considered before drafting the lease agreement. Some of these issues are (a) legal relationship between the equipment supplier, the lessor and the lessee, (b) insurance, (c) usage and maintenance, (d) sub-lease, (e) set-off provisions, and (f) defaults and remedies.

## Chapter XI

# Tax Aspects of Leasing

**After reading this chapter, you will be conversant with:**

- Income Tax Aspects
- Leasing and Tax Planning

## Introduction

In the earlier chapter, we said that leasing can be used as a vehicle for transferring the investment related tax shields (like depreciation tax shield) from the lessee to the lessor and the former can share a portion of the tax benefits accruing to the latter through a reduction in lease rentals. This chapter dwells on – the income tax aspect – in detail.

# INCOME TAX ASPECTS

Our discussion on the income tax aspects of equipment leasing revolves around:

i. Lessee's claim for lease rentals, maintenance and insurance costs of the leased asset being treated as tax-deductible expenses.

ii. Tax liability of rental income in the hands of the lessor.

iii. Relevance of the substance of a lease contract in determining the deductions allowable in the hands of the lessor and the lessee.

iv. Implications of the tax aspects for the financial evaluation of lease contracts.

v. Lessor's claim for depreciation tax shields.

## Depreciation Allowance on Leased Assets

i. Depreciation on a business asset is allowed as a tax-deductible expense if, (a) the asset is owned by the assessee; and (b) the asset is used by the assessee for the purpose of business.

ii. Assets which qualify for depreciation allowance are buildings, machinery, plant or furniture. 'Plant' includes ships, vehicles, books, scientific apparatus and surgical equipment used for the purpose of business.

iii. Depreciation is computed with reference to the actual cost of the asset. The actual cost will include (a) all expenses directly related to the acquisition of the asset, such as, say, the interest on money borrowed for financing the acquisition of the asset for the period till the asset is first put to use; (b) expenses necessary to bring the asset to the site, install it and make it fit for use like carriage inwards, installation charges, etc., and (c) expenses incurred to facilitate the use of the asset, like expense on training the operators of a new plant, or expense on essential construction work.

## Rental Expense on Leased Assets

From the lessee's angle, the rental expense on leased assets can be treated as a tax-deductible expense. It means any expense which (a) is not a personal expense of the assessee; (b) is not in the nature of capital expenditure; and (c) has been incurred wholly and exclusively for the purpose of business (carried on by the assessee) can be treated as a tax-deductible expense.

## Insurance and Maintenance Costs of Leased Assets

In a typical finance lease, the lessee bears the costs of insuring and maintaining the leased equipment. The expenses incurred in respect of hired plant, machinery or furniture used for the purpose of business will be treated as tax-deductible expenses.

## Rental Income from Lease

Whether a lease is a finance lease or an operating lease depends on the substance of the transaction rather than its form. Examples of situations which would normally lead to a lease being classified as a finance lease are:

a. The lease transfers ownership of the asset to the lessee by the end of the lease term;

b. The lessee has the option to purchase the asset at a price which is expected to be sufficiently lower than the fair value at the date the option becomes exercisable such that, at the inception of the lease, it is reasonably certain that the option will be exercised;

c. The lease term is for the major part of the economic life of the asset even if title is not transferred;

d. At the inception of the lease the present value of the minimum lease payments amounts to at least substantially all of the fair value of the leased asset; and

e. The leased asset is of a specialized nature such that only the lessee can use it without major modifications being made.

## LEASING AND TAX PLANNING

There are basically two ways in which the lessee can use leasing as a tax planning device. First, by taking advantage of the flexibility in structuring lease rentals, the lessee can reduce the current or future tax liability. Second, by transferring the capital allowances (which it is unable to absorb) to a lessor who can absorb these allowances, it can indirectly derive the benefit of these capital allowances in the form of lower lease rentals.

To understand how the first method works let us look at the following illustration:

### Illustration 1

Agnes Industries is contemplating a capital investment of $300 million during the current year. There are two ways of funding the investment. The company can finance the investment by debt carrying a rate of interest of 15% p.a. repayable in five equal annual installments. Alternatively, it can lease the assets on the following terms:

Lease Term: 5 Years

| Annual Lease Rentals (per $1,000) | |
|---|---|
| Year | $ |
| 1 | 443 |
| 2 | 443 |
| 3 | 196 |
| 4 | 196 |
| 5 | 196 |

The tax relevant rate of depreciation is 25% and the marginal tax rate (inclusive of surcharge) is 46%. The company anticipates substantial tax liabilities during the current year and in the following year. Given that the objective of the company is to reduce the tax liability, which one of the two alternatives will you recommend?

### Solution

**Alternative I:**
Debt Financing

| | Year 1 ($ in million) | Year 2 ($ in million) |
|---|---|---|
| Tax Deductible Expenses: | | |
| Interest on long-term debt | 45 | 36.00 |
| Depreciation | 75 | 56.25 |
| Total (A) | 120 | 92.25 |
| Tax shield (A x 0.46) | 55.2 | 42.44 |

**Alternative II:**
Finance Lease

| | Year 1 ($ in million) | Year 2 ($ in million) |
|---|---|---|
| Tax Deductible Expenses: | | |
| Lease Rentals (B) | 132.90 | 132.90 |
| Depreciation (C) | 75.00 | 56.25 |
| Tax Shield (B + C x 0.46) | 95.63 | 87.01 |

**Working Notes:**

| 1. | Debt Repayment Schedule | ($ in million) | ($ in million) |
|---|---|---|---|
| | Year | 1 | 2 |
| | Loan outstanding at the beginning | 300 | 240 |
| | Interest @ 15% | 45 | 36 |
| | Loan installment | 60 | 60 |
| | Loan outstanding at the end | 240 | 180 |
| 2. | Depreciation Schedule | | |
| | Year | 1 | 2 |
| | Opening WDV | 300 | 225 |
| | Depreciation | 75 | 56.25 |
| | Closing WDV | 225 | 168.75 |
| 3. | Lease Rentals ($ in million) | | |
| | Years 1 – 2 | 0.443 x 300 = 132.9 | |

Alternative II is recommended because it generates a higher amount of tax shield.

Hypothetically, a lessor can even structure a lease package where 99 percent of the total lease rentals is payable in year 1, and the remaining 1 percent is payable over the next four years. Likewise to suit the requirement of a lessee who anticipates an increasing stream of tax liability, a back ended rental stream can be structured. The Income Tax Authorities can of course disallow rental structure which is purely tax driven and which is not representative of the time pattern of the user's benefit.

The other tax based advantage of leasing is that it permits a transfer of the investment related tax shields from a lessee who cannot absorb these tax shields to a lessor who can absorb the same.

## Implications for Financial Analysis

From a financial angle, what are the implications of the tax provisions we have discussed so far? Briefly the implications are:

i. The lessor gains the tax shields on depreciation and the lessee gains the tax shields on lease rentals. The tax shields will be treated as a cash inflow while defining the lease related cash flows of both.

ii. Since capital gains on sale of individual assets of a block are not normally subject to tax, the estimated salvage value of the equipment on expiry of the lease term will not be adjusted for capital gains tax while defining the lease-related cash flows of the lessor or the lessee. Based on the same line of reasoning, the estimated salvage value will not be adjusted for tax shield on capital loss. Put differently, we will treat the given net salvage value as a post-tax cash flow.

## SUMMARY

- The income tax aspects of leasing are primarily concerned with (a) lessee's claim for lease rentals and the operating costs of the leased assets being treated as tax-deductible expenses; and (b) tax liability on rental income in the hands of the lessor, and the tax shield on depreciation.
- From the lessee's angle, the rental expense can be treated as a tax-deductible expense. The costs incurred in insuring and maintaining the leased asset are also tax-deductible.

## Chapter XII

# Lease Evaluation: The Lessee's Angle

**After reading this chapter, you will be conversant with:**

- Financial Evaluation
  - Weingartner's Model
  - Equivalent Loans and Other Models
  - Bower-Herringner-Williamson (BHW) Model
  - Bower's Model
  - Break Even Rentals
- Lease Evaluation in Practice
- Evaluation of Lessor

## Introduction

In the previous chapter, we identified a set of financial and non-financial factors that have a bearing on the decision to lease. In this chapter, we will discuss the evaluation of a lease (from the lessee's stand point) in detail. The process of lease evaluation consists of three stages:

– Financial Evaluation.

– Evaluation of Non-financial Factors.

– Evaluation of the Lessor.

The first part of this chapter focuses on financial evaluation. It explores the anatomy of the various financial models developed for this purpose and attempts to build a framework for financial evaluation. The second part of the chapter briefly covers the non-financial factors considered in practice. The third part presents a framework for appraising the lessor.

**Box 1: SNCB Formula for Lease Evaluation**

Societe Nationale Chemins de Belgique (SNCB), the Belgian national railways is one of the largest availers of lease finance. Over the years, SNCB has formulated an elaborate strategy for evaluating a lease transaction from various standpoints. SNCB evaluates lease proposals based on the Net Present Value (NPV) approach and the Internal Rate of Return (IRR) approach. IRR enables SNCB to compare the implicit cost of leasing with other costs of capital funding. The calculations include the sums received, the rentals paid and the purchase options price to be paid to recuperate title of the equipment at purchase option date – net of all transactions costs.

Transactions with benefits less than 5 percent are not worth doing on a stand alone basis and only add value if combined with other structures. It often pays to wait for a high return deal rather than to refinance equipment when market rates are not at their best.

In fact, SNCB often mandates transactions when it does not really need the funds which offers it a better bargaining position. Other reasons for leasing are diversification of funding sources and realization of capital gain on rolling stock to improve profits.

SNCB is not sensitive about keeping title to equipment. Economic considerations prevail. But at the end of the lease term, SNCB usually recuperates title to the equipment using the purchase option.

Since 1994, SNCB has contracted $3 billion of financing out of which more than half is through cross-border lease transactions. SNCB has closed cross-border lease deals out of Austria, Canada, Japan, France, Sweden and the US and its net outstanding leases stand at $2.5 billion. In a nutshell, the most important criterion for SNCB to favor lease finance is a financial one. Net present value benefits on cross-border lease ranges from between 5 percent to 15 percent with savings of up to 125 basis points below the Brussels Interbank Offer Rate (BIBOR).

*Source: Financial Services, ICFAI-Vision Series, Finance, 2001, pages 21 and 22.*

# FINANCIAL EVALUATION

## Alternative Approaches for Lease Evaluation

We know that a finance lease effectively transfers the risks and rewards associated with the ownership of an equipment from the lessor to the lessee. Therefore, from the lessee's angle "leasing" and "buying" can be looked upon as two mutually exclusive ways of investing in an asset. In other words, the firm contemplating a capital investment can evaluate "leasing" as one of the ways of investing in the asset and choose this alternative if it is financially more desirable than "buying".

In practice, we also encounter situations where the decision to invest is predetermined. Examples of such situations include investment decisions relating to replacement of machinery and statutory investments like investment in a pollution control equipment. In such situations, a firm is confronted only with the problem of funding the acquisition. The questions are: Should the asset be funded with debt? Should it be funded with a mix of debt and equity? Should it be leased? From a purely economic angle, the firm will lease the asset if and only if the cost of leasing is less than the cost of funding the acquisition.

In short, we can say that a lease can be evaluated either as an investment alternative or as a financing alternative. Most of the lease evaluation models, however, assume that the decision to acquire the assets has been made and treat 'finance lease' as a financing alternative. At this juncture we must also mention that the 'appropriate model' for lease evaluation is still debated by both finance managers and academics. While there are more than half-a-dozen models available for evaluating a lease,[1] we will confine our discussion to four models which in our opinion represent reasonably well the spectrum of views on this issue. We will label these models as:

- Weingartner's Model.
- Equivalent Loan Model.
- Bower-Herringer-Williamson (BHW) Model.
- Bower's Model.

These models differ from one another primarily in terms of the discount rate(s) to be applied to the different components of the lease related cash flow stream.

## Weingartner's Model[2]

The steps involved in the application of this model are as follows:

**Step 1:** Compute the net present value of the 'lease' alternative – NPV(L)

**Step 2:** Compute the net present value of the 'buy' alternative – NPV(B)

**Step 3:** Compare the net present values defined in steps (1) and (2)

Lease, if NPV(L) > NPV(B) > 0
Buy, if NPV(B) > NPV(L) > 0

The discount rate (k) to be used for calculating the net present values will be the marginal cost of capital defined as follows:

$$k = \frac{D}{D+E} \times k_D \times (1 - T) + \frac{E}{D+E} \times k_E \qquad (1)$$

Where,

| | | |
|---|---|---|
| $k_D$ | = | marginal cost of debt; |
| $k_E$ | = | marginal cost of equity; |
| D:E | = | debt-equity mix in the target capital structure; and |
| T | = | marginal tax rate. |

It is important to note that 'debt' as defined here includes 'lease finance'. Put differently the model assumes: (i) that the target capital structure consists of a mix of debt, lease finance, and equity; and (ii) that each investment is deemed to be financed using this mix. The first assumption is important because 'lease finance' is not normally included as a source of finance in the target capital structure.

1 Refer Bower R.S., "Issues in Lease Financing", Financial Management (Winter 1973), pp.25-34.
2 Weingartner, H.M., "Leasing, Asset Lives and Uncertainty: Guide to Decision Making", Financial Management (Summer 1987) pp.5-12.

In fact, the other lease evaluation models assume that the target capital structure consists of just debt and equity and treat 'lease finance' as a substitute for 'debt'. The implications of this assumption will be clear once we complete our discussion of all the models on lease evaluation.

### Illustration 1

Reeve Ceramics Company is considering investment in a balancing equipment about which the following information is available:

- The equipment costs $41.6 million inclusive of sales tax at 4 percent.
- The acquisition will be funded through a mix of term loan and own funds in the ratio of 3:1. The loan carries a rate of interest of 18% p.a., and is repayable in five equal annual installments.
- The planning horizon for such investments is 5 years. After 5 years, the equipment is expected to fetch a net salvage value of $4 million.
- The tax relevant rate of depreciation is 25%.
- The investment is expected to generate an incremental EBDIT (Earnings Before Depreciation, Interest and Taxes) of $35 million in year 1, $20 million in year 2 and $12 million from years 3 through 5.

The commercial bank which has agreed to finance the investment has recently informed the company that on account of a temporary resource crunch, the loan can be disbursed only after six months. The equipment is, however, urgently required for debottlenecking its production process. Therefore, the company decides to evaluate the following options:

– Finance the acquisition through a six-month intercorporate loan at a cost of 12% per semi-annual period and liquidate the liability utilizing the bank loan made available six months later.

– Lease the equipment.

The company has received an offer from McCall Leasing Company, the terms of which are as follows:

– Primary lease period : 5 years

– Secondary lease period : 3 years

– Management fee : 1% of investment cost

– Annual rental

During primary period : $294/$1,000

During secondary period : $36/$1,000

The lease rentals are payable annually in arrears, but the management fee is payable immediately on signing the lease. The lease rentals are subject to sales tax of 4%. The leasing company is not entitled to the concessional sales tax and has to pay sales tax @ 10% on the cost of the equipment.

Reeve Ceramics has an explicitly stated target debt-equity ratio of 2:1. The marginal costs of debt and equity are 18 percent and 22.45 percent respectively. The marginal rate of tax is 46 percent including surcharge.

Based on economic considerations, which alternative would you recommend?

**Solution**

$$\text{Marginal cost of capital} = \frac{2}{3} \times 0.18 \times (1 - 0.46) + \frac{1}{3} \times 0.2245$$

$$= 0.1396 \text{ or } 13.96\%$$

The present value of the net cash flow stream associated with the purchase option can be defined as:

NPV(B) = – Initial Investment
+ P.V. of [EBDIT Stream x (1 – Tax Rate)]
+ P.V. of [Tax Shields on Depreciation]
+ P.V. of [Net Salvage Value]

P.V. of [EBDIT Stream (1 – Tax Rate)]

= [\$35 mn x $PVIF_{(13.96,1)}$ + \$20 mn x $PVIF_{(13.96,2)}$
+ \$12 mn x [$PVIF_{(13.96,3)}$ + $PVIF_{(13.96,4)}$ + $PVIF_{(13.96,5)}$]] x (1 – 0.46)

= \$36.49 million.

P.V. of (Tax Shields on Depreciation)

= [\$10.4 mn x $PVIF_{(13.96,1)}$ +\$ 7.8 mn x $PVIF_{(13.96,2)}$
+ \$5.85 mn x $PVIF_{(13.96,3)}$ + \$4.39 mn x $PVIF_{(13.96,4)}$
+ \$3.29 mn x $PVIF_{(13.96,5)}$] x 0.46

= \$10.76 million.

P.V. of (Interest on Intercorporate Borrowings)

= 0.12 x (\$41.6 mn x 0.75) x $PVIF_{(13.96,1/2)}$

= \$3.74 mn x 0.937 = \$3.5 mn

P.V. of (Interest Tax Shield on Intercorporate Borrowing)

= \$3.74 mn x 0.46 x $PVIF_{(13.96,1)}$ = \$1.51 mn

P.V. of (Net Salvage Value)

= \$4 mn x $PVIF_{(13.96,5)}$ = \$2.08 mn.

Net present value of purchase option

= \$(– 41.6 + 36.49 + 10.76 – 3.50 + 1.51 + 2.08) million
= \$5.74 million.

The net present value of the lease option is defined as:

NPV(L) = – P.V. (Lease Rentals) + P.V. (EBDIT Stream) x (1 – Tax Rate)
+ P.V. (Tax Shield on Lease Rentals) – Management Fee
+ P.V. (Tax Shield on Management Fee)
+ P.V. (Tax Shield on Depreciation) (2)

P.V. (Lease Rentals) (See Notes 2) = \$13.45 mn x $PVIFA_{(13.96,5)}$ =\$46.21 mn.

P.V. [EBDIT Stream x (1 – Tax Rate)] = \$36.49 mn

P.V. (Tax Shield on Lease Rentals) = \$13.45 mn x 0.46 x $PVIFA_{(13.96,5)}$
= \$21.26 mn

Management Fee = \$0.44 mn

P.V. (Tax Shield on Management Fee) = \$0.44 mn x 0.46 x $PVIF_{(13.96,1)}$
= \$0.18 mn

NPV(L) = $ (–46.21 + 36.49 + 21.26 – 0.44 + 0.18) million = $11.28 mn

Since, NPV(L) > NPV(B) > 0, the equipment must be leased.

**Notes:**

1. In this example, we have assumed that the lessee bears operating costs including insurance and maintenance which is normally true of any finance lease barring the bipartite finance lease.

2. The example also illustrates the sales tax implications of leasing. The impact of the incremental Sales tax and the sales tax on rentals have been factored into our calculation of lease rentals as shown below:

$$\text{Annual Lease Rental} = (0.294 \times 1.04) \times \left(\frac{41.6}{1.04} \times 1.1\right) = \$13.45 \text{ mn.}$$

From the example, we find that the present value of the post-tax EBDIT stream has no bearing on the final decision for the obvious reason that it remains unchanged under both the options. Therefore, if we consider the difference between NPV(L) and NPV(B) denoted as $\Delta$ (pronounced as 'delta') NPV, we find that the EBDIT component can be deleted and the value of NPV(L) can be expressed as follows:

$\Delta$ NPV(L) = Initial Investment – P.V. (Lease Rentals)
– Management Fee + P.V. (Tax Shield on Lease Rentals)
+ P.V. (Tax Shield on Management Fee)
– P.V. (Tax Shield on Depreciation) – P.V. (Net Salvage Value). (3)

We have, consider the following values:

| Panel A | Panel B |
|---|---|
| NPV(L) = – $7 mn | NPV(L) = – $8 mn |
| NPV(B) = – $8 mn | NPV(B) = – $7 mn |
| NAL = $1 mn | NAL = – $1 mn |

While the NAL values in panels A and B suggest that the equipment must be leased/purchased, the negative values of NPV(L) and NPV(B) reveal that the asset must be neither leased nor purchased. Therefore, NAL cannot be used as an investment decision-making criterion unless the decision maker has a priori information on the investment worthiness of the asset under consideration. Put differently, NAL can be used as the criterion for choosing between 'leasing' and 'buying' if and only if the decision to invest in the asset has already been made.

## Equivalent Loans and Other Models

The Equivalent Loan Model, the BHW model and the Bower Model are basically variants of the school of thought which believes that leasing displaces long-term debt. The models that fall under this school are based on two fundamental assumptions: (i) the decision to acquire the asset has been already made; and (ii) the asset, if purchased, will be debt-financed. The first assumption is necessary for viewing leasing as a financing alternative. The second assumption is necessary to prove that lease displaces debt. The illustration 2 gives the phenomenon of debt displacement.

## Illustration 2

Assume that the balance sheet of Seaton & Ian Industries (SII) as on February 1, 20x7 is as follows:

**Balance Sheet of SII as on February 1, 20x7**

| Liabilities | ($ in million) | Assets | ($ in million) |
|---|---|---|---|
| Net Worth | 300 | Fixed Assets | 600 |
| Long-term Debt | 300 | Current Assets | 200 |
| Current Liabilities | 200 | | |
| | 800 | | 800 |

Suppose SII is contemplating a capital expenditure of $200 million and is planning to fund the acquisition by raising debt and equity in the ratio of 1:1.

**The Post-acquisition Balance Sheet of SII**

| Liabilities | ($ in million) | Assets | ($ in million) |
|---|---|---|---|
| Net Worth | 400 | Fixed Assets | 800 |
| Long-term Debt | 400 | Current Assets | 200 |
| Current Liabilities | 200 | | |
| | 1,000 | | 1,000 |

Alternatively, if the assets are acquired on a finance lease, the economically equivalent balance sheet will be as follows:

| Liabilities | ($ in million) | Assets | ($ in million) |
|---|---|---|---|
| Net Worth | 300 | Fixed Assets (Existing) | 600 |
| Long-term Debt | 300 | Assets on Lease as per the new AS-19, the lessee must capitalize the financial lesser in his books of accounts. | 200 |
| Lease Liability | 200 | Current Assets | 200 |
| Current Liabilities | 200 | | |
| | 1,000 | | 1,000 |

Suppose SII wants to maintain long-term debt to equity ratio of 1:1. We find that the capital structure in the post-lease balance sheet needs re-balancing, because the long-term debt to equity ratio as per this balance sheet stands at $500 mn/$300 mn = 1.67:1. To re-balance the capital structure, SII must issue fresh equity to the tune of $100 mn and reduce its long-term debt by $100 mn. The revised balance sheet will be as follows:

| Liabilities | ($ in million) | Assets | ($ in million) |
|---|---|---|---|
| Net Worth | 400 | Fixed Assets (Existing) | 600 |
| Long-term Debt | 200 | Assets on Lease | 200 |
| Lease Liability | 200 | Current Assets | 200 |
| Current Liabilities | 200 | | |
| | 1,000 | | 1,000 |

Comparing this balance sheet with the post-acquisition balance sheet, we can find conclusive evidence for the fact that 'finance lease' has displaced an equal amount of long-term debt. What are the implications of this debt displacement effect for our analysis? First, we understand that the appropriate discount rate for discounting lease payments is the marginal cost of debt. Second, when leasing displaces debt, the lessee obviously foregoes the interest tax shields on the displaced debt. So the present value of these interest tax shields (foregone) must be taken as an outflow in computing the net advantage of leasing. The three models which we have presented here take into account these implications.

## EQUIVALENT LOAN MODEL

The Net Advantage of Leasing (NAL) is called the Net Value of Lease (NVL) under the Equivalent Loan Model and is defined as follows:

Net Value of Lease = Initial Investment – P.V. (Lease Payments Discounted at $K_d$)
+ P.V. (Tax Shield on Lease Payments Discounted at $k_d$)
– P.V. (Depreciation Tax Shields Discounted at $k_d$)
– P.V. (Net Salvage Value Discounted at $k_d$)
– P.V. (Interest Tax Shields on displaced Debt Discounted at $k_d$)

Where,

$K_d$ = pre-tax marginal cost of debt
$k_d$ = post-tax marginal cost of debt
= $K_d(1 – T)$ and
T = marginal tax rate.

### Illustration 3

Jeremy Company is contemplating investment in a rice-milling machine costing $60 million. The company can purchase the equipment by raising additional debt at a cost of 15% p.a.

Alternatively, the company can take the equipment on a finance lease with a five year primary lease period at the rate of $300 ptpa payable annually in arrear. The marginal tax rate is 46% and the tax relevant rate of depreciation is 40%. The salvage value of the equipment after five years is negligible.

Calculate the net value of the lease. Should the company lease the equipment?

### Solution

$K_d = 15(1 – 0.46) = 8.1\%$

| | |
|---|---|
| 1. Initial investment | = \$60 million |
| 2. Present value of lease payments | = 18 x $PVIFA_{(15,5)}$ |
| | = 18 x 3.352 |
| | = \$60.34 million |
| 3. Present value of tax shield on lease payments | = 18 x 0.46 x $PVIFA_{(8.1,5)}$ |
| | = 18 x 0.46 x 3.982 |
| | = \$32.97 million |
| 4. Present value of depreciation tax shields | = [24 x $PVIF_{(8.1,1)}$ + 14.4 x $PVIF_{(8.1,2)}$ + 8.64 x $PVIF_{(8.1,3)}$ + 5.18 x $PVIF_{(8.1,4)}$ + 3.11 x $PVIF_{(8.1,5)}$] x 0.46 |
| | = \$21.74 million |
| 5. Present value of interest tax shields | = [9.05 x $PVIF_{(8.1,1)}$ + 7.71 x $PVIF_{(8.1,2)}$ + 6.17 x $PVIF_{(8.1,3)}$ + 4.39 x $PVIF_{(8.1,4)}$ + 2.35 x $PVIF_{(8.1,5)}$] x 0.46 |
| | = \$11.34 million. |
| 6. Net value of the lease | = (1) – (2) + (3) – (4) – (5) |
| | = – \$0.45 million |

Since NVL is negative, the equipment cannot be leased.

**Amortization Schedule for Equivalent Debt**

($ in million)

| Year | Amount of Outstanding Loan | Capital Content | Interest Content @ 15% p.a. | Debt Service Charge |
|---|---|---|---|---|
| 1 | 60.34 | 8.95 | 9.05 | 18.00 |
| 2 | 51.39 | 10.29 | 7.71 | 18.00 |
| 3 | 41.10 | 11.83 | 6.17 | 18.00 |
| 4 | 29.27 | 13.61 | 4.39 | 18.00 |
| 5 | 15.66 | 15.66 | 2.35 | 18.01 |

Evaluating the Equivalent Loan Model, we find that the principal advantage of this model is the ease in application. It uses a single discount rate (cost of debt) to value all cash flows and this discount rate can be easily determined. But then the use of a single discount rate is also the main draw back of this model. One discount rate can be applied to all cash flow components only if the risks characterizing these cash flow components are the same. In this case, the risk characterizing the lease payments is often significantly less than the risk characterizing the (timely) realization of the tax shelters and the residual value.

It is, therefore, reasonable to assume that the lease payments (including lease management fee, if any, and the guaranteed residual value) have the same risk as the debt service associated with a secured loan and to discount these outflows at the marginal cost of debt ($K_d$). But the realization of the tax shelters at the scheduled points of time is a function of the availability of adequate pre-tax earnings which in turn is influenced by the business and financial risks of the firm. Realization of the estimated salvage value is influenced by the degree of uncertainty associated with the technological life and the product market life of the equipment. Therefore, these cash flows have to be discounted at a rate which is higher than the post-tax marginal cost of debt. While there is no consensus among the academicians and the practising managers on the appropriate risk adjusted discount rate, many consider the marginal cost of capital as a better approximation of this rate.

## Bower-Herringer-Williamson (BHW) Model

Under the BHW Model, the lease related cash flow stream is divided into two parts – the part relating to financing per se and the part relating to tax shields and residual value. The cash flow stream related to financing is called the Financial Advantage of Leasing and can be defined as

$$FA(L) = \text{Initial Investment} - \text{P.V. of Lease Payments} \quad (4)$$

The BHW model assumes that the debt which will be raised in lieu of the lease will be equal to the initial investment (as opposed to the assumption underlying the Equivalent Loan Model that the amount of debt that will be raised in lieu of the lease will be equal to the present value of the lease payments). Therefore, the model defines FA(L) as:

$$FA(L) = \text{P.V. of Loan Payments} - \text{P.V. of Lease Payments} \quad (5)$$

The cash flow stream related to tax shields and residual value is called the Operating Advantage of Leasing and is defined as:

$$OA(L) = \text{P.V. of Lease Related Tax Shields} - \text{P.V. of Loan Related Tax Shields} - \text{P.V. of Residual Value} \quad (6)$$

The discount rate to be used for determining the P.V. of lease payments in Eqn.5 will be the pre-tax marginal cost of debt and the discount rate to be employed in Eqn. (6) will be the post-tax marginal cost of capital.

It is important to note that either FA(L) or OA(L) or both can be negative. A negative FA(L) signifies financial disadvantage of leasing and a negative OA(L) denotes operating disadvantage of leasing. If FA(L) + OA(L) is negative, then leasing has an overall disadvantage. Therefore, the decision rules associated with leasing can be summed up as follows:

| Condition | Decision |
|---|---|
| [FA(L) + OA(L)] is positive | Lease |
| [FA(L) + OA(L)] is negative | Borrow and Buy |

**Illustration 4**

Consider the data provided in illustration 3. You are informed that the marginal cost of capital is 13% p.a. Calculate the net advantage of leasing.

**Solution**

Present value of loan payments = \$60 million

Present value of lease payments = 18 x $PVIFA_{(15,5)}$ = \$60.34 million

Financial advantage = \$60 mn – \$60.34 mn = (–) \$0.34 million

Present value of lease related = \$18 mn x $PVIFA_{(13,5)}$ x 0.46 = \$29.12 million

Tax shields

The loan related tax shields are the depreciation and the interest tax shields. To calculate the interest tax shield, we should develop the repayment schedule for the loan amount of \$60 million. Assuming that the loan is to be repaid in equated annual installments, the amount of each installment will be

$$= \frac{60}{PVIFA_{(15,5)}} = \frac{60}{3.352} = \$17.90 \text{ million.}$$

**Repayment Schedule**

(\$ in million)

| Year | Loan outstanding at the beginning | Rate of interest (%) | Interest content | Capital content | Debt service charge |
|---|---|---|---|---|---|
| 1 | 60 | 15 | 9.00 | 8.90 | 17.90 |
| 2 | 51.1 | | 7.67 | 10.23 | 17.90 |
| 3 | 40.87 | | 6.13 | 11.77 | 17.90 |
| 4 | 29.10 | | 4.36 | 13.54 | 17.90 |
| 5 | 15.56 | | 2.33 | 15.56 | 17.89 |

**Present Value of Loan Related Tax Shields**

(\$ in million)

| Year | Interest (A) | Depreciation (B) | TS = (A + B) x 0.46 | Present Value @ 13% |
|---|---|---|---|---|
| 1 | 9.00 | 24.0 | 15.18 | 13.43 |
| 2 | 7.67 | 14.4 | 10.15 | 7.95 |
| 3 | 6.13 | 8.64 | 6.79 | 4.71 |
| 4 | 4.36 | 5.18 | 4.39 | 2.69 |
| 5 | 2.33 | 3.11 | 2.50 | 1.36 |
| | | | | 30.14 |

**Note:** TS denotes Tax Shield.

Operating advantage = $(29.12 – 30.14) million = (–) $1.02 million

Overall advantage = (–) $[0.34 + 1.02] million = (–) $1.36 million.

Since there is an overall disadvantage, the equipment must not be leased.

As we said earlier, the principal merit of the BHW Model is that it explicitly recognizes the higher risk inherent in the realization of tax shields and the residual value. However, the assumption underlying the model that the present value of the loan payments is equal to the acquisition cost is somewhat inconsistent with the notion of debt displacement which states that the amount of loan displaced is equal to the present value of the lease payments.

## Bower's Model

The lease evaluation model developed by Richard Bower is a synthesis of the alternative models developed for evaluating lease as a financing alternative. He found that these alternative models differed from one another in terms of the appropriate discount rate to be applied for discounting the tax shelters. So, he developed a model which recognizes the point of disagreement and still permits the decision maker to take advantage of the broad agreement on other matters. The steps involved in the application of the model are

1. Define the Cost of Purchase (COP) as:

   COP = Initial investment – P.V. (Tax Shields on depreciation discounted at an unspecified rate) – P.V. (Net salvage value discounted at marginal cost of capital)

   (7)

2. Define the Cost of Leasing (COL) as:

   COL = P.V. (Lease Rentals discounted at pre-tax cost of debt) – P.V. (Tax shield on lease rentals discounted at an unspecified rate) + P.V. (Tax shield on interest discounted at an unspecified rate).

   (8)

The decision maker can specify a discount rate which in his opinion reflects reasonably well the risk associated with the realization of the tax shelters and can evaluate the costs of purchase and leasing. If COL < COP, the decision will be to lease and if COL > COP, the decision will be to purchase. The advantage of this model over the other models is that it permits the decision maker to choose the appropriate discount rate for valuing the tax shelters. Of course, this advantage is secured at the cost of adding more complexity to the basic model.

### Illustration 5

Consider the data provided in illustration 4. Calculate the values of COP and COL for the following discount rates – 6%, 8%, 10%, 12% and 14%.

### Solution

The amounts of the different tax shelters and their present values are given in the following tables:

**Computation of Tax Shields**

($ in million)

| Year | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| A. Depreciation | 24.00 | 14.40 | 8.64 | 5.18 | 3.11 |
| B. Tax Shield on (A) = (A) x 0.46 | 11.04 | 6.62 | 3.97 | 2.38 | 1.43 |
| C. Lease Payments | 18.00 | 18.00 | 18.00 | 18.00 | 18.00 |
| D. Tax Shield on (C) = (C) x 0.46 | 8.28 | 8.28 | 8.28 | 8.28 | 8.28 |
| E. Interest Payments | 9.00 | 7.67 | 6.13 | 4.36 | 2.33 |
| F. Tax Shield on (E) = (E) x 0.46 | 4.14 | 3.53 | 2.82 | 2.01 | 1.07 |

**Present Values of Tax Shields**

($ in million)

| Discount Rate (%) | 6 | 8 | 10 | 12 | 14 |
|---|---|---|---|---|---|
| P.V. of Depreciation Tax Shields | 22.59 | 21.77 | 21.00 | 20.29 | 19.60 |
| P.V. of Tax Shields on Lease Payments | 34.88 | 33.06 | 31.39 | 29.85 | 28.43 |
| P.V. of Interest Tax Shields | 11.81 | 11.30 | 10.83 | 10.40 | 9.99 |

**Note:** The reader is requested to verify the cell entries in the above Table.

At a discount rate of 6%, the cost of purchase (using equation 7) will be:

$60 – 22.59 – 0 \times PVIF_{(13,5)} = \$37.41$ million

The cost of leasing (using equation 8) will be:

$60.34 – 34.88 + 11.81 = \$37.27$ million.

Repeating these calculations for k = 8%, 10%, 12% and 14%, we get the following table.

**Values of COP and COL**

($ in million)

| Discount Rate (%) | Cost of Purchase (COP) | Cost of Leasing (COL) | COL – COP |
|---|---|---|---|
| 6 | 37.41 | 37.27 | (–) 0.14 |
| 8 | 38.23 | 38.58 | 0.35 |
| 10 | 39.00 | 39.78 | 0.78 |
| 12 | 39.71 | 40.89 | 1.18 |
| 14 | 40.40 | 41.90 | 1.50 |

From in the above Table, it is clear that leasing is costlier than borrowing for the discount rates above 6% which is the same as the post-tax cost of debt.

## Suggested Framework for Lease Evaluation

From our discussion of the alternative models of lease evaluation, two points emerge. First, the discount rate applied to the evaluation of the tax shields and the residual value must reflect the higher degree of risk inherent in the realization of these flows. Second, the change in the borrowing capacity of the firm on account of leasing must be recognized and factored into the lease evaluation model.

As far as the first point is concerned, Weingartner's Model and the BHW Model use the marginal cost of capital ($k_c$) as the risk adjusted discount rate on the assumption that the risk characterizing the cash flows is equal to the risk complexion of the firm. The Equivalent Loan Model uses the pre-tax marginal cost of debt ($K_d$) as the discount rate on the assumption that the risk characterizing these cash flows is not significantly different from the risk characterizing the lease payments. The Bower Model leaves this rate to be specified by the decision maker.

As far as the second point is concerned, the Equivalent Loan Model, the BHW Model and the Bower Model explicitly consider the debt-displacement effect of leasing. These models[3] are based on the premise that lease finance displaces an equal amount of long-term debt. Therefore, the lease payments are discounted at the pre-tax cost of debt to determine the amount of long-term debt displaced. The interest tax shields on the displaced debt are also explicitly considered in these models. On the other hand, the Weingartner Model discounts the lease payments at the marginal cost of capital on the assumption that each investment (in this case the investment in the equipment) on an average is financed with the target mix of long-term debt, lease finance, and equity. Therefore, this model requires the values of the present and future leases to be explicitly considered as a form of debt in determining the target capital structure.

As far as the first point is concerned we agree that the tax shields have to be discounted at a risk adjusted rate and we recommend the use of the marginal cost of capital as the discount rate rather than leaving this discount rate unspecified. Our recommendation is also justified on the ground that in any typical capital budgeting exercise we discount the net cash flows (which include depreciation tax shields) at the marginal cost of capital.

Of course, a discount rate higher or lower than the marginal cost of capital will be warranted in such cases where the risk associated with the realization of these cash flows is believed to be significantly higher or lower than the risk of existing investments. So, in general the risk-adjusted discount rate will be

$$r = i + n + d$$

Where,

r = risk adjusted discount rate,

i = risk-free rate of interest,

n = adjustment for firm's normal risk, and

d = adjustment for the investment's differential risk.

If $d = 0$, then $r = (i + n)$, i.e., the marginal cost of capital, will be the appropriate discount rate.

As far as the debt-displacement effect of leasing is concerned we believe that this effect must be explicitly considered in the cash flow computations. The alternative of including the value of present and future leases as a form of debt in the target capital structure is prone to serious valuation problems and is not easy to implement in practice. It is difficult to subscribe to the view point that firms explicitly consider the present and future lease obligations in defining the target debt-equity mix. We, therefore, suggest that a finance lease must be treated as a perfect substitute for long-term debt and the loss of interest tax shields must be explicitly considered.

We, therefore, recommend that lease payments be valued at the pre-tax cost of debt and the loss of interest tax shields on the displaced debt be valued at the marginal cost of capital given the inherent risk in realizing these tax shields.

3 The lease payments are discounted at the pre-tax cost of debt to determine the amount of loan that should have been raised if the equipment was not leased. The tax shields and the residual value which constitute the post-tax operating and terminal cash flows respectively are discounted at the post-tax marginal cost of debt.

Therefore, our suggested framework for lease evaluation is as follows:

- In the absence of any a prior information on investment worthiness, evaluate leasing and buying as two mutually exclusive investment alternatives. The recommended criterion of merit is the net present value and the appropriate discount rate is the marginal cost of capital for all cash flows other than lease payments. The lease payments are to be discounted at the pre-tax cost of debt. The value of the interest tax shields must be included as a foregone cash inflow in the computation of NPV(L).
- Given that an investment decision has already been made, evaluate leasing as a financing alternative. The recommended criterion of merit is the Net Advantage of Leasing (NAL) defined as follows:

| | |
|---|---|
| NAL = | Investment Cost – P.V. (Lease Payments discounted at $K_d$) + P.V. (Tax Shields on Lease Payments discounted at k) – Management Fee + P.V. (Tax Shield on Management Fee discounted at k) – P.V. (Depreciation Tax Shields discounted at k) – P.V. (Interest Tax Shields discounted at k) – P.V. (Residual value discounted at k) |

Where, $K_d$ denotes the pre-tax cost of long-term debt and k denotes the post-tax marginal cost of capital for the firm respectively. The following illustration explains this framework.

### Illustration 6

ABC Industries is contemplating investment in an imported energy conservation equipment about which the following particulars are available:

| | | | |
|---|---|---|---|
| – | Investment Cost | : | $60 million |
| – | Tax Relevant Rate of Depreciation | : | 40% p.a. |
| – | Useful Life | : | 4 years |
| – | Estimated Net Salvage Value after 4 years | : | $5 million |

The company can either borrow and buy the equipment or lease the equipment. The cost of capital is 12% p.a., and the marginal rate of tax is 46%. The cost of debt (comparable to the lease) is 17% p.a.

The finance manager of the company has a strong preference for leasing the equipment. Based on a set of financial and non-financial criteria evolved by him for evaluating the lessors he has identified Synergy Leasing as a potential candidate.

Synergy Leasing has offered to structure a three year full pay-out lease at the rate of $444/$1,000 payable annually in arrears. The lease can be renewed for a further period of 3 years at a rental of $18/$1,000 payable annually in arrear.

Compute the Net Advantage of Leasing (NAL). Assume a net salvage value of $6 million after three years.

### Solution

| | | |
|---|---|---|
| A. | Initial Investment | = $60 million |
| B. | P.V. of Lease Rentals | = (60 x 0.444) x $PVIFA_{(17,3)}$<br>= 26.64 x 2.210<br>= $58.87 million |
| C. | P.V. of Tax Shield on Lease Rentals | = (60 x 0.444 x 0.46) x $PVIFA_{(12,3)}$<br>= $29.44 million |
| D. | P.V. of Tax Shields on Depreciation | = [24 x $PVIF_{(12,1)}$ + 14.4 x $PVIF_{(12,2)}$ + 8.64 x $PVIF_{(12,3)}$] x 0.46<br>= $17.96 million. |

E. P.V. of Interest Tax Shield on Displaced Debt (Refer to Debt Amortization Schedule)
$= [10.01 \times PVIF_{(12,1)} + 7.18 \times PVIF_{(12,2)} + 3.87 \times PVIF_{(12,3)}] \times 0.46$
= \$8.01 million

F. P.V. of Net Salvage Value
$= 6 \times PVIF_{(12,3)}$
= \$4.27 million

G. Net Advantage of Leasing
= A – B + C – D – E – F
= – \$0.33 million

Since NAL is positive the lease is economically viable at the given lease quote.

**(Displaced) Debt Amortization Schedule**

(\$ in million)

| Year | Loan o/s in the beginning | Interest Content | Capital Content | Rental |
|---|---|---|---|---|
| 1 | 58.87 | 10.01 | 16.63 | 26.64 |
| 2 | 42.24 | 7.18 | 19.46 | 26.64 |
| 3 | 22.78 | 3.87 | 22.78 | 26.65 |

## Valuing Lease Contracts with Monthly Payments[4]

In practice lease contracts require the lessee to make lease payments monthly or quarterly in advance. The following illustration gives the evaluation of such contracts:

### Illustration 7

Consider the data provided in illustration 6. Assume that the lease rate is \$35/\$1,000 payable monthly in advance. Calculate the net advantage of leasing.

### Solution

The following components of the lease-related cash flow stream defined in illustration 6 will undergo changes:

Initial Investment = \$ 60 million.

B. Present value of lease rentals
$= (60 \times 0.035 \times 12) \times PVIF\,\overline{A}_{m\,(17,3)}$
$= 25.2 \times \frac{i}{d^{(12)}} \times PVIF_{(i,3)}$

where i = 0.17
= 25.2 x 1.09 x 2.210

(Refer to Tables A.1 and A.5 at the end of the book)
= \$60.70 million.

C. P.V. of tax shield on lease payments
$= [60 \times 0.035 \times 12 \times PVIFA_{(12,3)} \times 0.46]$
= \$27.84 million

E. Present value of interest tax shields on displaced debt of \$60.70 million. (Refer Debt Amortization Schedule)
$= [(8.05 \times PVIF_{(12,1)} + (5.13 \times PVIF_{(12,2)} + (1.72 \times PVIF_{(12,3)}] \times 0.46$
= \$5.75 million

**Debt Amortization Schedule**

(\$ in million)

| Year | Amount outstanding at the beginning | Capital Content | Interest Content | Installment Amount |
|---|---|---|---|---|
| 1 | 60.70 | 17.15 | 8.05 | 25.2 |
| 2 | 43.55 | 20.07 | 5.13 | 25.2 |
| 3 | 23.48 | 23.48 | 1.72 | 25.2 |

4 This section presumes a knowledge of Sections A.4 to A.7 of Appendix A titled "Mathematics of Finance: A Primer".

**Note:** The reader is advised to read Section A.7 of Appendix A before studying the debt amortization schedule.

Net advantage of leasing = A – B + C – D – E – F = – $0.84 million

Since NAL is positive, the lease is financially advantageous at the given lease quote.

## Concept and Application of Break Even Lease Rental

The break even lease rental can be defined as that rental at which the lessee is indifferent between the options of leasing and buying, or that rental of which the net advantage of leasing will be nil. Clearly, the break even rental reflects the maximum rental which the lessee is willing to pay. Comparing the break even rental with the given lease quote enables the lessee to decide whether the lease quote can be accepted.

### Illustration 8

Consider the data provided in illustration 6. Assume monthly lease payments in advance. Calculate the break even monthly lease rental for Anurag Industries. Can the firm accept a lease quote of $35/1,000 per month payable in advance?

### Solution

Denote $L_B$ as the monthly break even rental. The value of $L_B$ can be obtained by setting NAL equal to Zero. We get

$$60 - (12L_B \times 1.09 \times 2.210) + (12L_B \times 0.46 \times 2.402) - 17.96 - [(3.83 \times 0.893) + (2.45 \times 0.797) + (0.81 \times 0.712)] \times 0.46\ L_B - 4.27 = 0.$$

$L_B$ = $4.70 million.

Since the break even monthly lease rental is more than the lease rental which Anurag Industries has to pay, viz $2.1 million (= 60 x 0.035), the lease proposal should be accepted.

**Note:** The amount of displaced debt in this case is equal to $12L_B \times 1.09 \times 2.210 = 28.91L_B$.

The required amortization schedule at a rate of interest of 17% p.a. will be as follows:

| Year | Amount outstanding at the beginning | Capital Content | Interest Content | Installment |
|---|---|---|---|---|
| 1 | $28.91L_B$ | $8.17L_B$ | $3.83L_B$ | $12L_B$ |
| 2 | $20.74L_B$ | $9.55L_B$ | $2.45L_B$ | $12L_B$ |
| 3 | $11.19L_B$ | $11.19L_B$ | $0.81L_B$ | $12L_B$ |

An analysis of the equation used by us for calculating the break even rental reveals that it is a function of the pattern of lease payments, the tax shields, the net salvage value, the lease period, and the cost of capital. The following observations can be made on the interrelationships between each one of these variables and the break even rental, holding others constant:

- A larger upfront payment increases the break even rental.
- A higher tax relevant rate of depreciation decreases the break even rental.
- A longer primary lease period decreases the break even rental.
- A higher cost of capital increases the break even rental.
- A higher net salvage value decreases the break even rental.

The break even rental constitutes an important input in negotiating lease rentals, about which there is further discussion in the following chapter.

## LEASE EVALUATION IN PRACTICE

The available empirical evidence on leasing practices is rather scant in the international context in general, and in the Indian context in particular. In this section, we present the findings of a few studies that have been carried out in the developed countries like US and the results of a survey carried out in developing country like India.

Most of the finance literature on leasing assumes that the real operating cash flows associated with leasing or owning are invariant (do not change) to the financial contract chosen and focuses primarily on the tax shelters associated with leasing or buying. This in turn implies that there must be no perceptible cross-sectional differences in the net benefits of leasing across assets and industries. But a managerial analysis of the observed variations in leasing practices carried out by Smith and Wakeman[5] has revealed a concentration of leases in certain industries and for certain types of assets. The authors conclude that this concentration is explained by a set of non-tax incentives which are typically not factored in a lease evaluation model. According to them, leasing is more likely if:

- The value of the asset is less sensitive to use and maintenance decisions.
- The asset is not specialized to the firm (lessee).
- The expected use of the asset is short, relative to the useful life of the asset.
- The corporate bond contracts (loan agreements) contain specific financial policy (restrictive) covenants.
- The management compensation contracts contain provisions specifying pay-offs as a function of the return on invested capital.
- The lessor has a comparative advantage in asset disposal.

We have seen that most of the financial evaluation models treat lease financing as a perfect substitute for debt financing. Some studies have empirically investigated the validity of this assumption. A reasonably comprehensive study conducted by Bowman has revealed that the market views leasing and debt financing as close substitutes. This finding provides empirical support to the framework for lease evaluation evolved in the previous section.

In the Indian context, a survey conducted by Kamath *et al.,* has revealed that the decision to lease is primarily influenced by,

- Hundred Percent Financing Provided under a Finance Lease.
- Simple Documentation.
- Expeditious Sanctions.
- Absence of Restrictive Financial Covenants in the Lease Agreement.
- No Requirement for Detailed Post-sanction Reporting.
- Flexibility in Terms of Structuring Lease Rentals.
- Off-Balance Sheet Feature of Finance Lease (which helps in maintaining the apparent borrowing capacity of the firm).

## EVALUATION OF LESSOR

Given the long-term relationship envisaged by a finance lease, the unlimited innovative ways of structuring a lease, and the legal and tax complexities that go with the structuring of such leases, selecting a lessor cannot be accomplished by

5 Clifford W Smith Jr. and L Mae Donald Wakeman, ‘‘Determinants of Corporate Leasing Policy", Journal of Finance: Vol. XL, No.3 July, 1985.

applying the "minimum lease quote" as the sole criterion of appraisal. In our opinion the following factors play an equally important part in the selection of a lessor:

– Role of the Lessor.
– Financial Position.
– Experience.
– Product Range.

## Role of the Lessor

Perhaps the most important question to be asked in big-ticket lease transactions is: Is the lessor acting as a lease broker or as a lease broker-cum-financier? In large leveraged leases, the lessor interacting with the lessee might be a minor equity participant and the lessee may be required to deal with a large group of equity and loan participants either directly or through the owner/indenture trustees. In such cases the lessee must consider the operational difficulties involved and more importantly evaluate the character and the capacity of these financial intermediaries for backing up the lease commitments. This is indeed an onerous task.

## Financial Position

Where the lease involves a substantial financial commitment or where the lessee intends accessing lease finance on an ongoing basis, the lessee has to undertake a thorough analysis of the financial position and condition of the lessor. The analysis can be in terms of:

– Profitability.
– Growth.
– Risk.

The financial indicators that can be employed for this purpose are provided in the following Table:

| Dimension | Indicator |
|---|---|
| Profitability | – Return on Total Assets (ROA) = $\frac{PBIT}{TA}$ |
| | – Return on Equity (ROE) = $\frac{PAT}{NW}$ |
| Risk | – Coefficient of Variation (CV) of the chosen Measure of Profitability |
| | $CV(ROA) = \frac{SD(ROA)}{\overline{ROA}}$ |
| | $CV(ROE) = \frac{SD(ROE)}{\overline{ROE}}$ |
| Growth | – Compounded Annual Growth Rates in:<br>• Investment in Leased Assets (Gross Block)<br>• Profit before Interest & Taxes<br>• Capital Employed. |

**Explanatory Notes:**

1. PBIT : Profit Before Interest and Taxes
   TA : Total Assets
   PAT : Profit After Tax
   NW : Net Worth
   SD : Standard Deviation
   $\overline{ROA}$ : Arithmetic Average of Return on Total Assets
   $\overline{ROE}$ : Arithmetic Average of Return on Equity
   Capital Employed : Net Worth plus all Liabilities with a Maturity period of one year or more.

2. 'Risk' in finance literature measures the deviation of individual outcomes from the average (expected) outcome. While a simple measure of such variability can be the Range – the difference between the largest and the smallest outcomes – we have used a more sophisticated measure – the coefficient of variation – because it permits inter-lessor comparison.
3. Ideally financial data relating to the last five years are required for measuring the C.V. and the growth rates.

While appraising the financial performance of the leasing company, the lessee should bear in mind that the depreciation policy pursued by the company has a significant bearing on the profitability. Other things being equal, a depreciation policy which amortizes the cost of the asset over the primary lease period portrays a more accurate picture than a straight line depreciation policy which provides for the minimum statutory depreciation.

Another aspect of the financial evaluation which must be considered is the funding of leases. Given the ceiling on bank borrowing and the limited lines of credit available from the financial institutions, public deposits constitute an important source of finance for many leasing companies. So, the ability of a leasing company to tap this source on an ongoing basis is an important consideration. One indicator of this ability is the rating provided by CRISIL.

## Experience

The experience of the lessor in the financial services industry is particularly important to a lessee when the lease under review calls for managing certain financial, legal and tax issues not addressed by the typical lease agreements. Structuring large leveraged leases or designing complex cross–border leases are some illustrative areas where the lessor's financial acumen and knowledge of the relevant legal and tax issues are put to an acid test.

## Product Range

Firms implementing large projects where 'lease finance' is just one component of the overall financing plan look for financial intermediaries which can play the role of a "one-stop shop". Such financial intermediaries have to offer a wide range of fund based and non-fund based financial services which include leasing, hire purchase, merchant banking, trade bill discounting, etc., to provide a comprehensive package to the client.

### RATING A LESSOR

To simplify the process of selecting the right lessor, the Bank Ameri Lease Group has come up with a questionnaire in a yes/no response format which is reproduced below. The rating of the lessor depends upon the number of the negative responses. The greater the number of negative responses, the more the lessor is to be avoided.

| **Box 2: Lessor Evaluation Questionnaire** | |
|---|---|
| | Yes/No |
| 1. Will sign a firm commitment subject only to documents. | |
| 2. Will not break entire transaction to a third party who may be difficult to deal with. | |
| 3. Is adequately capitalized to back-up a firm commitment. | |
| 4. Will furnish an audited statement; will state net worth. | |
| 5. Is substantial from a financial and management point of view. | |
| 6. Is experienced and has a clear history in the equipment leasing business. | |
| 7. Has a good anticipated future in equipment leasing and will be available for consultation throughout the term of the lease. | |
| 8. Is not a promoter type who will disappear after payment of his fee. | |
| 9. Is familiar with the special legal problems related to a lease. | |

10. Understands and can correctly analyze the income tax considerations.
11. If undercapitalized, will post a deposit to insure performance.
12. Will disclose the full amount of any fees he will receive in the transaction.
13. Has not purposely submitted a 'Low Bill' bid.
14. If a broker, will not enter into special arrangements for his fee such as "residual sharing" which may jeopardize the "true lease" and result in liability to the lessee under the tax indemnity clause.
15. All material facts will be presented in obtaining the tax ruling since the ruling may be valueless if this is not the case and the lessee may then be liable under the tax indemnity clause.
16. The transaction may be booked for financial accounting purposes as presented.
17. Has financial resources to do follow-on lease financing of retrofits, improvements, or additions.
18. Will not break the lease to a number of parties, not one of whom can bind the others and will be difficult to deal with as a group when changes are later needed.
19. Will not disrupt the lessee's credit standing by contracting financial debt and credit sources all over the country in attempting to break the transaction.
20. If the commitment is not firm, the broker will disclose in advance how he will go about finding equity participants and whom he will contact.
21. If the broker intends to bring in other brokers to help find equity participants, he will disclose who they are, whom he will contact, the amount of their fees, and who will pay the fees.
22. The broker will make correct representations to the equity participants so that they will thoroughly understand their rights and obligations under the lease and not become disgrunted investors with whom it will be difficult to deal should the need arise.
23. The equity participants will be financially able to meet their obligations to the owner trustee.
24. The overrall cost of the transaction has not been needlessly raised by a broker's fee.

*Source: www.amerilease.com*

## SUMMARY

- A finance lease can be evaluated either as an investment alternative or as a financing alternative depending upon the a priori information available about the financial desirability of a capital investment. In the absence of any a priori information about the financial desirability, 'leasing' and 'buying' are evaluated as two mutually exclusive investment alternatives. Given prior knowledge of the financial desirability or need for a capital investment, 'leasing' is evaluated as one of the financing alternatives.
- There are a number of financial models available for evaluating a 'lease' and there is no consensus till date on the most appropriate model. The following four financial models represent reasonably well the spectrum of views on this issue: (a) Weingartner Model, (b) Equivalent Loan Model, (c) Bower-Herringer-Williamson Model, (d) Bower Model and (e) Barring the first model, the other three models evaluate leasing as a financing alternative.
- The application of the Weingartner Model for evaluating a 'lease' as an investment alternative involves the following steps: (a) Compute the NPVs of the 'lease' and 'buy' alternatives, (b) Select the alternative with the higher positive NPV.

- The application of the Weingartner Model for evaluating a lease as a "financing alternative" involves the following steps:

  a. Compute Net Advantage of Leasing (NAL) defined as:

     Initial Investment – P.V. (Lease Rentals) – Management Fee + P.V. (Tax Shield on Lease Rentals) + P.V. (Tax Shield on Management Fee) – P.V. (Tax Shield on Depreciation) – P.V. (Net Salvage Value).

  b. Lease the equipment if NAL is positive. Buy the equipment if NAL is negative.

  The discount rate employed is the marginal cost of capital based on the mix of debt and equity in the target capital structure. The model assumes that debt includes present and future lease obligations as well.

- We believe that the risk characterizing the lease payments on the one hand and the risks characterizing the realization of the tax shelters and net salvage value on the other hand are different. Hence, different discount rates have to be used for discounting the two sets of cash flows. For reasons stated in the chapter we also believe that the debt-displacement effect of leasing must be explicitly recognized, and we define NAL as follows:

  NAL = Investment Cost – P.V. (Lease Payments discounted at $K_d$) + P.V. (Tax Shields on Lease Payments discounted at K) – Management Fees + P.V. (Tax Shield on Management Fees discounted at K) – P.V. (Depreciation Tax Shields discounted at K) – P.V. (Interest Tax Shields discounted at K) – P.V. (Residual Value discounted at K)

  Where,

  $K_d$ = Pre-tax cost of debt.
  K = Marginal cost of capital.

- Setting NAL to zero and solving for the unknown rental value provides the break even rental from the lessee's point of view. The maximum lease rental acceptable to the lessee.

- In practice, the decision to lease is significantly influenced by several non-tax based factors like, (a) Simple Documentation, (b) Expeditious Sanction, (c) Absence of Restrictive Financial Covenants in the Lease Agreement, (d) No Requirement for Detailed Post-sanction Reporting, (e) Flexibility in terms of Structuring Lease Rentals, and (f) Off-Balance Sheet feature of Finance Lease (which helps in maintaining the apparent borrowing capacity of the firm).

- Given the long-term relationship envisaged by a finance lease, the unlimited innovative ways of structuring a lease and the legal and tax complexities that go with the structuring of innovative leases, selecting the right type of lessor assumes special significance. The following factors must be taken into account in selecting the lessor: (a) Role of the Lessor as a Financier, (b) Financial position of the Lessor, (c) Experience of the Lessor, and (d) Product Range.

# Appendix I

## Evaluation of Back-to-Back Short-term Leases

The examples we have presented so far on the evaluation of a finance lease have implicitly assumed that the economic life of the asset is known with certainty and the primary period of a lease coincides with the economic life. If we relax the assumption relating to the certainty of economic life and consider a situation where the economic life is uncertain (a random variable), the conventional non-cancelable finance lease may not turn out to be an appropriate way of leasing the equipment.

One alternative that has been evolved for leasing such assets is the Back-to-Back Short-term Lease arrangement. Under this arrangement, a series of renewable leases are structured such that the total duration of these short-term leases equate the maximum economic life of the asset. The arrangement partakes of the characteristics of both a finance lease and an operating lease. The arrangement resembles a finance lease in the sense that each short-term lease is a non-cancelable lease. The arrangement is similar to an operating lease in the sense that the cost of the asset is not fully amortized over any one short-term lease. While the arrangement has a built-in renewal option, the lease rates at which the future leases will be renewed are not determined at the inception of the lease.

From the lessee's angle, the major advantage of this arrangement is the flexibility. The arrangement permits a lessee to divest once the asset concerned ceases to have any economic value to him. At the same time, the lessee runs the risk of being deprived of the asset because the lessor also enjoys the right of cancellation. The other disadvantage of this arrangement is that the lease rentals for the short-term leases beyond the initial one remain unspecified at the inception of this arrangement.

Given the uncertainty associated with the economic life of the asset, the financial evaluation of a Back-to-Back Short-term lease vis-á-vis a finance lease involves comparison of the expected values of the NPVs of the two alternatives. The following example illustrates the mechanics involved.

### Example A.1

Innovative Engineering Systems, a venture-capital funded company, is planning to invest in a state of the art equipment costing $160 million. Given the uncertainties associated with both the product market and technological lives of the equipment, the Vice President (Technical) of the company believes that the useful life of the equipment is a stochastic (random) variable with the following probability distribution:

| Useful Life (in years) | 3.0 | 4.0 | 5.0 | 6.0 |
|---|---|---|---|---|
| Probability | 0.4 | 0.2 | 0.2 | 0.2 |

After reviewing the above probability distribution, the Vice President (Finance) of the Company is not very keen on purchasing the equipment. He believes that leasing the equipment preferably under a flexible arrangement will make more commercial sense. He is currently considering the following lease proposals:

**Proposal I:** This proposal received from Classic Leasing Limited is a finance lease under which the lessee will have to pay a rental of $325/$1,000 a year for a non-cancelable period of five years. After five years, the lease can be renewed for another three years on a yearly basis at a rental of $18/$1,000 a year. The lease rentals are payable annually in arrears.

**Proposal II:** This proposal received from Sunrise Industrial Finance Corporation (SIFC), the wholly owned subsidiary of the supplier of the equipment; involves a Back-to-Back Short-term Lease arrangement. Under this

arrangement, two short-term leases, each for a duration of three years will be structured. The lease rentals payable annually in arrears for the first short-term lease will be as follows:

| Year | Lease Rental ($ in million) |
|---|---|
| 1 | 45 |
| 2 | 45 |
| 3 | 45 |

On expiry of the lease period, the lease can be renewed for another three years on the basis of the prevailing lease rate for equipment of that vintage.

It has been observed that the capital costs of similar hi-technology equipment have been escalating at the rate of 15% p.a., over the last three years. The Vice President (Finance) believes that the ratio of the cost of used equipment to the cost of new equipment will be 0.20 after three years. He also believes that the net realizable values of the equipment after years 4 and 5 will be insignificant. He decides to project the lease rentals for the second lease term assuming a pre-tax rate of return of 25% to SIFC.

The cash flow projections that have been developed reveal that the investment will result in an incremental EBDIT of $60 million in year 1, $75 million in year 2 and $90 million p.a., in years 3 through 6. The tax relevant rate of depreciation is 25% and the marginal rate of tax (including surcharge) is 51.75 percent. The post-tax required rate of return is 14% p.a. and the incremental cost of debt is 17% p.a.

Make a financial evaluation of proposals I and II and recommend the appropriate course of action.

### Answer

We have to evaluate the NPVs of the following three alternatives:

– Purchase.

– Finance Lease.

– Back-to-Back Short-term Lease.

We shall define N as the random variable representing the useful life of the asset.

### Alternative (A): Purchase the Equipment

The net present value of this option will be as follows:

NPV(P) = P.V. [EBDIT (1 – T)] + P.V. (Tax Shield on Depreciation) + P.V. (Salvage Value) – Initial Investment.

The present value of EBDIT (1 – T) depends upon the value of N.

For N = 3, P.V. [EBDIT(1 – T)] @ K = 14%
= [60 (1 – 0.5175) x 0.877] + [75 (1 – 0.5175) x 0.769]
+ [90 (1 – 0.5175) x 0.675]
= $83.12 million

For N = 4, P.V. [EBDIT (1 – T)] = $109.09 million

For N = 5, P.V. [EBDIT (1 – T)] = $131.86 million

For N = 6, P.V. [EBDIT (1 – T)] = $151.87 million

P.V. Tax Shield on Depreciation at K = 14% and
N = 3 is equal to [(40 x 0.877) + (30 x 0.769) + (22.5 x 0.675)] x 0.5175
= $37.95 million

Since the net salvage value of the equipment beyond the third year is insignificant, we will assume that it will be retained and the full deFpreciation tax shelter available under the Income Tax Act will be claimed. The reader can verify that the present value of the tax shields over the six year period will be equal to $48.75 million.

Salvage value of the equipment after three years = $160\ (1.15)^3 \times 0.2 = \$48.67$ million

P.V. of the salvage value realizable after three years = $48.67 \times PVIF_{(14,3)} = \$32.85$ million

Net salvage values at the end of years four, five and six are taken to be insignificant.

For different values of N, the values of NPV(P) will be as follows:

($ in million)

| N | P.V EBDIT (1 – T) | P.V. (Dep. Tax Shield) | P.V. (Net Salvage Value) | Initial Investment | NPV(P) |
|---|---|---|---|---|---|
| 3 | 83.12 | 37.95 | 32.85 | 160 | – 6.08 |
| 4 | 109.09 | 48.76 | 0 | 160 | – 2.15 |
| 5 | 131.86 | 48.76 | 0 | 160 | 20.62 |
| 6 | 151.87 | 48.76 | 0 | 160 | 40.63 |

Expected NPV(P) = (– 6.08 x 0.4) + (– 2.15 x 0.2) + (20.62 x 0.2) + (40.63 x 0.2)
= $9.39 million.

### Alternative (B): Finance Lease (FL)

NPV(FL) = P.V. [EBDIT (1 – T)] – P.V. (Lease Rentals) + P.V. (Tax Shield on Lease Rentals) + P.V. (Tax Shield on Depreciation) – P.V. (Interest tax shield on displaced debt)

P.V. of the lease rentals during primary period at K = 17%

$= (160 \times 0.325) \times PVIFA_{(17,5)} = \$166.35$ million

P.V. of the lease rentals during the secondary period

$= (160 \times 0.018) \times PVIF_{(17,6)} = \$1.12$ million

P.V. of tax shield on lease rentals payable during primary period

$= (160 \times 0.325 \times 0.5175) \times PVIFA_{(14,5)} = \$92.38$ million

P.V. of tax shield on lease rentals payable during secondary period

$= (160 \times 0.018 \times 0.5175) \times PVIF_{(14,6)} = 1.49 \times 0.456 = \$0.68$ million

P.V. (Interest tax shields on displaced debt)

= [(28.28 x 0.877) + (24.25 x 0.770) + (19.53 x 0.675) + (14.01 x 0.592) + (7.55 x 0.519)] x 0.5175
= $35.64 million

P.V. Tax Shield on Depreciation at K = 14% and
N = 3 is equal to [(40 x 0.877) + (30 x 0.769) + (22.5 x 0.675)] x 0.5175

= $37.95 million.

Since the net salvage value of the equipment beyond the third year is insignificant, we will assume that it will be retained and the full depreciation tax shelter available under the Income Tax Act will be claimed. The reader can verify that the present value of the tax shields over the six year period will be equal to $48.75 million.

**Amortization Schedule for Debt Displaced**

($ in million)

| Year | Amount o/s at the beginning | Rate of Interest | Interest Content | Capital Content | Debt Service Charge |
|---|---|---|---|---|---|
| 1 | 166.35 | 0.17 | 28.28 | 23.72 | 52 |
| 2 | 142.63 | 0.17 | 24.25 | 27.75 | 52 |
| 3 | 114.88 | 0.17 | 19.53 | 32.47 | 52 |
| 4 | 82.41 | 0.17 | 14.01 | 37.99 | 52 |
| 5 | 44.42 | 0.17 | 7.55 | 44.42 | 51.97 |

For different values of N, the values of NPV(FL) will be as follows:

| N | P.V.EBDIT (1–T) | P.V. (Lease Rentals) | P.V. (Tax Shield on LR) | P.V. (Int. Tax Shield) | NPV(FL) |
|---|---|---|---|---|---|
| 3 | 83.12 | 166.35 | 92.38 | 35.64 | –26.49 |
| 4 | 109.09 | 166.35 | 92.38 | 35.64 | –0.52 |
| 5 | 131.86 | 166.35 | 92.38 | 35.64 | 22.25 |
| 6 | 151.87 | 167.47 | 93.06 | 35.64 | 41.82 |

Expected NPV(FL) = (–26.49 x 0.4) + (–0.52 x 0.2) + (22.25 x 0.2) + (41.82 x 0.2)
= 2.11

### Alternative (C): Back-to-Back Short-term Lease (BBSTL)

NPV(BBSTL) = P.V. [EBDIT (1 – T) – P.V. (Lease Rentals)]
+ P.V. (Tax Shield on Lease Rentals)

The reader must note that we have not considered the interest tax shields and depreciation tax shields on displaced debt in the computation of NPV(BBSTL). This is because of the fact that the back-to-back short-term lease is not a finance lease. We have treated the lease rentals payable over the lease term like any other operating cash outflow and valued these flows at the marginal cost of capital.

P.V. (Lease Rentals payable during the initial lease period)
= 45 x $PVIFA_{(14,3)}$ = 104.49

P.V. (Tax Shield on Lease Rentals payable during the initial lease period)
= 104.49 x 0.5175 = 54.07

The equated annual lease rental ($L_2$) payable during the second lease term can be obtained from the equation:

$L_2$ x $PVIFA_{(25,3)}$ = 48.67

i.e., 1.952 $L_2$ = 48.67

i.e., $L_2$ = $25 million (approx.)

The discount rate of 25% represents the rate of return required by the lessor. The value of $48.67 million is the estimated market price of the used equipment after three years and has been derived from the assumptions made by the finance manager.

P.V. (Lease Rentals payable during the second lease period)

= 25 x $PVIFA_{(14,3)}$ x $PVIF_{(14,3)}$ = $39.18 million

P.V. (Tax Shield on Lease Rentals payable during the second lease period)

= 39.18 x 0.5175 = $20.28 million

For different values of N, the values of NPV(BBSTL) will be as follows:

| N | P.V. EBDIT (I – T) | P.V. (Lease Rentals) | P.V. (Tax Shield on Lease Rentals) | NPV (BBSTL) |
|---|---|---|---|---|
| 3 | 83.12 | 104.49 | 54.07 | 32.7 |
| 4 | 109.09 | 143.67 | 74.35 | 39.77 |
| 5 | 131.86 | 143.67 | 74.35 | 62.54 |
| 6 | 151.87 | 143.67 | 74.35 | 82.55 |

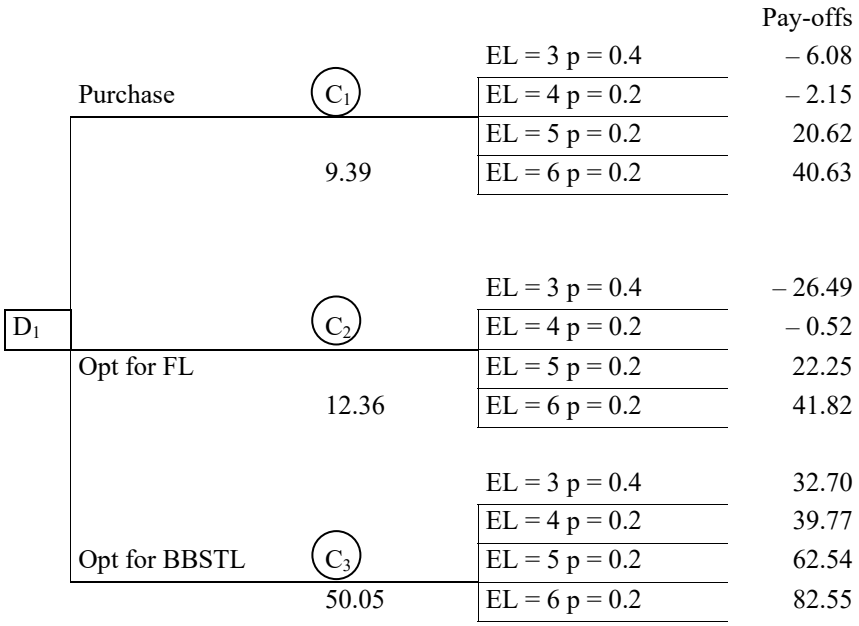
Expected NPV(BBSTL)
= (32.7 x 0.4) + (39.77 x 0.2) + (62.54 x 0.2) + (82.55 x 0.2) = $50.05 million

The expected net present values of the three alternatives are as follows:

| Alternative | Expected (NPV) ($ in million) |
|---|---|
| Purchase | 13.71 |
| Finance Lease | 12.36 |
| Back-to-Back Short-Term Lease | 50.05 |

The NPV of the Back-to-Back Short-Term Lease is substantially higher than the NPVs of purchase and finance lease because of the high probability associated with an economic life of 3 years and the option available for cancellation after three years.

**Notes:** The alternatives available for evaluation and the states of nature (the uncertainty associated with the economic life) can be represented in the form of a decision tree as follows:




**Explanatory Notes:**

1. $D_1$ denotes the first decision node.
2. $C_1$, $C_2$ and $C_3$ denote the chance forks.
3. EL stands for Economic Life in years.
4. p stands for the probability associated with a given economic life.
5. The pay-offs are denominated in million of dollars.

# Appendix II

## A Note on Lease Evaluation from Lessee's Angle

A lessee can look at lease either as an investment alternative or a finance alternative i.e., either it can be looked up as one of the ways of investing or it can be considered as one of the ways of financing. In the first case, an investment decision has not yet been done and as such lease is considered as an alternative to buying. In the second case, investment decision has been made and leasing is considered as one way of financing and looked as an alternative to borrowing.

A lease from lessee's angle can be evaluated by four different models – Weingartner's Model, Equivalent Loan Model, BHW Model and Bower's Model. Each model has its own assumptions and the ways of evaluating lease. The table below gives the assumptions and the method of evaluation of each model and the suggested framework model:

| Assumption | Evaluation | Discounting Factor | Amount Substituted by Lease |
|---|---|---|---|
| **Weingartner's Model** Debt includes lease finance and all investments are funded with mix of debt, lease finance and equity. | Lease is considered as an alternative to buying and if investment decision has not been made, lease should be evaluated by the Net Present Value criterion and if investment decision has already been made Net Advantage of Leasing criteria should be applied. As all investments are assumed to be funded by mix of debt, lease and equity, interest tax shields are not considered as a cash flow while calculating NPV (Purchase). | As the model assumes that all the cash flows carry the same risk as the risk of firm, all the cash flows are discounted at the marginal cost of capital. | |
| **Equivalent Loan Model** | | | |
| Lease is considered as a substitute to debt. | Lease is considered as a financing alternative i.e. investment decision is already made and assumed to be funded by borrowing and lease is considered as an alternative to borrowing. As such interest tax shields forgone are considered as cash outflow while calculating NAL. | Assumes lease payments and all the other cash flows carry the same risk as debt payments and as such lease payments are discounted at the marginal cost of debt and tax shields and salvage value are discounted at the post-tax cost of debt. | Assumes that amount borrowed would be equal to the present value of lease payments. |

| Assumption | Evaluation | Discounting Factor | Amount Substituted by Lease |
|---|---|---|---|
| **Bower-Herringer-Williamson Model** | | | |
| Lease is a substitute to debt. | Leasing is considered as an alternative to borrowing and interest tax shields forgone are considered as cash outflow while evaluating lease option. | Lease payments are considered to carry the same risk as loan payments and are discounted at the marginal cost of debt. Tax shields and salvage value are considered to carry the same risk as the business and finance risk of the firm and are discounted at the marginal cost of capital. | The amount substituted by lease is assumed to be equal to the cost of the asset. |
| **Bower Model** | | | |
| Lease is a substitute to debt. | Leasing is considered as an alternative to borrowing and interest tax shields forgone are considered as cash outflow while evaluating lease option. | Lease payments are considered to carry the same risk as loan payments and are discounted at the marginal cost of debt. Salvage value is considered to carry the same risk as the business and finance risk of the firm and is discounted at the marginal cost of capital. Tax shields are discounted at a rate specified by the decision maker. | The amount substituted by lease is assumed to be equal to the cost of the asset. |
| **Suggested Framework** | | | |
| Lease is a substitute to debt. | Leasing is considered as an alternative to borrowing and interest tax shields forgone are considered as cash outflow while evaluating lease option. | Lease payments are considered to carry the same risk as loan payments and are discounted at the marginal cost of debt. Tax shields and salvage value are considered to carry the same risk as the business and finance risk of the firm and are discounted at the marginal cost of capital. | The amount substituted by lease is assumed to be equal to the present value of lease payments. |

## Chapter XIII

# Lease Evaluation: The Lessor's Angle

**After reading this chapter, you will be conversant with:**

- Break Even Rentals of the Lessor
- Negotiating Lease Rentals
- Concepts of Gross Yield and Add-on Yield
- Gross Yield Based Pricing
- Internal Rate of Return (IRR) of a Lease
- Assessment of Lease Related Risks
- Assessment of Default Risk

## Introduction

This chapter focuses on the pricing of a lease using the risk-return framework. The chapter is divided into three parts. The first part dwells on the computation of the break even rental which sets the floor price of a lease. The second part discusses the concept of gross yield and the pricing of a lease based on the gross yield. The third part deals with the sources of lease-related risk, the assessment of credit risk and product risk, and the methods of risk management.

## BREAK EVEN RENTAL FOR THE LESSOR

The break-even lease rental from the lessor's angle is the minimum lease rental which the lessor can accept. At this rental, the Net Advantage of Leasing (NAL) from the lessor's point of view will be equal to zero. Obviously, the break even rental sets the floor price of a lease.

We are already familiar with the application of the NAL approach for determining the break-even rental from the lessee's point of view. We will extend this approach to determining the break-even lease rental for the lessor. For this purpose, let us take a quick look at the lease related cash flow stream from the lessor's angle. (Refer Table 1)

**Table 1: Composition of the Cash Flow Stream**

| Constituent | From the Point of View of | |
|---|---|---|
| | Lessor | Lessee |
| Initial investment | Outflow | Inflow |
| Management fee | Inflow | Outflow |
| Direct costs | Outflow | – |
| Lease payments | Inflow | Outflow |
| Income tax on lease payments[1] | Outflow | Inflow (tax shield) |
| Tax shields on depreciation | Foregone Inflow | Outflow |
| Sales tax on lease rental | – | Outflow |
| Residual value | Inflow | Outflow (or foregone inflow) |

To determine the break even rental from the Lessor's stand point we set the present value of the lessor's cash flow stream equal to zero and solve for the lease rental which is the unknown variable. The discount rate to be used will be the cost of funds to the lessor which will be:

$$k' = k_E \times \frac{E}{D+E} + k_D(1-T) \times \frac{D}{D+E}$$

where,

$k'$ = marginal cost of funds,

$k_E$ = marginal cost of equity,

$k_D$ = marginal cost of debt, and

D:E = target debt-equity ratio of the lessor.

The following examples illustrate the application of the NAL approach in determining the floor price of a lease.

1 It is assumed that the impact of the lease tax will be on the lessee.

### Illustration 1

Everlease Company (ELECO) typically writes five year leases with rentals payable annually in arrears. The following information is available about a lease under review:

- Equipment Cost : $33 million (inclusive of sales tax @10%)
- Salvage Value after 5 Years : 10% of the original cost
- Initial Direct Cost : $0.3 million (front ended)
- Management Fee : $0.5 million (front ended)

The cost of funds to ELECO is 14% and the marginal rate of tax is 46%.

Calculate the break even rental for ELECO assuring a tax relevant rate of depreciation of 25%?, 40%?, 100%?

### Solution

Define L as the annual break even rental for ELECO. The components of NAL to ELECO can be computed as follows:

i. Equipment cost : $33 million

ii. Present value of lease rentals : $L \times PVIFA_{(14,5)} = 3.433L$

iii. Present value of tax on lease rentals : $0.46 \times L \times PVIFA_{(14,5)} = 1.579L$

iv. a. Present value of tax shield on depreciation @25% p.a. : $[8.25 \times PVIF_{(14,1)} + 6.19 \times PVIF_{(14,2)} + 4.64 \times PVIF_{(14,3)} + 3.48 \times PVIF_{(14,4)} + 2.61 \times PVIF_{(14,5)}] \times 0.46$
= $8.53 million

b. Present value of tax shield on depreciation @40% p.a. : $[13.2 \times PVIF_{(14,1)} + 7.92 \times PVIF_{(14,2)} + 4.75 \times PVIF_{(14,3)} + 2.85 \times PVIF_{(14,4)} + 1.71 \times PVIF_{(14,5)}] \times 0.46$
= $ 10.79 million

c. Present value of tax shield on depreciation @ 100% p.a. : $33 \times PVIF_{(14,1)} \times 0.46$
= $13.31 million

v. Present value of initial direct costs : $0.3 million

vi. Present value of management fee : $0.5 million

vii. Present value of tax shield on initial direct costs : $0.3 \times 0.46 \times PVIF_{(14,1)}$
= $ 0.12 million

viii. Present value of tax on management fee : $0.46 \times 0.5 \times PVIF_{(14,1)} = \$0.20$ million

ix. Present value of salvage value : $3.3 \times PVIF_{(14,5)} = \$1.71$ million

Given a tax relevant depreciation rate of 25% p.a., L can be obtained from the equation:

$$-33 + 3.433L - 1.579L + 8.53 - 0.3 + 0.5 + 0.12 - 0.2 + 1.71 = 0$$

i.e., $L = \$12.21$ million

The reader can verify that for tax relevant depreciation rates of 40% and 100%, the values of L will be $10.99 million and $9.63 million respectively.

Therefore the depreciation related tax shields for the different rates of depreciation will be as follows:

**Table 2: Depreciation-Related Tax Shields**

($ in million)

| Tax-Relevant Rate of Depreciation | P.V. of the Tax Shields |
|---|---|
| 25% | $[0.5 \times 8.25 \times PVIF_{(14,0)} + 7.22 \times PVIF_{(14,1)} + 5.41 \times PVIF_{(14,2)} + 4.06 \times PVIF_{(14,3)} + 3.05 \times PVIF_{(14,4)} + 2.28 \times PVIF_{(14,5)}] \times 0.46 = 9.36$ |
| 40% | $[0.5 \times 13.2 \times PVIF_{(14,0)} + 10.56 \times PVIF_{(14,1)} + 6.34 \times PVIF_{(14,2)} + 3.80 \times PVIF_{(14,3)} + 2.28 \times PVIF_{(14,4)} + 1.37 \times PVIF_{(14,5)}] \times 0.46 = 11.67$ |
| 100% | $0.5 \times 33 \times PVIF_{(14,0)} \times 0.46 = 7.59$ |

Based on the depreciation tax shields given in Table 2, the break-even rentals have to be reworked. The reader can verify that the break even rentals at depreciation rates of 25%, 40%, and 100% are $11.77 million, $10.52 million, and $12.72 million respectively.

We can combine the results obtained in parts (a) and (b) in the form of a two-way table (Refer Table 3).

**Table 3: Impact of Depreciation and Lease Timing on Break Even Rental**

($ in million)

| Duration of Lease during year 1 / Tax Relevant Rate of Depreciation | More than six months | Less than six months |
|---|---|---|
| 25% | 12.21 | 11.77 |
| 40% | 10.99 | 10.52 |
| 100% | 9.63 | 12.72 |

We find:

i. Setting up a lease transaction in the second half of a financial year (between September 30th to March 31st) lowers the break even rental over what is required if the transaction has been set-up in the first half for assets with depreciation rates of 25% and 40%.

ii. Where the lease runs for a duration of more than six months in the first year, the break even rental is reduced as the rate of depreciation increases.

iii. Where the lease runs for a duration of less than six months in the first year, the relationship stated in (2) does not hold good for an asset which qualifies for 100% depreciation.

**Illustration 2**

Innovative Financial Services writes the following types of lease contracts:

| Type | Duration of Primary Lease Period (in years) | Tax Relevant Rate of Depreciation (%) | Residual Value as a % of Original Cost |
|---|---|---|---|
| I | 3 | 40 | 8 |
| II | 5 | 25 | 5 |

The marginal tax rate applicable to the company is 46% and the post-tax cost of funds is 14% p.a. On interstate purchases of capital equipment the company is required to pay central sales tax at the rate of 10% on the basic price.

Compute the minimum rental the company should charge for the two types of lease contracts. Assume that the company collects lease rentals on a monthly basis in advance.

**Solution**

We shall assume an investment cost of $ 1,000 and use the following notations to denote the monthly break even rentals for the two types of lease contracts:

$L_1$ – Type I contract

$L_2$ – Type II contract

To determine $L_1$, we must set the NAL equation involving $L_1$ to zero. For this purpose, we must determine the following:

i. Investment cost : $1,000

ii. Present value of lease rentals : $12L_1 \times PVIF\overline{A}_{m(14,3)} = 29.93\ L_1$

iii. Present value of tax on lease rentals : $12L_1 \times PVIF\overline{A}_{m(14,3)} \times 0.46 = 12.82L_1$

iv. Present value of tax shields on depreciation : $[400 \times PVIF_{(14,1)} + 240 \times PVIF_{(14,2)} + 144 \times PVIF_{(14,3)}] \times 0.46 = 290.98$

v. Present value of residual value : $1000 \times 0.08 \times PVIF_{(14,3)} = 54$

Setting the NAL equal to zero, we get,

$$-1000 + 29.93L_1 - 12.82L_1 + 290.98 + 54 = 0$$

i.e., $L_1 = 38.28$

Therefore, the minimum lease rental innovative must charge for writing a lease contract will be $38.28/$1,000/month.

## NEGOTIATING LEASE RENTALS

A knowledge of the break-even rentals of the lessor and the lessee helps in defining the range in which the rental can be negotiated. The break even rental of the lessor defines the lower limit of this range which we shall denote as L B′ . The break even rental of the lessee defines the upper limit of the range which we shall denote as LB′ . The difference LB – LB′ is defined as the spread between the break- even rentals of the lessor and the lessee. The rental that is finally agreed upon will however, depend upon other factors like the prevailing market conditions, the creditworthiness of the lessee and the prospects of doing business with the lessee on a continuing basis. But as long as this rental remains within the range (LB, LB′ ), both the lessor and the lessee will enjoy a positive net advantage of leasing. The following illustration explains this point.

### Illustration 3 (Determining the Bargaining Area)

The Alexander Paper Mills Lease firm (APML, hereafter) has decided to invest in an imported pulp quality control equipment for which the following particulars are available:

i. Cost of the Equipment : $30 million
ii. Tax Relevant Rate of Depreciation : 40%
iii. Useful Life : 5 Years
iv. Estimated Net Salvage Value after Five Years : Negligible

The company has received a lease proposal from Integrated Leasing to structure a finance lease at a rental of $25 ptpm payable at the beginning of every month.

The marginal cost of debt and the marginal cost of capital for APML are 17% (pre-tax) and 14% respectively. The marginal tax rate is 46%.

You have been informed that ILL requires a minimum post-tax return of 13% on its lease portfolio:

a. Determine the break even rentals for APML and ILL.

b. Comment on the spread available between the two break even rentals.

### Solution

a. We will work with an investment cost of $1,000. The break even rental for APML (LB) can be obtained as follows:

i. Investment Cost = $1,000

ii. Present Value of Lease Rentals = $12LB \times PVIF\bar{A}_{m\ (17,5)}$

$$= 12LB \times \frac{i}{d^{(12)}} PVIFA_{(17,5)}$$

at i = 17%
(Refer Tables A.1 and A.5 at the end of the book)

$$= 12LB \times 1.09 \times 3.199 = 41.84\ LB$$

iii. Present Value of Tax Shield on Lease Rentals = $12LB \times PVIFA_{(14,5)} \times 0.46$
$= 18.95L$

iv. Present Value of Tax Shields forgone on Depreciation = $[400 \times PVIF_{(14,1)} + 240 \times PVIF_{(14,2)} + 144 \times PVIF_{(14,3)} + 86.4 \times PVIF_{(14,4)} + 51.84 \times PVIF_{(14,5)}] \times 0.46$

$$= 326.88$$

v. Present Value of Interest Tax Shields on Displaced Debt (Refer Table 4) = $[6.03LB \times PVIF_{(14,1)} + 5.02LB \times PVIF_{(14,2)} + 3.83LB \times PVIF_{(14,3)} + 2.44LB \times PVIF_{(14,4)} + 0.84LB \times PVIF_{(14,5)}] \times 0.46$

$$= 6.26\ LB$$

**Table 4: (Displaced) Debt Repayment Schedule**

| Year | Amount Outstanding at the Beginning | Capital Content | Interest Content = (B) x 0.17–1.08 | Installment |
|---|---|---|---|---|
| (A) | (B) | (C) | (D) | (E) |
| 1 | 41.84 LB | 5.97 LB | 6.03 LB | 12 LB |
| 2 | 35.87 LB | 6.98 LB | 5.02 LB | 12 LB |
| 3 | 28.89 LB | 8.17 LB | 3.83 LB | 12 LB |
| 4 | 20.72 LB | 9.56 LB | 2.44 LB | 12 LB |
| 5 | 11.16 LB | 11.16 LB | 0.84 LB | 12 LB |

**Note:** Interest on interest

$$= \left[12LB \times \frac{i}{d^{(12)}}\right] - 12LB = 12LB \times 1.0899 - 12LB \quad = 1.08LB$$

**In year 1:**

Interest content = 41.84 x 0.17LB – 1.08LB = 6.0328LB

Setting the NAL of the lease proposal equal to zero, we get

| | |
|---|---|
| A – B + C – D – E | = 0 |
| 1000 – 41.84LB + 18.95LB – 326.88 – 6.26LB | = 0 |
| i.e., LB | = 23.11 |

Therefore, the break-even rental of APML is $45.52 ptpm.

The break even rental of ILL will be as follows:

vi. Initial Investment = 1,000

vii. Present Value of Lease Receipts = $12LB' \times PVIF\overline{A}_{m\,(13,5)}$

$$= 12LB' \times \frac{1}{d^{(12)}} \times PVIFA_{(13,5)}$$

where, i = 13%

$$= 12LB' \times 1.0691 \times 3.517 = 45.12LB'$$

viii. Present Value of Tax Liability on Lease Receipts = $12LB' \times 0.46 \times PVIFA_{(13,5)}$

$$= 12LB' \times 0.46 \times 3.517 = 19.41\,LB'$$

ix. Present Value of Depreciation Tax Shields = [400 x $PVIF_{(13,1)}$ + 240 x $PVIF_{(13,2)}$ + 144 x $PVIF_{(13,3)}$ + 86.4 x $VIF_{(13,4)}$ + 51.84 x $PVIF_{(13,5)}$] x 0.46

= 332.50

The break even rental of ILL can be obtained from the equation:

| | |
|---|---|
| – F + G + H + I | = 0 |
| i.e., – 1000 + 45.12L 12 LB′ – 19.41 LB′ + 332.50 | = 0 |
| i.e., LB′ | = 25.96 ptpm |

b. Therefore, on an investment cost of $30 million, the maximum lease rental APML will be willing to pay $0.69 million ptpm, and the minimum lease rental ILL will be willing to accept $0.78 million ptpm. Since the break even rental required by ILL ( LB′ ) is less than the maximum rental APML is willing to pay (LB), there is no positive spread and a bargaining area does not exist.

Often we will encounter leases where LB′ exceeds LB and under such conditions a lease cannot be structured with a positive NAL for both the lessor and the lessee. In practice such leases are written for other overriding considerations, but then we must understand that in such lease transactions one of the two parties sacrifices the goal of wealth maximization. The following illustrations give the other factors on account of which LB′ can exceed LB.

### Illustration 4

In illustration 3 assume that the equipment under consideration is indigenously available. Being an interstate sale, if APML acquires the equipment it has to pay a central sales tax of 4% on the basic price of $30 million. On the other hand, if IEL acquires the equipment to lease it out to APML, it has to pay central sales tax at 10% on the basic price. Compute the spread available between the break-even rentals of APML and IEL.

**Solution**

Assuming an investment cost of $1,000, we know that the break even rentals of APML and IEL are 23.11 ptpm and $25.96 ptpm.

Given an investment cost of $31.2 million, the monthly break even rental for APML is $(31.2 x 0.02311) million = $0.72 million.

On the other hand, the investment cost for IEL will be $33 million and the monthly break even rental for IEL = $(33 x 0.02596) million = $0.86 million.

Clearly, there is no spread available between the break even rentals of APML and IEL which in turn implies that there is no room for negotiating a lease package that is financially attractive from the points of view of both the lessor and the lessee.

While calculating the spread in illustrations 3 and 4, we have assumed that there are no differences in the capital allowances available to the lessor and the lessee. This again need not be true. When the investment allowance scheme was in vogue (it was withdrawn by the Finance Act of 1990), a controversial and unresolved issue was the entitlement of the lessor to the benefit of investment allowance. The Income Tax Department was of the view that the lessor cannot claim investment allowance on the eligible leased assets because these assets are not deployed directly in his business. Obviously, the lessee, not being the owner of the equipment, cannot claim the tax shield on investment allowance. Since the department disallowed the claim for investment allowance in the hands of both the lessor and the lessee, the spread (LB – LB′) ceased to exist in many lease transactions.

**Illustration 5**

Consider the data provided in illustration 3. Assume that APML is eligible to claim investment allowance at 20 percent of the original cost of the equipment if it purchases the equipment. On the other hand, if it takes the equipment on lease, it is not entitled to this capital allowance. The capital allowance is not made available to the lessor either. Calculate the spread available between the break even rentals of APML and IEL.

**Solution**

Investment allowance on an equipment costing,
$1000 = 0.2 x 1,000 = $200

Tax shield on investment allowance = 0.46 x 200 = $92

Present value of tax shield on investment allowance = 92 x $PVIF_{(14,1)}$ = $80.68

Factoring this value in the NAL equation of APML and solving for LB we get,

LB = $20.34 ptpm

Since IEL cannot claim investment allowance, its monthly break even rental of 25.96 ptpm will remain unchanged. Thus we find that asymmetries in terms of availability of tax shelters makes leasing less attractive. Differences in terms of the relative capacities of the lessor and lessee to absorb tax shields will also affect the spread.

## CONCEPTS OF GROSS YIELD AND ADD-ON YIELD

More often than not, the leasing companies use the gross yield on investment as the basis for pricing a lease. The gross yield of a lease can be defined as that compounded rate of return (discount rate) that equates:

P.V. (Lease Rentals) + P.V. (Residual Value) to Investment Cost.

Where, management fees and initial direct costs are involved the gross yield will be the discount rate that equates:

P.V.(Lease Rentals) + P.V.(Residual Value) + Management Fees

= Investment Cost + Initial Direct Costs.

As the reader would have observed, the tax element is not factored into the calculation of gross yield and therefore, the gross yield is always in pre-tax terms. The gross yield of a lease is compared with the pre-tax cost of funds to the lessor to evaluate the financial viability of the lease investment. In practice, the cut-off rate is determined as the pre-tax cost of funds plus a profit margin, the latter being a subjectively determined figure. The following illustration explains the computation of gross yield and the application of the decision rules based on gross yield.

### Illustration 6

The finance manager of Implease company evaluates lease proposals in terms of the risk adjusted gross yield. For this purpose, he has developed the following risk classification table which provides information on the risk adjusted pre-tax yields required for different default risk classifications:

| Risk Class | Required Yield (%) |
|---|---|
| A | 19 |
| B | 21 |
| C | 24 |
| D | 25 |

The finance manager is currently reviewing a proposed lease transaction with Savage Coffee Curing Works about which the following information is available:

| | | |
|---|---|---|
| Primary Lease Period | : | 5 years |
| Secondary Lease Period | : | 3 years |
| Monthly Rental during Primary Period | : | \$25/\$1,000 |
| Monthly Rental during Secondary Period | : | \$1/\$1,000 |

The credit rating exercise undertaken by him reveals that the lessee can be placed in the 'B' category of the risk classification table.

Required:

a. Can the finance manager recommend the proposal? Why or why not?

b. Assume that the lessee is prepared to pay three months' rental in advance, of which two months' rental will be maintained as an interest free security deposit and adjusted against the payments due for the last two months of the primary lease period. Does this alter your answer to (a)?

### Solution

a. Define i as the annual pre-tax yield implied by the lease transaction. The value of i can be obtained from the equation:

$$(25 \times 12) \times PVIF\overline{A}_{m\ (i,5)} = 1{,}000$$

$$\text{i.e., } 300 \times \frac{i}{d^{(12)}} \times PVIFA_{(i,5)} = 1{,}000$$

$$\text{i.e., } \frac{i}{d^{(12)}} \times PVIFA_{(i,5)} = 3.333$$

At i = 0.18, LHS of the equation = 1.095 x 3.127 = 3.424

i = 0.20, LHS of the equation = 1.105 x 2.991 = 3.305

Interpolating in the range (18, 20) we get,

$$i = 0.18 + \left[0.02 \times \frac{3.333 - 3.424}{3.305 - 3.424}\right] = 0.18 + \left[0.02 \times \frac{0.091}{0.119}\right] = 0.1953 \text{ or } 19.53\%$$

The gross yield is less than the required yield. Hence the finance manager cannot recommend the proposal.

b. The value of i can be determined from the equation:

$(25 \times 2) + [25 \times 12 \times PVIF\,\bar{A}_{m\,(i,4.833)}] = 1000$

[**Note:** 4.833 years = 58 months]

From this equation we get,

$$PVIF\bar{A}_{m\ (i,4.833)} = \frac{950}{300} = 3.167$$

At i = 0.20 LHS of the equation = 1.105 x 2.928 = 3.235

i = 0.22 LHS of the equation = 1.115 x 2.807 = 3.130

Interpolating in the range (20, 22) we get,

i = 0.2129 or 21.29%.

Since the gross yield is marginally higher than the required yield, the finance manager can consider accepting the proposal.

The illustration shows the payment profile influences the calculation of the gross yield and hence the decision to accept or reject a lease investment. Another variable that considerably influences the gross yield is the residual value of the equipment. In cases where the residual value is significant and unguaranteed, we must implicitly or explicitly recognize the uncertainty associated with the realization of the estimated salvage value. An implicit approach will be to take a very conservative estimate of the salvage value which we assume will be realized under the pessimistic scenario. An explicit approach will be to define the subjective probability distribution for the residual values and use the expected value of the probability distribution as the input for computing the gross yield.

### Illustration 7

Consider the problem described in illustration 6. The finance manager of implease estimates the residual value to vary between 5% and 20% according to the following probability distribution:

| Residual value (as a % of investment cost) | 5 | 7.5 | 10 | 15 | 20 |
|---|---|---|---|---|---|
| Probability | 0.1 | 0.25 | 0.4 | 0.15 | 0.1 |

Compute and comment on the residual dependence of the gross yield.

### Solution

We shall work with an investment cost of $1,000.

The expected residual value

= [(5% x 0.1) + (7.5% x 0.25) + (10% x 0.4) + (15% x 0.15) + (20% x 0.10)] x 1,000

= $106.25

The value of r can be determined from the equation

$$300 \times PVIF\bar{A}_{m(r,5)} + 106.25 \times PVIF_{(r,5)} = 1,000$$

The reader can verify that the gross yield implicit in the transaction is about 22% which is higher than the required yield. Therefore, the finance manager can recommend the proposal. The residual dependence of the gross yield is about (22% – 19.53%) = 2.47%.

A variant of gross yield that is sometimes quoted to mislead the unwary lessee is the "add-on yield". The "add-on yield", akin to the "flat rate of interest" assumes that the investment in the lease remains constant over the lease period. Put differently, it does not recognize the fact that every lease rental paid under the finance lease has a capital content (return of investment) and an interest content (return on investment). Therefore, the add-on yield is not a true measure of the interest rate implicit in a lease.

**Illustration 8**

For the problem described in illustration 6, calculate the add-on yield.

**Solution**

| | | |
|---|---|---|
| Initial investment | = | \$24 million |
| Aggregate lease rentals payable under the lease during the primary period | = | (0.025 x 24 x 60) = \$36 million |
| Aggregate interest charge for the lease over the lease period | = | \$12 million |
| Average annual interest charge | = | \$2.4 million |
| Add-on yield | = | (2.4/24) x 100 = 10%. |

Comparing the add-on yield with the gross yield of 19.53%, it is clear that this measure of yield provides a distorted picture of the true cost of a lease to the lessee.

## GROSS YIELD BASED PRICING

Now let us look at the pricing of a lease given the required gross yield, the duration of the lease, the residual value, the management fees and the initial direct costs.

**Illustration 9**

Integrated Financial Services Company (IFSC) uses the gross yield approach to price its lease investments. The gross yield for this purpose is determined as the marginal pre-tax cost of funds plus 1.3%. You are informed that the incremental costs of debt and equity for IFSC are 15% and 21% respectively and the company would like to maintain a gearing ratio of 4:1 in the long run. The marginal rate of tax is 45% and the surcharge is 15%.

The company typically writes lease contracts for primary periods of 3, 5 and 8 years. For a 5-year (primary) lease contract, the company collects 1% of the investment cost as management fee (front ended) and incurs 1/2% of the investment cost as initial direct costs (front ended). The company assumes 5% of the original cost as residual value of the equipment after 5 years.

a. Assuming an equated pattern of collection, calculate the annual lease rental. The rentals are collected annually in arrears.

b. Assuming a stepped pattern of collection whereby the rentals are stepped-up by 10% p.a., calculate the lease rentals over the lease period. The rentals are payable in arrears.

c. Assuming equated collection pattern, calculate the lease rental. The rentals are payable monthly in advance.

d. In certain cases the company follows a deferred pattern of collecting lease rentals whereby the lessee is not required to make any payment for the first 12 months and thereafter makes equated payments for the remaining part of the lease period. Calculate the lease rental assuming that the lease rentals are collected monthly in advance.

**Solution**

Required gross yield = Marginal cost of capital (in pre-tax terms) + 1.3%

Marginal cost of debt = 15% (in pre-tax terms)

Marginal cost of equity = $\frac{21\%}{(1-0.5175)} = 43.5\%$ (in pre-tax terms)

Marginal cost of capital (in pre-tax terms) = $(4/5 \times 0.15 + 1/5 \times 0.435)$

Required gross yield = 20.7% + 1.3% = 22%.

a. Define L as the annual lease rental. The value of L can be obtained from the equation (assuming an investment cost of $1,000)

$10 + L \times PVIFA_{(22,5)} + 50 \times PVIF_{(22,5)} = 1,005$

**Note:** The front ended management fee $= 0.01 \times 1000 = 10$ and

the initial direct cost $= 0.005 \times 1000 = 5$

i.e., $10 + 2.864L + (50 \times 0.370) = 1,005$

i.e., $2.864L = 976.5$

i.e., $L = \$341$

b. Define $L'$ as the amount of the rental to be charged in the first year. The rentals to be charged in years 2, 3, 4, and 5 will be,

$1.1\ L', (1.1)^2 L'\ (1.1)^3 L'$ and $(1.1)^4 L'$

The value of $L'$ can be obtained from the equation:

$[10 + L' \times PVIF_{(22,1)} + 1.1\ L' \times PVIF_{(22,2)} + (1.1)^2 L' \times PVIF_{(22,3)}$

$+ (1.1)^3 L' \times PVIF_{(22,4)} + (1.1)^4 L' PVIF_{(22,5)} + 50 \times PVIF_{(22,5)}] = 1,005$

i.e., $3.368\ L' = 976.50$

i.e., $L' = \$290$

(lease rental to be charged in the first year).

c. Define LM as the equated monthly lease rental. The value of LM can be obtained from the equation:

$10 + 12LM \times PVIF\bar{A}_{m\ (22,5)} + 50 \times PVIF_{(22,5)} = 1,005$

i.e., $10 + 38.320LM + (50 \times 0.370) = 1,005$

i.e., $38.320LM = 976.5$

i.e., $LM = \$25.48$ ptpm

d. Define $LM'$ as the monthly lease rental payable from the beginning of the 13th month to the beginning of the 60th month. The value of $LM'$s is given by the equation:

$10 + 12\ LM' \times PVIF\bar{A}m_{(22,4)} \times PVIF_{(22,1)} + 50 \times PVIF_{(22,5)} = 1,005$

i.e., $10 + 27.363\ LM' + 18.5 = 1,005$

i.e., $27.363\ LM' = 976.5$

i.e., $LM' = \$35.69$ ptpm.

**Note:** The present value of a rental stream where the rentals increase (or decrease) at a constant rate per annum can be also determined from the following formula:

$$PV = L \left(\frac{1+j}{1+i}\right) PVIFA_{(j,n)}$$

where,

L = lease rental per period
n = duration of the lease (in years)
$j = \frac{i-g}{1+g}$
i = pre-tax yield per annum
g = constant rate of increase (decrease) per annum.

## INTERNAL RATE OF RETURN (IRR) OF A LEASE

Some leasing companies evaluate lease investments using the criterion of Internal Rate of Return (IRR). The IRR of a lease investment is that rate of interest at which the NAL is equal to zero. The lease investment is accepted if and only if the IRR exceeds the marginal cost of capital. The following illustration explains the application of the IRR criterion to lease evaluation:

**Illustration 10**

Consider the problem described in illustration 6. You are informed that the target debt-equity ratio for Implease is 4:1 and that the marginal costs of debt and equity are 18% and 24% respectively. The marginal rate of tax inclusive of surcharge is 46%. The tax relevant rate of depreciation is 40%. The net salvage value after five years can be ignored. Calculate the IRR of the lease proposal. Should the proposal be accepted?

**Solution**

The marginal cost of capital is,

$((4/5)$ x 0.18 x $(0.54)) + (1/5) \times 0.24$ = 0.1258 or 12.58%.

**Define 'i' as the IRR of the investment**

The various components of NAL valued at 'i' will be as follows:

i. Initial investment = \$1,000

ii. P.V. of lease payments = $25 \times 12 \times \text{PVIF}\overline{A}_{m(1,5)}$

$= 300 \text{ x } \frac{i}{d^{(12)}} \text{ x PVIFA}_{(i,5)}$

iii. P.V. of tax liability on lease payments = $25 \text{ x } 12 \text{ x } 0.46 \text{ x PVIFA}_{(i,5)}$

$= 138 \text{ x PVIFA}_{(i,5)}$

iv. P.V. of tax shields on depreciation = $[400 \text{ x PVIF}_{(i,1)} + 240 \text{ x PVIF}_{(i,2)} + 144 \text{ x PVIF}_{(i,3)} + 86.4 \text{ x PVIF}_{(i,4)} + 51.84 \text{ x PVIF}_{(i,5)}] \text{ x } 0.46$

Setting – A + B – C + D = 0 and solving for i involves a trial and error approach which can be calculated by the student, to decide whether to lease or not.

## IRR Based Pricing

The lessors who use the IRR criterion for pricing a lease use an approach similar to the gross-yield based pricing approach. (Refer illustration 9). They define what they call the 'Required Internal Rate of Return' for setting the price of the lease. The reader must note that the 'Required IRR' is nothing but the risk adjusted rate of return required by the lessor. Conceptually, the risk adjusted rate of return is defined as,

$$i = i_F + i_e + i_d \quad (1)$$

where,

$i$ = risk-adjusted rate of return,

$i_F$ = risk-free rate,

$i_e$ = premium for the risk characterizing the existing lease investments,

$i_d$ = premium for the differential risk characterizing the lease investment under review.

As discussed in the earlier chapter $i_d$ can be zero, positive or negative depending upon how the lessor perceives the "extra" risk inherent in the lease proposal. Usually $i_d$ is assumed to be zero or negligible and the risk-adjusted rate is set equal $(i_f + i_e)$, which is nothing but the marginal cost of capital.

We are aware that the price of lease based on the marginal cost of capital is nothing but the break-even lease rental of the lessor. Therefore, the lessor who employs the IRR-based approach for pricing a lease is in fact determining its break even rental.

## ASSESSMENT OF LEASE RELATED RISKS

We have so far discussed the various approaches for pricing a lease. Clearly, the price of a lease must reflect the risk inherent in the lease investment. So the relevant question is: What are the lease related risks borne by the lessor?

The total risk of a lease portfolio consists of the following types of risks:

Default risk : The risk of not receiving the lease rentals on schedule. The default risk can arise on account of certain economy wide factors like unanticipated cost push inflation which affects the financial performance of almost all lessees or on account of industry/company specific factors which affect only a few lease accounts in the portfolio[2].

Residual value risk : The possibility of a decline in the estimated residual value of the equipment. This risk is particularly relevant in operating leases of hi-tech equipments and is caused by factors like technological obsolescence and uncertainty with regard to the product market life of the equipment.

Interest rate risk : The interest rate risk refers to the changes in the market rate of interest which adversely affects the cost of funds to the lessor.

Purchasing power risk : This refers to the reduction in the value of lease rentals in real terms caused by unanticipated inflation. This risk is particularly relevant for real estate leases or leases with a long duration.

Political risk : The political risk refers to the changes in the governmental policies in general, and the fiscal policy in particular, which have significant implications for the economic viability of lease investments. An example is the withdrawal of the investment allowance scheme, which as we noted earlier has a favorable implication for the economies of leasing.

Currency and Cross-border risk : These risks are relevant only for cross-border lease transactions. The currency risk refers to the fluctuations in the exchange rate of the rupee vis-á-vis the currency in which the lease payments are structured. The cross-border risk refers to the unfavorable changes in the political and economic environment of the country, where, the lessee is located.

## ASSESSMENT OF DEFAULT RISK

While we have listed about six types of risk, the most significant risk in the case of a domestic finance lease is the default risk. Why? A finance lease, as we are aware, is invariably a full pay out lease and therefore the residual value risk is negligible. The lease agreement includes a clause that permits the lessor to alter the lease rentals in response to (a) changes in the fiscal policies of the government which have a bearing on the lease; and (b) variations in the interest rates which adversely affect the cost of funds to the lessor. Thus the lessor is effectively immunized against the interest rate risk and political risk. In case of long-term leases, the lease agreement provides for periodic rental reviews or for automatic revision of lease rentals based on some escalation formula, for example, indexed leases. So, what remains is the default risk.

2 The loan payments refer to the repayment of the external commercial borrowings availed of by the lessor for funding the lease.

## Determinants of Creditworthiness

To assess the default risk of a lease, the lessor has to examine the creditworthiness of the lessee. The factors to be considered in this credit rating exercise are briefly explained below:

i. **Character:** This refers to the lessee's demonstrated integrity, honesty and commitment to pay even during hard times. For this purpose, the lessor relies on the informal reports from other lessors who have transacted business with the lessee or on more formal sources like reference letters from bankers.

ii. **Capacity:** The lessee's capacity to honor his future financial commitments can be assessed by taking into account (i) the present debt capacity and the debt servicing ability; and (ii) the future cash flow position. A trend analysis (based on the financial statements of the lessee for the last 3-5 years) of the following ratios can be useful:

- Debt-Equity Ratio $= \dfrac{\text{Total Debt}}{\text{Net Worth}}$
- Interest-Coverage Ratio $= \dfrac{\text{Earnings before Interest and Taxes}}{\text{Interest}}$
- Cash Flow Coverage Ratio $= \dfrac{EBILT + D}{1 + L + \dfrac{LR}{(1-t)}}$

where,

| | | |
|---|---|---|
| EBILT | = | Earnings before interest, lease payments and taxes |
| D | = | Depreciation, |
| I | = | Interest Charges, |
| L | = | Lease Payments, |
| T | = | Marginal Tax Rate, |
| LR | = | Loan Repayment. |

- Operating Cash Flow/Net Sales $= \dfrac{\text{Earnings after Taxes + Depreciation}}{\text{Net Sales}}$

Before analyzing the financial statements, the lessor must look for the creative accounting techniques that could have been employed to dress up the financial statements. There are areas like depreciation accounting, valuation of inventories, disclosure of prior period and extraordinary items, accounting for leases, foreign currency translations, etc., which offer considerable scope for adopting diverse accounting practices. The lessor has to adjust the reported financial statements of the lessee for the material distortions caused by the choice of a particular accounting practice or by changes in the accounting practices over a period of time.

Likewise, the cash forecast provided by the lessee must be evaluated against the criteria of objectivity and conservatism. As a simple check, the lessor can verify whether the contingent liabilities (disclosed in the financial statements for the most recent period) which have a bearing on the future cash flows have been taken into account in the cash forecast. The lessor can seek information on the off balance sheet liabilities and check whether the financial commitments associated with these liabilities find a place in the cash forecast. The lessor must also know the basis for estimating future revenues and costs. By relating this information to the prospects for the industry/industries in which the lessee operates and the lessee's market shares in these industries, the lessor can determine the degree of credibility that can be placed on the forecast.

iii. **Conditions and Competition:** If the industry in which the lessee operates is sensitive to changes in the business cycle, then the impact of the emerging economic conditions on the business of the lessee must be considered. For example, the machine tools industry is usually the first one to get into a recession and the last one to come out of it whereas the food processing industry is less sensitive to such changes. The lessor must ensure that the impact of the emerging economic trend is reflected in the cash forecast furnished by the lessee.

The competitive conditions in the lessee's industry need to be analyzed and the lessee's standing in the market place assessed. The market share of the lessee must also be related to the growth prospects for the industry as a whole. A diminishing market share of the lessee in a growing industry is a better business risk than a diminishing market share in a declining industry.

Many lessors regard industry analysis as one of the key facets of the evaluation process. Based on their perceptions about the problems and prospects of the different industries, they fix on the lease investments that can be made in different industries.

iv. **Collateral:** The collateral here refers to the value maintained by the leased equipment. The resale value of the collateral is an important consideration in risk assessment because that is what the lessor gets back immediately in the event of default. Obviously, equipments which maintain value over time due to inflation and other factors offer a better collateral than those which are not likely to maintain resale value due to technological or economic obsolescence.

In practice, lessors are also concerned about the physical attributes of the asset leased. Other things being equal, a clearly identifiable asset which lends itself to easy repossession is preferred.

v. **Cross-border and Currency:** The political and economic conditions prevailing in a foreign country become relevant in the analysis of the credit risk associated with a cross-border lease. The exchange rate fluctuation is also an important consideration in the risk analysis of lease proposals with lease receipts and loan payments structured in different currencies.

## Approaches to Credit Rating

Once the factors relevant for credit rating a lessee have been identified, the next step is to assess the lessee on each of these factors and combine these assessments into an overall rating. The overall rating forms the basis for extending the lease line and for deciding the lease limit. For the purpose of arriving at the overall rating, the lessor can adopt one of the following approaches.

– Explicit Judgmental Approach,
– Statistical Approach.

The *Explicit Judgmental Approach* calls for (a) defining the set of factors relevant for credit rating; (b) specifying the weights to be assigned to these factors; (c) making a quantitative assessment of the rated entity on each of the factors; and (d) combining the weights and the quantitative assessments into a numerical credit score (credit index). This approach is illustrated in the following table:

| i. Relevant Factors: | Weights |
|---|---|
| – Net Worth | 12 |
| – Current Ratio | 10 |
| – Profitability | 35 |
| – Business Risk | 18 |
| – Financial Risk | 10 |
| – Managerial Competence | 15 |

| ii. Scores of the Rated Entity (0–1 Scale): | |
|---|---|
| – Net Worth | 0.6 |
| – Current Ratio | 0.8 |
| – Profitability | 0.5 |
| – Business Risk | 0.6 |
| – Financial Risk | 0.9 |
| – Managerial Competence | 0.8 |
| (0 refers to the most unfavorable assessment and 1 refers to the most favorable assessment). | |

iii. Obtaining the overall score:

| Factor (a) | Weight (b) | Score (c) | Weighted Score (d) = (b) x (c) |
|---|---|---|---|
| Net Worth | 12 | 0.6 | 7.2 |
| Current Ratio | 10 | 0.8 | 8.0 |
| Profitability | 35 | 0.5 | 17.5 |
| Business Risk | 18 | 0.6 | 10.8 |
| Financial Risk | 10 | 0.9 | 9.0 |
| Managerial Competence | 15 | 0.8 | 12.0 |
| Overall Credit Score | | | 64.5 |

Based on an analysis of historical data about the degree of association between the overall credit scores and the actual defaults, the lessor can fix a cut-off score for accepting or rejecting a lessee. In our example if the lessor regards a score of 60 (out of a maximum of 100) as the minimum acceptable score, the lessee under review will be considered as an acceptable credit risk.

While the approach is simple and, *prima facie,* analytical, it suffers from two serious limitations: (a) the weights assigned to the factors are subjectively determined; and (b) the minimum acceptable score if fixed arbitrarily can result in mis-classification errors. (A mis-classification error occurs when on the basis of the minimum acceptable score a good lessee account is rejected or a bad lessee account is accepted).

The *Statistical Approach* relies to a large extent on statistical methods in the selection of factors, the weights to be assigned to them and in the interpretation of the financial scores. For example, the technique of factor analysis can be employed to identify the set of factors deemed relevant for credit rating and the technique of discriminant analysis can be used for developing a discriminant function that can objectively distinguish between the good and the bad lessees with the minimum number of mis-classification errors. The approach of discriminant analysis is explained and illustrated in the appendix to this chapter.

## Developing a Risk Classification Table

In the earlier section, we looked at certain approaches for discriminating between the good and the bad lessee accounts. This classification, however, does not mean that all good lessees carry the same degree of default risk. To differentiate between the really good accounts and the marginally good accounts, the lessor needs to develop a risk-classification table based on the minimum acceptable score like the one developed in Table 5. Of course, such a table can be also developed on the basis of the Z scores obtained from a Discriminant Analysis Function.

**Table 5: Credit-Risk Classification Table**

| Cut-Off Score | Grade |
|---|---|
| Above 90 | A |
| Between 80 and 89 | B |
| Between 70 and 79 | C |
| Between 60 and 69 | D |

Once the risk-classification table is developed, the next step is to incorporate the credit risk in the lease structuring process. The alternative ways of doing this are as follows:

a. **Increasing Rentals** – The lease rentals can be increased for lease proposals with higher degree of default risk.

b. **Altering Payment Schedule** – The lessor can modify the payment pattern depending upon the degree of risk assumed. For instance, in the case of a lease proposal with a higher element of risk the lessor can adopt a front ended pattern of payment as opposed to the equated pattern of payment.

c. **Extending the Duration** – The lease term can be reduced for leases with a higher degree of risk.

d. **Collecting a Security Deposit** – The lessee can be required to maintain a security deposit with the lessor. This deposit can be forfeited if the lessee fails to meet his obligations.

e. **Insisting on Personal and Bank Guarantees** – The lessor can insist upon personal and bank guarantees from the lessee for securing his obligations. The lessor can also insist that the bankers of the lessee co-accept the bills raised for payment of rentals.

## Evaluating Product Risk

Since the focus of this chapter has been on the evaluation of a financial lease, not much emphasis has been placed on the assessment of product risk (the salvage value of the leased equipment). As noted earlier, the product risk looms large in the case of an operating lease and in the case of financial lease carrying a high default risk. Given the lack of depth of the market for used equipment, and the rapid technological changes, the estimation of resale value is a highly complicated and specialized task. If the trend in the equipment leasing industries of the developed countries is any indication, operating leases are likely to emerge as a popular mode of equipment leasing particularly in the sunrise or hi-tech industries. Given this scenario the lessors will be substantially exposed to product risk. How can the lessor manage the product risk?

### Residual Value Insurance[3]

Residual Value Insurance (or RVI as it is popularly known) guarantees a minimum value of an asset on a pre-determined date in future and thus provides a hedge against the down-side risk associated with the realization of residual value. Put differently, RVI converts product risk into a receivable. Of course, the lessor may not buy RVI to cover the entire asset residual risk. For example, a lessor who offers a lease which pays out say 60% of the equipment value over the lease term may buy a RVI for 30% of the asset residual risk. In this process he assumes a residual value risk equal to 10% of the equipment value.

3 Tony Forster, "Residual Value Insurance", World leasing Year Book 1990 (A Euromoney Publication).

The cost of RVI is the premium payable to the underwriter or the insurance company. The obvious advantage of buying a RVI is that the lessor is able to offer a competitive rate. A less obvious advantage is that the lessor can fund the lease at a lower interest cost because the financial intermediary funding the lessor values the RVI underwritten by a reputed insurance company. Experience shows that such interest capping can result in savings that not only pays the insurance premium, but also increases the overall yield to the lessor. RVI is usually an integral part of lease packages structured for leasing aircraft or similar high value equipment.

### Product-Market Specialization

An alternative way of managing product risk is to specialize in specific industrial segments (example, industrial electronics) or to concentrate on a particular class of equipment (example, computers). The advantage is the specialized knowledge of the resale markets which enables the lessor to structure multiple operating leases over the useful life of the equipment.

## SUMMARY

- The bargaining area or the range within which the rentals can be negotiated between the lessor and the lessee is determined by the break even rentals of the lessor and the lessee. The upper limit is determined by the break even rental of the lessee and the lower limit is set by the break even rental of the lessor. Clearly, no negotiable range will exist if the break even rental of the lessor exceeds that of the lessee.
- The flat rate of interest applicable to a lease is called the add-on yield. The assumption underlying the computation of "add-on yield" is that the investment in the lease remains constant over the lease period, which is untrue. The add-on yield is always less than the (effective) gross yield defined above.
- The Internal Rate of Return (IRR) on a lease is that rate of interest for which the NAL is equal to zero. The lease proposal is accepted if and only if IRR is greater than the marginal cost of capital.
- The total risk of a lease portfolio can be partitioned into the following types of risk: (a) Default Risk, (b) Residual Value Risk, (c) Interest Rate Risk, (d) Purchasing Power Risk, (e) Political Risk, and (f) Currency and Cross-border Risk.

# Appendix I

## Application of Discriminant Analysis
## A Step-by-Step Procedure

The technique of discriminant analysis can help the lessor to identify the prospective lessee accounts which are to be avoided on account of their inherent credit risk. The steps involved in the application of this technique are given below:

**Step 1:** The financial ratios considered relevant for credit rating must be specified. For the sake of simplicity we will assume that the two relevant ratios are the Quick Ratio and OCF (Operating Cash Flow) to Sales Ratio and denote these ratios by the variables X and Y.

**Step 2:** A sample of lessee accounts (consisting of both good and bad accounts) called the estimation sample must be drawn from the ledger and the values of X and Y must be calculated for each account. Let us assume that the sample consists of n accounts of which $n_1$ accounts are good and $n_2$ accounts are bad such that $n = n_1 + n_2$.

**Step 3:** A linear discriminant function of the form,

$Z_i = aX_i + bY_i$

must be defined, where,

$Z_i$ = The discriminant score for the ith lessee account,

$X_i$ = The value of the quick ratio for the ith lessee account,

$Y_i$ = The value of the OCF/Sales ratio for the ith lessee account,

a, b = The parameters to be estimated.

**Step 4:** The discriminant function which best distinguishes between the good and the bad groups of accounts can be obtained by maximizing the function,

$$F(Z) = \frac{(Z_1 - Z_2)^2}{\sum_{i=1}^{n_1}(Z_i - Z_1)^2 + \sum_{i=1}^{n_2}(Z_i - Z_2)^2}$$

where,

$\bar{Z}_1$ = Mean value of the $Z_i$ scores of good lessee accounts – group 1,

$\bar{Z}_2$ = Mean value of the Zi scores of bad lessee accounts – group 2,

$(Z_i - \bar{Z}_1)^2$ = Square of the mean deviations for group 1,

$(Z_i - \bar{Z}_2)^2$ = Square of the mean deviations for group 2.

To obtain the values of a and b such that F(Z) is maximized we should set the partial derivatives with respect to a and b equal to zero. Doing so, we get the normal equations,

$$a\sigma_x^2 + b\sigma_{xy} = (\bar{X}_1 - \bar{X}_2)$$

$$a\sigma_{xy} + b\sigma_y^2 = (\bar{Y}_1 - \bar{Y}_2)$$

Solving these equations, we get,

$$a = \frac{\sigma_x^2(\bar{X}_1 - \bar{X}_2) - \sigma_{xy}(\bar{Y}_1 - \bar{Y}_2)}{\sigma_x^2\sigma_x^2 - \sigma_{xy}\ \sigma_{xy}}$$

$$b = \frac{\sigma_x^2(\bar{Y}_1 - \bar{Y}_2) - \sigma_{xy}(\bar{X}_1 - \bar{X}_2)}{\sigma_x^2\sigma_y^2 - \sigma_{xy}\ \sigma_{xy}}$$

where,

$\sigma x^2$ = Variance of the variable X,

$\sigma y^2$ = Variance of the variable Y,

$\sigma_{xy}$ = Covariance of the variables X and Y,

$\overline{X}_1$ = Mean value of the variable X for group 1,

$\overline{X}_2$ = Mean value of the variable X for group 2,

$Y_1$ = Mean value of the variable Y for group 1,

$Y_2$ = Mean value of the variable Y for group 2.

**Step 5:** Given the values of a and b, the Z score is estimated for each account of the estimation sample. Then the cut-off value which represents the point of separation between the two groups is established. The cut-off value is so chosen that there is minimum number of mis-classifications. (A mis-classification occurs when a good account is classified as a 'bad account' on the basis of the discriminant score and vice-versa).

**Step 6:** The predictive ability of the discriminant model is examined with reference to a new sample of lessee accounts consisting of both good and bad accounts drawn from the ledger called the 'validation' or 'hold-out' sample. Based on the Z score for each account in the estimation sample, the account is classified as 'good' or 'bad'. The predicted classifications are compared against the actual classifications in the form of a two-way table given below.

| Predicted classification / Actual classification | Good Accounts | Bad Accounts |
|---|---|---|
| Good Accounts | $a_{11}$ | $a_{12}$ |
| Bad Accounts | $a_{21}$ | $a_{22}$ |

The ratio $\frac{(a_{11}+a_{22})}{(a_{11}+a_{12}+a_{21}+a_{22})}$ measures the predictive power of the model.

## Illustration

Mr. A, the finance manager of a company seeks your advice on how to classify the prospective lessees into "good" and "bad" categories. He believes that the two most important ratios helpful in discriminating between the 'good' and the 'bad' categories are (i) the quick ratio (X) and (ii) the EBDIT/Sales ratio (Y) in percentage terms. Mr. A provides you with the following data relating to eighteen accounts – ten of which happen to be good and eight bad.

| Good Accounts | | | Bad Accounts | | |
|---|---|---|---|---|---|
| Serial Number | $X_i$ | $Y_i$ | Serial Number | $X_i$ | $Y_i$ |
| 1 | 0.95 | 18 | 11 | 0.80 | 12 |
| 2 | 0.90 | 16 | 12 | 0.75 | 14 |
| 3 | 1.02 | 20 | 13 | 0.70 | 16 |
| 4 | 1.05 | 17 | 14 | 0.90 | 20 |
| 5 | 0.88 | 24 | 15 | 0.65 | 8 |
| 6 | 0.80 | 25 | 16 | 0.72 | 5 |
| 7 | 1.10 | 22 | 17 | 0.58 | 4 |
| 8 | 1.02 | 12 | 18 | 0.68 | 10 |
| 9 | 1.05 | 14 | | | |
| 10 | 0.96 | 26 | | | |

a. Estimate the discriminant function which best discriminates between the 'good' and the 'bad' accounts.

b. Estimate the cut-off point.

c. The finance manager has provided you with the following data on another 18 accounts – eight of which are good and ten bad.

| Sl.No. | $X_i$ | $Y_i$ | Good (G)/ Bad (B) |
|---|---|---|---|
| 1 | 1.01 | 16 | G |
| 2 | 0.85 | 20 | G |
| 3 | 1.1 | 12 | G |
| 4 | 1.05 | 17 | G |
| 5 | 0.94 | 14 | G |
| 6 | 0.80 | 17 | G |
| 7 | 0.96 | 22 | G |
| 8 | 0.8 | 24 | G |
| 9 | 0.7 | 12 | B |
| 10 | 0.6 | –5 | B |
| 11 | 0.85 | 14 | B |
| 12 | 0.7 | 10 | B |
| 13 | 0.6 | 9 | B |
| 14 | 0.9 | 7 | B |
| 15 | 1.1 | –2 | B |
| 16 | 0.75 | 10 | B |
| 17 | 0.4 | –8 | B |
| 18 | 0.7 | 13 | B |

Construct the classification matrix and comment on the predictive ability of the discriminant function.

**Solution**

a. Define the discriminant function as $Z_i = aX_i + bY_i$.

The coefficients 'a' and 'b' can be calculated as follows:

| | A/c No. | $X_i$ | $Y_i$ | $(X_i - \bar{X})$ | $(Y_i - \bar{Y})$ | $(X_i - \bar{X})^2$ | $(Y_i - \bar{Y})^2$ | $(X_i - \bar{X})(Y_i - \bar{Y})$ |
|---|---|---|---|---|---|---|---|---|
| G | 1 | 0.95 | 18 | 0.09 | 2.83 | 0.0081 | 8.0089 | 0.2547 |
| R | 2 | 0.90 | 16 | 0.04 | 0.83 | 0.0016 | 0.6889 | 0.0332 |
| O | 3 | 1.02 | 20 | 0.16 | 4.83 | 0.0256 | 23.3289 | 0.7728 |
| U | 4 | 1.05 | 17 | 0.19 | 1.83 | 0.0361 | 3.3489 | 0.3477 |
| P | 5 | 0.88 | 24 | 0.02 | 8.83 | 0.0004 | 77.9689 | 0.1766 |
| | 6 | 0.80 | 25 | –0.06 | 9.83 | 0.0036 | 96.6289 | –0.5898 |
| I | 7 | 1.10 | 22 | 0.24 | 6.83 | 0.0576 | 46.6489 | 1.6392 |
| | 8 | 1.02 | 12 | 0.16 | –3.17 | 0.0256 | 10.0489 | –0.5072 |
| | 9 | 1.05 | 14 | 0.19 | –1.17 | 0.0361 | 1.3689 | –0.2223 |
| | 10 | 0.96 | 26 | 0.10 | 10.83 | 0.0100 | 117.2889 | 1.0830 |
| G | 11 | 0.80 | 12 | –0.06 | –3.17 | 0.0036 | 10.0489 | 0.1902 |
| R | 12 | 0.75 | 14 | –0.11 | –1.17 | 0.0121 | 1.3689 | 0.1287 |
| O | 13 | 0.70 | 16 | –0.16 | 0.83 | 0.0256 | 0.6889 | –0.1328 |
| U | 14 | 0.90 | 20 | 0.04 | 4.83 | 0.0016 | 23.3289 | 0.1932 |
| P | 15 | 0.65 | 8 | –0.21 | –7.17 | 0.0441 | 51.4089 | 1.5057 |
| | 16 | 0.72 | –5 | –0.14 | –20.17 | 0.0196 | 406.8289 | 2.8238 |
| II | 17 | 0.58 | 4 | –0.28 | –11.17 | 0.0784 | 124.7689 | 3.1276 |
| | 18 | 1.02 | 10 | –0.18 | –5.17 | 0.0324 | 26.7289 | 0.9306 |

$$\sum_{i=1}^{18} X_i = 15.51 \quad \sum_{i=1}^{18} Y_i = 273 \quad \Sigma \left(X_i - \overline{X}\right)^2 = 0.4221$$

$$\sum_{j=1}^{10} X_j = 9.73 \quad \sum_{j=1}^{10} Y_j = 194 \quad \Sigma \left(Y_j - \overline{Y}\right)^2 = 1030.5002$$

$$\sum_{k=11}^{18} X_k = 5.78 \quad \sum_{k=11}^{18} Y_k = 79 \quad \Sigma \left(X_i - \overline{X}\right)\left(Y_i - \overline{Y}\right) = 11.7549$$

$$\overline{X} = \frac{15.51}{18} = 0.86 \quad \overline{Y} = \frac{273}{18} = 15.17$$

$$\overline{X}_1 = \frac{9.73}{10} = 0.97 \quad \overline{Y}_1 = \frac{194}{10} = 19.40$$

$$\overline{X}_2 = \frac{5.78}{8} = 0.72, \quad \overline{Y}_2 = \frac{79}{8} = 9.88$$

$$d_x = \overline{X}_1 - \overline{X}_2 = 0.25 \quad d_y = \overline{Y}_1 - \overline{Y}_2 = 9.52$$

$$\sigma_x^2 = \frac{0.4221}{17} = 0.0248 \quad \sigma_y^2 = \frac{1030.5002}{17} = 60.6177$$

$$\sigma_x = \frac{11.7549}{17} = 0.6915$$

$$a = \frac{\sigma_y^2 d_x - \sigma_{xy} d_y}{\sigma_x^2 \sigma_y^2 - \sigma_{xy}^2}$$

$$= \frac{(60.6177 \times 0.25) - (0.6915 \times 9.52)}{(0.0248 \times 60.6177) - (0.6915 \times 0.6915)}$$

$$= \frac{8.5713}{1.0251} = 8.3614.$$

$$b = \frac{\sigma_y^2 d_y - \sigma_{xy} d_x}{\sigma_x^2 \sigma_y^2 - \sigma_{xy}^2}$$

$$= \frac{(0.0248 \times 9.52) - (0.6915 \times 0.25)}{1.0251}$$

$$= \frac{0.0632}{1.0251} = 0.0617.$$

The discriminant function will be $Z_i = 8.3614\ X_i + 0.0617\ Y_i$.

b. To estimate the cut-off point, we should first compute the Z score for each account and sort the accounts in the descending order using the Z score as the key.

**Z Scores for the Given Accounts**

| SL.No. | Z Score (= 8.3614 $X_i$ + 0.0671 $Y_i$) |
|---|---|
| 1 | 9.054 |
| 2 | 8.512 |
| 3 | 9.763 |
| 4 | 9.828 |
| 5 | 8.839 |
| 6 | 8.232 |
| 7 | 10.555 |
| 8 | 9.519 |
| 9 | 9.643 |
| 10 | 9.631 |
| 11 | 7.429 |
| 12 | 7.135 |
| 13 | 6.840 |
| 14 | 8.759 |
| 15 | 5.929 |
| 16 | 5.711 |
| 17 | 5.097 |
| 18 | 6.303 |

**Sorted List of Accounts**

| SL.No. | Z Score | Actual Classification |
|---|---|---|
| 7 | 10.555 | G |
| 4 | 9.828 | G |
| 3 | 9.763 | G |
| 9 | 9.643 | G |
| 10 | 9.631 | G |
| 8 | 9.519 | G |
| 1 | 9.054 | G |
| 5 | 8.839 | G |
| 14 | 8.759 | B |
| 2 | 8.512 | G |
| 6 | 8.232 | G |
| 11 | 7.429 | B |
| 12 | 7.135 | B |
| 13 | 6.840 | B |
| 18 | 6.303 | B |
| 15 | 5.929 | B |
| 16 | 5.711 | B |
| 17 | 5.097 | B |

From the above table, we find the number of mis-classification errors can be reduced to one by fixing the cut-off point at Z = 8.232

(Note that the alternative cut-off point at Z = 8.759 will result in two mis-classification errors).

c. To develop the classification matrix, we should first compare the predicted classification based on the Z score and the actual classification with respect to each account of the new sample. The following table provides this information:

**Predicted vs. Actual Classification for the New Sample**

| Sl. No. | Z Score | Predicted Classification | Actual Classification |
|---|---|---|---|
| 1 | 9.432 | G | G |
| 2 | 8.341 | G | G |
| 3 | 9.938 | G | G |
| 4 | 9.828 | G | G |
| 5 | 8.724 | G | G |
| 6 | 7.738 | B | G |
| 7 | 9.384 | G | G |
| 8 | 8.17 | B | G |
| 9 | 6.593 | B | B |
| 10 | 4.708 | B | B |
| 11 | 7.971 | B | B |
| 12 | 6.47 | B | B |
| 13 | 5.572 | B | B |
| 14 | 7.957 | B | B |
| 15 | 9.075 | G | B |
| 16 | 6.888 | B | B |
| 17 | 2.851 | B | B |
| 18 | 6.655 | B | B |

The classification matrix or confusion matrix for the hold-out (new) sample is:

| Actual Classification<br>Predicted Classification | Good (G) | Bad (B) |
|---|---|---|
| Good (G) | 6 | 1 |
| Bad (B) | 2 | 9 |

The ratio of $\frac{(a_{11}+a_{22})}{(a_{11}+a_{12}+a_{21}+a_{22})}$ works out to be $\frac{15}{18}=0.830$. In other words the predicted classification based on the discriminant function and the actual classification coincide for 83% of the accounts included in the hold out sample. So, we can prima facie conclude that the model has a high degree of predictive power.

With the use of a personal computer the mechanics of estimating the discriminant function is unlikely to be a constraint in the application of this technique. In fact, this technique can help the lessor to streamline the exercise of credit rating. The lessor can use the Z score as a preliminary rating and then bring to bear subjective judgments of certain factors not captured by the model to arrive at a final rating.

## Chapter XIV

# Lease Accounting and Reporting

**After reading this chapter, you will be conversant with:**

- Current Accounting and Reporting Practices
- Form vs. Substance Debate
- Accounting Treatment for Finance Leases
- Accounting and Reporting for Operating Lease
- Accounting for Leasehold Land and Buildings

## Introduction

In this chapter, we will discuss the accounting and reporting framework for lease transactions. But before we do that, we must explain the need for an elaborate discussion on this subject. As of date, professional accounting bodies on the one hand and the leasing industry on the other are sharply divided on the "appropriate accounting treatment" for finance lease transactions. The professional accounting bodies subscribe to the view that the 'extent to which the risks and rewards of ownership are transferred from the lessor to the lessee' must be the guiding principle for determining the appropriate accounting treatment for a lease transaction. Therefore, different accounting treatments are recommended for finance and operating lease transactions so that the financial statements of the lessee and the lessor portray a more accurate picture. The leasing industry on the other hand holds on to the view that both types of leasing involve 'the transfer of the right to use an asset for an agreed period of time in return for rent' and feels that there is no need to obfuscate the accounting process by according a more complicated accounting treatment for finance leases.[1]

The first attempt to evolve accounting standards for lease transactions was made by the Financial Accounting Standards Board (FASB) of USA, and in 1976, this body published the FASB Statement 13 on 'Accounting for Leases'. The International Accounting Standards Committee (IASC) perceived the need for evolving similar standards across countries and this committee came out with its accounting standard titled IAS:17, "Accounting for Leases" in 1982, drawing largely on the FASB Statement.

## CURRENT ACCOUNTING AND REPORTING PRACTICES

The following are the salient features regarding the lease accounting and reporting practices followed by the lessees and the lessors, based on the IAS-17:

i. The lessee is supposed to capitalize the assets leased into his books of accounts as fixed assets and claim depreciation on the same.

ii. The lessor has to recognize the lease as a receivable in his books of accounts at an amount equal to the net investment in the lease i.e., gross investment in the lease less unearned finance income.

## FORM VS. SUBSTANCE DEBATE

Having discussed the current accounting practices, let us briefly consider the accounting treatment prescribed by the IASC (Refer Appendix I). A perusal of the guidelines reveals that there is really no difference of opinion between the IASC and the leasing industry on the manner in which operating leases must be accounted for in the books of the lessor and the lessee. The accounting treatment recommended by the IASC reflects only a refined version of the current practices. The conflict of opinion exists only with reference to the manner of accounting and reporting for finance leases.

Given the nature of a finance lease, the lessee acquires the economic benefits of the use of the leased asset for the major part of its useful life in return for entering into an obligation to pay for that right an amount approximating to the fair value of the asset and the related finance charge. Therefore, IAS:17 requires such lease transactions to be reflected in the lessee's balance sheet because failure to do so

1 The leasing industry is also opposed to this idea on account of the possible fiscal ramifications. In countries, where the tax liability is assessed on the basis of the reported financial statements, the distinction drawn between a finance lease and an operating lease has obvious tax implications. In countries where an operating lease and a finance lease are treated on the same footing for tax purposes, an accounting distinction can possibly lead to a change in the tax treatment.

results in an understatement of the economic resources and the level of obligations of the lessee firm. The corresponding accounting treatment in the books of the lessor will be to record the present value of lease rentals receivable over the lease term as a 'Receivable' and disclose the same in the balance sheet as a part of "Current Assets". The IAS:17 provides guidelines for the manner in which the leased asset must be depreciated and the finance charge must be written-off in the books of the lessee.[2] The guidelines also provide for the method to be followed for recognizing the finance income in the books of the lessor.

Comparing the guidelines contained in IAS:17, it is clear that the accounting treatment recommended by IASC is the same.

## ACCOUNTING TREATMENT FOR FINANCE LEASES

### In the Books of the Lessee

#### Illustration 1

Alan Electronics Leasing firm (AEL) has recently signed an import lease for importing an assembly testing equipment costing $75 million. The lease is non-cancelable for a period of five years and lease rentals are payable at the rate of $300/$1,000 annually in arrear. The economic life of the equipments is estimated to be five years. AEL depreciates equipments at the rate of 30 percent per annum as per the written down value method. The incremental borrowing rate and the marginal tax rate are 16 percent and 46 percent respectively. The unguaranteed residual value after five years can be assumed to be negligible.

a. Determine the capitalized value of the equipment and pass the relevant journal entries for capitalization.

b. Prepare a schedule showing the allocation of the unexpired finance charge.

c. Prepare all relevant ledger accounts for the first three years of the lease and show how the ledger balances will be reflected in the financial statements for these periods.

d. Assume an incremental borrowing rate of 14% for AEL. Compute the capitalized value of the equipment and prepare the schedule showing the allocation of the unexpired finance charge.

#### Solution

i. Fair market value of the equipment = $75 million (1)

ii. Present value of the minimum lease payments = (75 x 0.3) x $PVIFA_{(16,5)}$

= $73.67 million (2)

The asset must be capitalized at $73.67 million [(2) being less than (1)]

a. The journal entry for capitalization will be:

| | | |
|---|---|---|
| Leased equipment a/c Dr. | $73.67 million | |
| To Lease payable a/c | | $73.67 million |

b. The unexpired finance charge is equal to

(75 x 0.3 x 5) – 73.67 = $38.83 million.

According to IAS: 17, the unexpired finance charge must be allocated to each accounting period so as to produce a constant periodic rate of interest on the balance of the liability during each accounting period. This method of allocation is known as the Actuarial Method or the Effective Rate of Interest Method. The allocation based on this method is reflected in below given Table.

2 A detailed discussion of these guidelines with numerical illustrations is provided in the following section.

**Allocation of Unexpired Finance Charge**

| Year | Outstanding Lease Liability ($ in million) | Rate of Interest (%) | Interest Charge ($ in million) (B) x (C) | Principal Amount ($ in million) (E) = (F) – (D) | Lease Payment ($ in million) |
|---|---|---|---|---|---|
| (A) | (B) | (C) | (D) | (E) | (F) |
| 1 | 73.67 | 0.16 | 11.79 | 10.71 | 22.5 |
| 2 | 62.96 | 0.16 | 10.07 | 12.43 | 22.5 |
| 3 | 50.53 | 0.16 | 8.08 | 14.42 | 22.5 |
| 4 | 36.11 | 0.16 | 5.78 | 16.72 | 22.5 |
| 5 | 19.39 | 0.16 | 3.10 | 19.40 | 22.5 |

c.

Dr. **Ledger Accounts Leased Equipment a/c** Cr.

| Year | | Amount ($ in million) | Year | | Amount ($ in million) |
|---|---|---|---|---|---|
| 1 | To Lease payable a/c | 73.67 | 1 | By Balance c/d | 73.67 |
| 2 | To Balance b/d | 73.67 | 2 | By Balance c/d | 73.67 |
| 3 | To Balance b/d | 73.67 | 3 | By Balance c/d | 73.67 |

Dr. **Accumulated Depreciation a/c* (on the leased equipment)** Cr.

| Year | | Amount ($ in million) | Year | | Amount ($ in million) |
|---|---|---|---|---|---|
| 1 | To Balance c/d | 22.10 | 1 | By Depreciation a/c | 22.10 |
| 2 | To Balance c/d | 37.57 | 2 | By Balance b/d | 22.10 |
| | | | | By Depreciation a/c | 15.47 |
| | | 37.57 | | | 37.57 |
| 3 | To Balance c/d | 48.40 | 3 | By Balance b/d | 37.57 |
| | | | | By Depreciation a/c | 10.83 |
| | | 48.40 | | | 48.40 |

* Refer to working Note 1 for depreciation schedule.

Dr. **Depreciation a/c (on the leased equipment)** Cr.

| Year | | Amount ($ in million) | Year | | Amount ($ in million) |
|---|---|---|---|---|---|
| 1 | To Accumulated depreciation a/c | 22.10 | 1 | By Profit & Loss a/c | 22.10 |
| 2 | To Accumulated depreciation a/c | 15.47 | 2 | By Profit & Loss a/c | 15.47 |
| 3 | To Accumulated depreciation a/c | 10.83 | 3 | By Profit & Loss a/c | 10.83 |

Dr. **Lease Rentals a/c** Cr.

| Year | | Amount ($ in million) | Year | | Amount ($ in million) |
|---|---|---|---|---|---|
| 1 | To Bank a/c | 22.50 | 1 | By Lease payable a/c | 10.71 |
| | | | | By Finance charges a/c | 11.79 |
| | | 22.50 | | | 22.50 |
| 2 | To Bank a/c | 22.50 | 2 | By Lease payable a/c | 12.43 |
| | | | | By Finance charge a/c | 10.07 |
| | | 22.50 | | | 22.50 |
| 3 | To Bank a/c | 22.50 | 3 | By Lease payable a/c | 14.42 |
| | | | | By Finance charge a/c | 8.08 |
| | | 22.50 | | | 22.50 |

Dr. **Finance Charges a/c** Cr.

| Year | | Amount ($ in million) | Year | | Amount ($ in million) |
|---|---|---|---|---|---|
| 1 | To Lease rental a/c | 11.79 | 1 | By Profit & Loss a/c | 11.79 |
| 2 | To Lease rental a/c | 10.07 | 2 | By Profit & Loss a/c | 10.07 |
| 3 | To Lease rental a/c | 8.08 | 3 | By Profit & Loss a/c | 8.08 |

Dr. **Lease Payable a/c** Cr.

| Year | | Amount ($ in million) | Year | | Amount ($ in million) |
|---|---|---|---|---|---|
| 1 | To lease rental a/c | 10.71 | 1 | By Leased equipment a/c | 73.67 |
| | To Balance c/d | 62.96 | | | |
| | | 73.67 | | | 73.67 |
| 2 | To lease rental a/c | 12.43 | 2 | By balance b/d | 62.96 |
| | To balance c/d | 50.53 | | | |
| | | 62.96 | | | 62.96 |
| 3 | To lease rental a/c | 14.42 | 3 | By Balance b/d | 50.53 |
| | To balance c/d | 36.11 | | | |
| | | 50.53 | | | 50.53 |

**Disclosure in the Financial Statements**

**Year 1:**

Dr. **Profit & Loss a/c** Cr.

| | Amount ($ in million) | | Amount ($ in million) |
|---|---|---|---|
| Finance Charges | 11.79 | | |
| Depreciation | 22.10 | | |

Dr. **Balance Sheet** Cr.

| Liabilities | Amount ($ in million) | Assets | Amount ($ in million) |
|---|---|---|---|
| Secured Loans | | Fixed Assets | |
| Lease Payable | 50.53 | Leased equipment: | |
| | | Gross Block | 73.67 |
| | | Less: Accumulated depreciation | 22.10 |
| Current Liabilities | | | |
| Lease Payable | 12.43 | | |
| | | Net Block | 51.57 |

**Notes to Accounts:**

The commitments for minimum lease payments under the finance lease are as follows:

| Year | Lease Payment ($ in million) |
|---|---|
| 2 | 22.5 |
| 3 | 22.5 |
| 4 | 22.5 |
| 5 | 22.5 |

**Year 2:**

Dr. **Profit & Loss a/c** Cr.

| | Amount ($ in million) | | Amount ($ in million) |
|---|---|---|---|
| Finance charges | 10.07 | | |
| Depreciation | 15.47 | | |

Dr. **Balance Sheet** Cr.

| Liabilities | Amount ($ in million) | Assets | Amount ($ in million) |
|---|---|---|---|
| Secured Loans | | Fixed Assets | |
| Lease Payable | 36.11 | Lease Equipment: | |
| | | Gross Block | 73.67 |
| Current Liabilities | | Less: Depreciation | 37.57 |
| Lease Payable | 14.42 | | |
| | | Net Block | 36.10 |

**Notes to Accounts:**

The commitments for minimum lease payments under the finance lease are as follows:

| Year | Lease Payment ($ in million) |
|---|---|
| 3 | 22.5 |
| 4 | 22.5 |
| 5 | 22.5 |

**Year 3:**

Dr. **Profit & Loss a/c** Cr.

| | Amount ($ in million) | | Amount ($ in million) |
|---|---|---|---|
| Finance Charges | 8.08 | | |
| Depreciation | 10.83 | | |

**Balance Sheet**

| Liabilities | Amount ($ in million) | Assets | Amount ($ in million) |
|---|---|---|---|
| Secured Loans | | Fixed Assets | |
| Lease Payable | 19.39 | Leased Equipment: | |
| | | Gross Block | 73.67 |
| | | Less: Accumulated depreciation | 48.40 |
| Current Liabilities | | | |
| Lease Payable | 16.72 | | |
| | | Net Block | 25.27 |

**Notes to Accounts**

The commitments for minimum lease payments under the finance lease are as follows:

| Year | Lease Payments ($ in million) |
|---|---|
| 4 | 22.5 |
| 5 | 22.5 |

d. At an incremental borrowing rate of 14%, the present value of the minimum lease payments will be equal to:

$(75 \times 0.3) \times PVIFA_{(14,5)} = 22.5 \times 3.433 = \$77.24$ million ... (3)

Since the fair market value of the asset is $75 million [less than (3)] the asset must be capitalized at $75 million.

The effective rate of interest (r) can be obtained from the equation:

$22.5 \times PVIFA_{(r,5)} = 75$

i.e., $PVIFA_{(r,5)} = 3.333$

Interpolation in the range (155, 16%) yields r = 0.1524 or 15.24%

The unexpired finance charge will be allocated over the lease period as follows:

**Allocation of Unexpired Finance Charge**

($ in million)

| Year | Outstanding Lease Liability | Rate of Interest | Interest Charge | Principal Amount | Lease Payment |
|---|---|---|---|---|---|
| 1 | 75 | 0.1524 | 11.43 | 11.07 | 22.5 |
| 2 | 63.93 | 0.1524 | 9.74 | 12.76 | 22.5 |
| 3 | 51.17 | 0.1524 | 7.80 | 14.70 | 22.5 |
| 4 | 36.47 | 0.1524 | 5.56 | 16.94 | 22.5 |
| 5 | 19.53 | 0.1524 | 2.97 | 19.53 | 22.5 |

**Working Notes**

1. Depreciation has been provided @30% p.a. on the WDV basis as follows:

| Year | Depreciation Charge | ($ in million) |
|---|---|---|
| 1 | 73.67 x 0.3 | 22.1 |
| 2 | 73.67 x (1 – 0.3) x 0.3 | 15.47 |
| 3 | 73.67 x $(1 – 0.3)^2$ x 0.3 | 10.83 |
| 4 | 73.67 x $(1 – 0.3)^3$ x 0.3 | 7.58 |
| 5 | 73.67 x $(1 – 0.3)^4$ x 0.3 | 5.31 |

2. As at the end of each accounting period that portion of the lease payable which falls due for payment in the next accounting period has been classified as a current liability. The balance has been shown under secured loans. This is a part of the disclosure requirement under IAS:17.

From Illustration 1, the reader must have noted that the depreciation charge and the finance charge for each accounting period do not add up to the lease rentals for that period. It therefore follows that the values of the leased asset and the corresponding liability are unlikely to be equal after the inception of the lease.

To repeat, the method we have followed for allocating the unexpired finance charge is known as the Effective Rate of Interest Method or the Actuarial Method. There are two other methods for allocating the unexpired finance charge and they are the Sum of Years Digits Method and the Straight Line Method. The allocations based on these methods for AEL are presented in below given Tables respectively.

**Allocation of Unexpired Finance Charge under Sum of Digits Method**

| Year | Total Finance Charge to be allocated ($ in million) | Weightage | Allocated Charge ($ in million) |
|---|---|---|---|
| 1 | 38.83 | 5/15 | 12.94 |
| 2 | | 4/15 | 10.35 |
| 3 | | 3/15 | 7.77 |
| 4 | | 2/15 | 5.18 |
| 5 | | 1/15 | 2.59 |

**Note:** The denominator of 15 is the sum of (1 + 2 + 3 + 4 + 5)

**Allocation of Finance Charge**
**under Straight Line Method**

| Year | Allocated Charge ($ in million) |
|---|---|
| 1 | 7.77 |
| 2 | 7.77 |
| 3 | 7.77 |
| 4 | 7.76 |
| 5 | 7.76 |

While the IAS:17 recommends the application of the Actuarial Method for allocating the finance charge, it also states that some form of approximation can be employed in practice to simplify calculations. From the above Tables, we can observe that the Sum of Digits Method (also known as Rule of 78) provides an acceptable approximation.

Regarding disclosure requirements for finance leases, the IAS: 17 requires the following information to be disclosed:

– Amount of assets that are subject to finance leases on each balance sheet date.

– Liabilities related to these assets differentiating between the current and long-term portions.

– Commitments for minimum lease payments in summary form giving the amounts and the periods in which these payments will become due.

– Significant financing restrictions, renewal or purchase options, contingent rentals, etc., included in the finance lease contracts.

## In the Books of the Lessor

The IAS: 17 recommend the following accounting for finance leases in the books of the lessor:

- The lessor must record the finance lease as a receivable in the balance sheet at an amount equal to the net investment in the lease.
- The lessor must bifurcate the lease rental into two components (i) the capital component representing the return of investment; and (ii) the interest component representing the return on investment in respect of the finance lease. (The effective rate of interest method can be applied for obtaining the required pattern of allocation.)
- The pattern of recognizing the finance income must also reflect the uncertainties associated with the collectibility of lease rentals, expectations of the future rates of interest, etc., particularly for long-term leases.
- Initial direct costs such as commission (lease brokerage) and legal fees incurred by the lessor for negotiating and structuring a lease can be either expensed immediately or allocated against the finance income over the lease term (Refer para. 18 of the IAS: 17 and illustration 2).
- Where the estimated unguaranteed residual value is used in computing the lessor's gross investment, estimates must be reviewed regularly. If there occurs a permanent reduction in value then such reduction in value (in respect of the amounts already accrued) must be charged to income immediately.

### Illustration 2

Consider the data provided in illustration 1. The lease proposal has been structured by Innovative Leasing Company (ILC). The estimated direct cost of setting up the lease transaction is $0.75 million. The unguaranteed residual value of the equipment at the end of 5 years is estimated to be $3.25 million.

a. Prepare a schedule showing the allocation of the unearned finance income.

b. Prepare all relevant ledger accounts for the first three years lease and show how these ledger balances will be reflected in the financial statements for the respective periods.

### Solution

The interest rate (r) implicit in the lease transaction is given by the equation:

$$(75 \times 0.3) \times PVIFA_{(r,5)} + 3.25 \times PVIF_{(r,5)} = 75 \quad \ldots (1)$$

At r = 16%, LHS of equation (1) is equal to

$$(22.5 \times 3.274) + (3.25 \times 0.476) = 75.21$$

At r = 17%, LHS of the equation (1) is equal to

$$(22.5 \times 3.199) + (3.25 \times 0.456) = 73.46$$

Applying a linear approximation in the interval (16%, 17%) we get,

$$r = 16\% + 1\% \times \frac{75 - 75.21}{73.46 - 75.21} = 16.12\%$$

Unearned finance income = $((75 x 0.3 x 5) + 3.25 – 75) million = $40.75 million

The allocation of the unearned finance income of $40.75 million under the actuarial method is given in below Table:

**Allocation of Unearned Finance Income**

| Year | Outstanding Investment at the beginning ($ in million) | Rate of Interest | Interest Content ($ in million) | Capital Content ($ in million) | Lease Receipt ($ in million) |
|---|---|---|---|---|---|
| (A) | (B) | (C) | (D) = (B) x (C) | (E) = (F) – (D) | (F) |
| 1 | 75.00 | 16.12% | 12.09 | 10.41 | 22.50 |
| 2 | 64.59 | | 10.41 | 12.09 | 22.50 |
| 3 | 52.50 | | 8.46 | 14.04 | 22.50 |
| 4 | 38.46 | | 6.20 | 16.30 | 22.50 |
| 5 | 22.16 | | 3.57 | 22.16 | 25.73 |

**Ledger Accounts**

Dr. **Gross Investment in Lease a/c** Cr.

| Year | | Amount ($ in million) | Year | | Amount ($ in million) |
|---|---|---|---|---|---|
| 1 | To Inventory a/c | 75.00 | 1 | By Bank a/c | 22.50 |
| | To Unearned finance income a/c | 40.75 | | By Balance | 93.25 |
| | | 115.75 | | | 115.75 |
| 2 | To Balance b/d | 93.25 | 2 | By Bank a/c | 22.50 |
| | | | | By Balance c/d | 70.75 |
| | | 93.25 | | | 93.25 |
| 3 | To Balance b/d | 70.75 | 3 | By Bank a/c | 22.50 |
| | | | | By Balance c/d | 48.25 |
| | | 70.75 | | | 70.75 |

Dr. **Unearned Finance Income a/c** Cr.

| | Amount ($ in million) | | Amount ($ in million) |
|---|---|---|---|
| To Finance Income a/c | 12.09 | By Gross Investment in Lease a/c | 40.75 |
| To Balance c/d | 28.66 | | |
| | 40.75 | | 40.75 |
| To Finance Income a/c | 10.41 | By Balance b/d | 28.66 |
| To Balance c/d | 18.25 | | |
| | 28.66 | | 28.66 |
| To Finance Income a/c | 8.46 | By Balance b/d | 18.25 |
| To Balance c/d | 9.79 | | |
| | 18.25 | | 18.25 |

Dr. **Finance Income a/c** Cr.

| Year | | Amount ($ in million) | Year | | Amount ($ in million) |
|---|---|---|---|---|---|
| 1 | To Profit and Loss a/c | 12.09 | 1 | By Unearned finance income a/c | 12.09 |
| 2 | To Profit and Loss a/c | 10.41 | 2 | By Unearned finance income a/c | 10.41 |
| 3 | To Profit and Loss a/c | 8.46 | 3 | By Unearned finance income a/c | 8.46 |

Dr. **Initial Direct Costs a/c** Cr.

| Year | Amount ($ in million) | Year | Amount ($ in million) |
|---|---|---|---|
| 1 To Bank a/c | 0.75 | 1 By Profit and Loss a/c | 0.75 |

**Disclosure in the Financial Statements**

**Year 1:**

Dr. **Profit & Loss a/c** Cr.

| Expenses | Amount ($ in million) | Incomes | Amount ($ in million) |
|---|---|---|---|
| Initial Direct Cost | 0.75 | Finance Income | 12.09 |

**Balance Sheet**

| Liabilities | Amount ($ in million) | Assets | Amount ($ in million) |
|---|---|---|---|
| | | Current Assets: | |
| | | Net investment in lease (115.75 – 40.75 – 10.41) | 64.59 |

**Year 2:**

Dr. **Profit & Loss a/c** Cr.

| Expenses | Amount ($ in million) | Incomes | Amount ($ in million) |
|---|---|---|---|
| | | Finance Income | 10.41 |

**Balance Sheet**

| Liabilities | Amount ($ in million) | Assets | Amount ($ in million) |
|---|---|---|---|
| | | Current Assets: | |
| | | Net investment in lease (64.59 – 12.09) | 52.50 |

**Year 3:** **Profit & Loss a/c**

| Expenses | Amount ($ in million) | Incomes | Amount ($ in million) |
|---|---|---|---|
| | | Finance Income | 8.46 |

**Balance Sheet**

| Liabilities | Amount ($ in million) | Assets | Amount ($ in million) |
|---|---|---|---|
| | | Current Assets: | |
| | | Net investment in lease (52.5 – 14.04) | 38.46 |

The recognition of finance income in illustration 2 is based on the net investment in lease, i.e., the gross investment in lease less the unearned finance income. In some special types of leasing arrangements like the leveraged lease, the lessor finances the cost of acquisition through a mix of own funds and non-recourse long-term debt. In such cases, the basis for recognition of finance income will be the net cash investment in the lease i.e., net investment in lease less the non-recourse debt. Since the patterns of income recognition based on the net investment and net cash investment can differs significantly, IAS:17 recommends that the chosen basis must be applied consistently to leases to the same financial character.

## In the Books of the Manufacturer-Lessor

We have so far discussed the accounting treatment for a finance lease in the books of a third party lessor. Now let us look at the accounting treatment for such transactions in the books of a manufacturer-lessor or a dealer-lessor.

From the stand point of manufacturer-lessor or a dealer-lessor, a finance lease gives rise to two types of income (a) the profit or loss resulting from an outright sale of a similar equipment at the normal selling price; and (b) the finance income inherent in the transaction. The IAS:17 recommends the following procedure for estimating the sale revenue associated with the transaction:

**Step 1:** Determine the present value of the minimum lease payments plus the unguaranteed residual value at the commercial rate of interest.

**Step 2:** Estimate the fair market value of the leased equipment.

**Step 3:** Set the sale revenue equal to the present value determined in step 1 or the fair market value estimated in step 2, whichever is lower.

### Illustration 3

Norris Systems Company is a dealer lessor in minicomputers. The company sells its products either on a deferred payment basis (hire purchase) or on a five-year non-cancelable lease.

The cash price of a minicomputer is $6 million which includes a profit margin of 25 percent on cost. The lease rate is $240/$1,000 and the lease rentals are payable annually in advance. The estimated unguaranteed residual value of the system at the end of the lease period is 5 percent of the initial cash price. The prevailing market rate of interest for medium term loans is 15 percent per annum.

a. Determine the sale revenue to be recognized under the finance lease proposal.

b. Prepare a schedule showing the allocation of the finance income over the period.

c. Prepare the relevant ledger accounts in the books of Norris Systems for the first year of the lease period. Also show how the transaction will be reflected in the financial statements prepared at the end of the first year of the lease period.

### Solution

a. i. Annual lease rental = 6 x 0.024 x 12 = $1.73 million

Present Value of the Annual Lease Rental (receivable in advance) plus the unguaranteed residual value discounted @15% per annum is equal to:

$1.73 \times PVIF\ \overline{A}_{(15,5)} + 0.3 \times PVIF_{(15,5)} = \$6.82$ million

ii. Fair market value = $6 million

Since (ii) < (i), Norris System must record its sale revenue at $6 million.

b. The rate of interest implicit in the proposal (r) is given by the equation

$1.73 \times PVIFA_{(r,5)} + 0.3 \times PVIF_{(r,5)} = 6$

i.e., $1.73 \times (1 + r) \times PVIFA_{(r,5)} + 0.3 \times PVIF_{(r,5)} = 6$ (1)

Through the process of trial and error, we find that the Eq.(1), is satisfied at r = 23.92%

Therefore the rate of interest implicit in the lease proposal is 23.92% p.a.

Unearned Finance Income = [(1.73 x 5) + 0.3] – 6 = $2.95 million

The allocation of unearned finance income based on the assumption that the lease rental of $2.14 million (= 1.73 x 1.2392) received annually in arrear is shown in below given Table.

**Allocation of Unearned Finance Income**

| Year | Investment Outstanding at the Beginning ($ in million) | Rate of Interest | Interest Current ($ in. million) | Capital Content ($ in million) | Lease Related Receipt ($ in million) |
|---|---|---|---|---|---|
| 1 | 6 | 23.92% | 1.43 | 0.71 | 2.14 |
| 2 | 5.29 | | 1.26 | 0.88 | 2.14 |
| 3 | 4.41 | | 1.05 | 1.09 | 2.14 |
| 4 | 3.32 | | 1.09 | 1.05 | 2.14 |
| 5 | 1.97 | | 0.47 | 1.97 | 2.44 |

Since the lease rentals are received annually in advance, the annual lease rentals must be adjusted for an interest rebate of $0.41 million (= 2.14 – 1.73). The allocation of the unearned finance income after effecting this adjustment is shown in below given Table.

**Allocation of Unearned Finance Income**

($ in million)

| Year | Investment Outstanding at the Beginning | Interest Content | Capital Content | Lease Related Receipt |
|---|---|---|---|---|
| 1 | 6.00 | 1.02 | 0.71 | 1.73 |
| 2 | 5.29 | 0.85 | 0.88 | 1.73 |
| 3 | 4.41 | 0.64 | 1.09 | 1.73 |
| 4 | 3.32 | 0.38 | 1.35 | 1.73 |
| 5 | 1.97 | 0.06 | 1.97 | 2.03 |

Dr. **Cost of Goods Sold a/c** Cr.

| Year | | Amount ($ in million) | Year | | Amount ($ in million) |
|---|---|---|---|---|---|
| 1 | To Inventory a/c (6 x 0.80) | 4.80 | 1 | By Profit and Loss a/c | 4.80 |

Dr. **Finance Income a/c** Cr.

| Year | | Amount ($ in million) | Year | | Amount ($ in million) |
|---|---|---|---|---|---|
| 1 | To Profit and Loss a/c | 1.02 | 1 | By Unearned finance income a/c | 1.02 |

**Disclosure in the Financial Statements**

Dr. **Profit & Loss a/c** Cr.

| | Amount ($ in million) | | Amount ($ in million) |
|---|---|---|---|
| Cost of goods sold | 4.8 | Sales income | 6 |
| | | Finance income | 1.02 |

**Balance Sheet**

| Liabilities | Amount ($ in million) | Assets | Amount ($ in million) |
|---|---|---|---|
| | | Current Assets: | 5.29 |
| | | Net investment in lease (6 – 0.71) | |

**Example of accounting for a finance lease – Asset returned to lessor**

Assume the following:

i. The lease is initiated on January 1, 20x7 for equipment with an expected useful life of 3 years. The equipment reverts back to the lessor on expiration of the lease agreement.

ii. The FMV of the equipment is $135,000.

iii. Three payments are due to the lessor in the amount of $50,000 per year beginning December 31, 20x7. An additional sum of $1,000 is to be paid annually by the lessee for insurance.

iv. Lessee guarantees a $10,000 residual value on December 31, 20x8 to the lessor.

v. Irrespective of the $10,000 residual value guarantee, the leased asset is expected to have only a $1,000 salvage value on December 31, 20x8.

vi. The lessee's incremental borrowing rate is 10% (lessor's implicit rate is unknown).

vii. The present value of the lease obligation is as follows:

| | | | | |
|---|---|---|---|---|
| PV of guaranteed residual value | = | $10,000 x 0.7513* | = | $7,513 |
| PV of annual payments | = | $50,000 x 2.4869** | = | $124,345 |
| | | | | $131,858 |

* The present value of an amount of $1 due in three periods at 10% is 0.7513.

** The present value of an ordinary annuity of $1 for three periods at 10% is 2.4869.

The first step in dealing with any lease transaction is to classify the lease. In this case, the lease term is for 3 years, which is equal to 100% of the expected useful life of the asset. Notice that the test of fair value versus present value is also fulfilled, as the PV of the minimum lease payments ($131,858) could easily be considered as being equal to substantially all the FMV ($135,000), being equal to 97.7% of the FMV. Thus, this lease should be accounted for as a finance lease.

In assumption 7 above the present value of the lease obligation is computed. Note that the executory costs (insurance) are not included in the minimum lease

payments and that the incremental borrowing rate of the lessee was used to determine the present value. This rate was used because the implicit rate was not determinable.

**Note:** To have used the implicit rate it would have to have been known to the lessee.

The entry necessary to record the lease on 1/1/20x1 is

| | | |
|---|---|---|
| Leased equipment | 131,858 | |
| Lease obligation | | 131,858 |

Note that the lease is recorded at the present value of the minimum lease payments, which in this case is less than the FMV. If the present value of the minimum lease payments had exceeded the FMV, the leased would be recorded at FMV.

The next step is to determine the proper allocation between interest and a reduction in the lease obligation for each lease payment. This is done using the effective interest method as illustrated below.

| Year | Cash payment | Interest expense | Reduction in lease obligation | Balance of lease obligation |
|---|---|---|---|---|
| Inception of lease | | | | $1,31,858 |
| 1 | $50,000 | $13,186 | $36,814 | $95,044 |
| 2 | $50,000 | $9,504 | $40,496 | $54,548 |
| 3 | $50,000 | $5,452 | $44,548 | $10,000 |

The interest is calculated at 10% (the incremental borrowing rate) of the balance of the lease obligation for each period, and the remainder of the $50,000 payment is allocated to a reduction in the lease obligation. The lessee is also required to pay $1,000 for insurance on an annual basis. The entries necessary to record all payments relative to the lease for each of the 3 years are shown below.

| | 12/31/20x0 $ | 12/31/20x1 $ | 12/31/20x2 $ |
|---|---|---|---|
| Insurance expense | 1,000 | 1,000 | 1,000 |
| Interest expense | 13,186 | 9,504 | 5,452 |
| Lease obligation | 36,814 | 40,496 | 44,548 |
| Cash | 51,000 | 51,000 | 51,000 |

The leased equipment recorded as an asset must be amortized (depreciated).

The balance of this account is $131,858; however, as with any other asset, it cannot be depreciated below the estimated residual value of $1,000 (note that it is depreciated down to the actual estimated residual value, not the guaranteed residual value). In this case, the straight-line depreciation method is applied over a period of 3 years. This 3-year period represents the lease term, not the life of the asset, because the asset reverts back to the lessor at the end of the lease term. Therefore, the following entry will be made at the end of each year:

| | | |
|---|---|---|
| Depreciation expense | 43,619 | |
| Accumulated depreciation | | 43,619 [($131,858 – 1,000) ÷ 3] |

Finally, on 12/31/20x2 we must recognize the fact that ownership of the property has reverted back to the owner (lessor). The lessee made a guarantee that the residual value would be $10,000 on 12/31/20x2, as a result, the lessee must make

up the difference between the guaranteed residual value and the actual residual value with a cash payment to the lessor. The following entry illustrates the removal of the leased asset and obligation from the books of the lessee:

| | | |
|---|---|---|
| Lease obligation | 10,000 | |
| Accumulated depreciation | 1,30,858 | |
| Cash | | 9,000 |
| Leased equipment | | 1,31,858 |

The foregoing example illustrated a situation where the asset was to be returned to the lessor. Another situation exists (under BPO or transfer of title) where the asset is expected to remain with the lessee. Remember that leased assets are amortized over their useful life when title transfers or a bargain purchase option equal the guaranteed residual value, the bargain purchase option price, or a termination penalty.

Example of Accounting for a finance Lease–Asset ownership transferred to lessee and fair market value of leased asset lower than present value of minimum lease payments

Assume the following:

i. A 3-year lease is initiated on January 1, 20x0 for equipment with an expected useful life of 5 years.

ii. Three annual lease payments of $52,000 are required beginning on January 1, 20x0 (note that the payment at the beginning of the year changes the PV computation).

The lessor pays $2,000 per year for insurance on the equipment.

iii. The lessee can exercise a bargain purchase option on December 31, 20x2 for $10,000.

The expected residual value at December 31, 20x3.

iv. The fair market value of the property leased in $1,40,000.

Once again, the classification of the lease must take place prior to the accounting for it. This lease is classified as a finance lease because it contains a Bargain Purchase Option (BPO). Note that in this case, the PV versus FMV test is also clearly fulfilled.

| | | | | $ |
|---|---|---|---|---|
| PV of bargain purchase option | = | $10,000 x 0.7513* | = | 7,513 |
| PV of annual payments | = | ($52,000 x 2.000) x 2.7355** | = | 136,755 |
| | | | | $144.268 |

* The present value of an amount of $1 due in three periods at 10% is 0.7513.

** The present value of an ordinary of $1 for three periods at 10% is 2.7355.

Notice that in the example above, the present value of the lease obligation is greater than the FMV of the asset. Also notice that since the lessor pays $20,000 a year for insurance, this payment is treated as executory costs and hence excluded from calculation of the present value of annual payments. In conclusion, since the PV is greater than the FMV, the lease obligation (as well as the leased asset) must be recorded at the FMV of the asset leased (being the lower of the two). The entry on 1/1/20x6 as follows:

| | | |
|---|---|---|
| Leased equipment | 140,000 | |
| Obligation under finance lease | | 140,000 |

According to IAS:17, the apportionment between interest and principal is to be such that interest recognized reflects the use of a constant periodic rate of interest applied to the remaining balance of the obligation. As noted above, a special rule

applies under US GAAP (which are illustrated here) when the present value of the minimum lease payments exceeds the fair market value of the leased asset. When the PV exceeds the FMV of the leased asset, a new rate must be computed through a series of trial-and-error calculations. In this situation, the interest rate was determined to be 13.265%. The amortization of the lease takes place as follows:

| Year | Cash payment $ | Interest expense $ | Reduction in lease obligation $ | Balance of lease obligation $ |
|---|---|---|---|---|
| Inception of lease | | | | 140,000 |
| 1/1/06 | 50,000 | – | 50,000 | 90,000 |
| 1/1/07 | 50,000 | 11,939 | 38,061 | 51,939 |
| 1/1/08 | 50,000 | 6,890 | 43,110 | 8,829 |
| 12/31/08 | 10,000 | 1,171 | 8,829 | – |

The following entries are required in years 20x6 through 20x8 recognize the payment and depreciation (amortization).

| | | 20x6 $ | | 20x7 $ | | 20x8 $ | |
|---|---|---|---|---|---|---|---|
| 1/1 | Operating expense | 2,000 | | 2,000 | | 2,000 | |
| | Obligation under finance lease | 50,000 | | 38,061 | | 43,110 | |
| | Accrued interest payable | | | 11,939 | | 6,890 | |
| | Cash | | 52,000 | | 52,000 | | 52,000 |
| 12/31 | Interest expense | 11,939 | | 6,890 | | 1,171 | |
| | Accrued interest payable | | 11,939 | | 6,890 | | |
| | Obligation under finance lease | | | | | | 1,171 |
| 12/31 | Depreciation expense | 27,800 | | 27,800 | | 27,800 | |
| | Accumulated depreciation | | 27,800 | | 27,800 | 27,800 | |
| | ($139,000, 5 years) | | | | | | 27,800 |
| 12/31 | Obligation under finance lease | | | | | 10,000 | |
| | Cash | | | | | | 10,000 |

**Impairment of Leased Asset:** The original IAS:17 did not address the issue of how impairments of leased assets are to be assessed or, if determined to have occurred, how they would need to be accounted for.

## ACCOUNTING AND REPORTING FOR OPERATING LEASE

In the case of an operating lease, the risks and rewards incidental to ownership of the asset remain with the lessor. Consequently, accounting for such transactions in the books of lessee and the lessor are uncomplicated.

### In the Books of the Lessee

The lessee treats the lease rental payable over the lease term as a charge to the profit and loss account. The IAS:17 states that the lease rentals must be allocated to each accounting period in a manner that is representative of the time pattern of the user's benefit.

### In the Books of the Lessor

In the books of the lessor, the asset given on an operating lease will be treated as a depreciable asset and the lease rentals as income. In the case of a manufacturer or dealer-lessor it needs to the noted that there is no selling profit realized because the operating lease is not equivalent to a sale. The IAS:17 recommends that (i) rental income (excluding receipts for services provided such as insurance and maintenance) must be recognized on a straight line basis over the lease term unless some other systematic basis is more representative of the earning process contained in the lease; (ii) costs including depreciation incurred in earning the rental income must be charged to income; (iii) the basis for charging depreciation on the leased asset must be consistent with the lessor's normal depreciation policy for similar assets; and (iv) initial direct costs can be either written off in the period in which they are incurred or treated as deferred revenue expenditure and written off in the period in which they are incurred or treated as deferred revenue expenditure and written off over the lease term in proportion to the recognition of rental income. These guidelines also recommend disclosure of the leased assets in the balance sheet by each major class of asset.

## ACCOUNTING FOR LEASEHOLD LAND AND BUILDINGS

So far we have discussed accounting for leases of depreciable assets. What about the accounting for leasehold land? A characteristic feature of land is that it has an indefinite useful life and if title is not expected to pass to the lessee on the expiry of the lease term, the lessee is deemed not to have received substantially all the risks and rewards incident to ownership. Therefore the lease will be treated as an operating lease and the accounting guidelines discussed above will apply. This is so even if a premium is paid for the leasehold. The premium must be treated as pre-paid rental charge and amortized over the lease term.

Likewise in the case of long-term leases of buildings where the title is not expected to pass to the lessee on the expiry of the lease term and/or the terms provide for periodically indexing the rentals to market rates, the lessor is deemed to have retained a significant portion of the rewards and risks associated with ownership. Therefore such leases are also regarded as operating leases.

## SUMMARY

- The first accounting standard for lease accounting was issued by the Financial Accounting Standards Board (FASB) of the US (FASB Statement 13:Accounting of Leases). Drawing largely on this standard, the International Accounting Standards Committee (IASC) issued the IAS:17 on Accounting for Leases.
- The IAS:17 requires a finance lease to be reflected in the balance sheet of a lessee as an asset and as a liability in order to properly account for the economic resources and the level of obligations of the lessee firm. The guidelines require (a) the asset and liability to be recorded at the inception of the lease at an amount equal to the fair market value of the asset or, if lower, at the present value of the minimum lease payments; (b) the rentals to be apportioned into interest and capital contents using the effective rate of interest (actuarial) method or any other acceptable approximation; (c) expense the interest (finance) charge and (d) depreciate the asset in line with the depreciation policy pursued in respect of the assets owned. The leased asset must be fully depreciated over the shorter of the lease term or its useful life.

- The IAS:17 requires a finance lease to be recorded as a receivable in the books of the lessor at an amount equal to the net investment in lease i.e. gross investment in lease less unearned finance income. This accounting standard recommends the use of the effective rate of interest method for allocating the unexpired finance income to the relevant accounting period.
- Lease of land where the title is not transferred from the lessor to the lessee on expiry of the lease term is accounted for as an operating issue. Likewise long-term lease of buildings where there is a provision for revising rentals periodically must be accounted for as an operating lease.
- An exploratory survey conducted for assessing the reaction of the leasing industry to introduction of accounting standards has revealed that lessors are not opposed to the idea of disclosing the lease commitments by way of notes to the balance sheet of the lessee. In fact, fifty percent of the respondents have favored capitalization of lease in the books of the lessee provided there is a tacit assurance from the income tax authorities that the tax treatment will not be linked to the accounting treatment.

# Appendix I
## International Accounting Standard
## Accounting for Leases (IAS:17)

**Introduction**

1. This Statement deals with accounting for leases. It does not deal with the following specialized types of lease:

   a. Lease agreements to explore for or use natural resources such oil, gas, timber, metals and other mineral rights.[3]

   b. Licensing agreements for such items as motion picture films, video recording, plays, manuscripts, patents and copyrights.

**Definitions**

2. The following terms are used in this statement with the meanings specified:

   **Lease:** An agreement whereby the lessor conveys to the lessee in return for rent the right to use an asset for an agreed period of time.

   **Finance lease:** A lease that transfers substantially all the risks and rewards incident to ownership of an asset. Title may or may not eventually be transferred.

   **Operating lease:** A lease other than a finance lease.

   **Non-cancelable lease:** A lease that is cancelable only: (a) upon the occurrence of some remote contingency (b) with the permission of the lessor (c) if the lessee enters into a new lease for the same or an equivalent asset with the lessor, or (d) payment by the lessee of an additional amount so that, at inception, continuation of the lease is reasonably certain.

   **Inception of the lease:** The earlier of the date of the lease agreement or of a commitment by the parties to the principal provisions of the lease.

   **Lease term:** The non-cancelable period for which the lessee has contracted to lease the asset, together with any further terms for which the lessee has the option to continue to lease the asset, with or without further payment, which option at the inception of the lease it is reasonably certain that the lessee will exercise.

   **Minimum lease payments:** The payments over the lease term that the lessee is or can be required to make (excluding costs for services and taxes to be paid by and be reimbursable to, the lessor) together with:

   a. In the case of the lessee, any amounts guaranteed by him or by a party related to him; or

   b. In the case of the lessor, any residual value guaranteed to him by either the lessee, or a party related to the lessee, or an independent third party financially capable of meeting this guarantee.

   However, if the lessee has the option to purchase the asset at a price which is expected to be sufficiently lower than the fair value at the date the option becomes exercisable that, at the inception of the lease, it is reasonably certain that the option will be exercised, the minimum lease payments comprise the minimum rentals payable over the lease term and the payment required to exercise this purchase option.

3 The definition of a lease includes contracts for the hire of an asset which contain a provision giving the hirer an option to acquire title to the asset upon the fulfillment of agreed conditions. These contracts are described as hire purchase contracts in some countries. In some countries, different names are used for agreement which have the characteristics of a lease (e.g. bare-boat charters).

**Fair value:** The amount for which an asset could be exchanged between a knowledgeable, willing buyer and a knowledgeable, willing seller in an arm's length transaction.

**Useful life:** Is either (a) the period over which a depreciable asset is expected to be used by the enterprise; or (b) the number of production or similar units expected to be obtained from the asset by the enterprise.

**Unguaranteed residual value:** That portion of the residual value of the leased asset (estimated at the inception of the lease), the realization of which by the lessor is not assured or is guaranteed solely by a party related to the lessor.

**Gross investment in the lease:** The aggregate of the minimum lease payments under a finance lease from the stand point of the lessor and any unguaranteed residual value accruing to the lessor.

**Unearned finance income:** The difference between the lessor's gross investment in the lease and its present value.

**Net investment in the lease:** The gross investment in the lease less unearned finance income.

**Net cash investment:** The balance of the cash outflows and inflows in respect of the lease, excluding flows relating to insurance, maintenance and similar costs rechargeable to the lessee. The cash outflows include payments made to acquire the asset, tax payments, interest and principal on third party financing. Inflows include rental receipts, receipts from residual values and grants, tax credits and other tax savings or repayments arising from the lease.

**Interest rate implicit in the lease:** The discount rate that, at the inception of the lease, causes the aggregate present value of (a) the minimum lease payments, from the stand point of the lessor, and (b) the unguaranteed residual value to be equal to the fair value of the leased asset, net of any grants and tax credits receivable by the lessor.

**Lessee's incremental borrowing rate of interest:** The rate of interest the lessee would have to pay on a similar lease or, if that is not determinable, the rate that, at the inception of the lease, the lessee would incur to borrow, over a similar term and with a similar security, the funds necessary to purchase the asset.

**Contingent rental:** A rental that is not fixed in amount but is based on a factor other than just the passage of time (example, percentage of sales, amount of usage, price indices, market rates of interest).

**Explanation**

***Classification of Leases***

3. The classification of leases adopted in this Standard is based on the extent to which risks and rewards, incident to ownership of a leased asset, lie with the lessor or the lessee. Risks include the possibilities of losses from idle capacity or technological obsolescence and of variations in return due to changing economic conditions. Rewards may be represented by the expectation of profitable operation over the asset's economic life and of gain from appreciation in value or realization of a residual value.

4. Since the transaction between a lessor and a lessee is based on a lease agreement common to both parties, it is appropriate to use consistent definitions. Normally the two parties will classify the lease in the same way. Nevertheless, the application of these definitions to the differing circumstances of the two parties may sometimes result in the same lease being classified differently by lessor and lessee.

5. Whether a lease is a finance lease or not depends on the substance of the transaction rather than the form of the contract. A lease is classified as a finance lease if it transfers substantially all the risks and rewards incident to ownership. Such a lease is normally non-cancelable and secures for the lessor the recovery of his capital outlay plus a return for the funds invested.[4] A lease is classified as an operating lease if substantially all the risks and rewards incident to ownership are not transferred.

**The Accounting Treatment of Leases in the Financial Statements of Lessees**

6. Transactions and other events ought to be accounted for and presented in accordance with their substance and financial reality and not merely with legal form. While the legal form of a lease agreement is that the lessee may acquire no legal title to the leased asset, in the case of finance leases the substance and financial reality are that the lessee acquires the economic benefits of the use of the leased asset for the major part of its useful life, in return for entering into an obligation to pay for that right an amount approximating to the fair value of the asset and the related finance charge.

7. If such lease transactions are not reflected in the lessee's balance sheet, the economic resources and the level of obligations of an enterprise are understated, thereby distorting financial ratios. It is, therefore, appropriate that a finance lease be recorded in the lessee's balance sheet both as an asset and as an obligation to pay future rentals.

**Finance Leases – Determination of the Amounts of Leased Assets and the Related Liabilities**

8. The rights and obligations arising from a finance lease are recorded at the beginning of the lease term at the fair value of the leased property, net of grants and tax credits receivable by the lessor, or, if lower, at the present value of the minimum lease payments. At the inception of the lease, the asset and the liability for the future rentals are recorded in the balance sheet at the same amounts.

9. In calculating present value of the minimum lease payments, the discount factor is the interest rate implicit in the lease, if it is practicable to determine; if not, the lessee's incremental borrowing rate is used.

10. The depreciable amount of a leased asset is allocated to each accounting period during the period of expected use on a systematic basis consistent with the depreciation policy the lessee adopts for depreciable assets that the owned. If there is a reasonably certainty that the lessee will obtain ownership by the end of the lease term, the period of expected use is the useful life of the asset, otherwise, the asset is depreciated over the shorter of the lease term or its useful life.

11. The difference between the total minimum lease payments over the lease term and the initial liability represents the finance charge. This charge is allocated to periods during the lease term so as to produce a constant periodic rate of interest on the remaining balance of the liability during each period in practice, some form of approximation is sometimes used to simplify the calculation.

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4 Examples of situations where a lease would normally be classified as a finance lease:
(a) The lease transfers ownership of the asset to the lessee by the end of the lease term.
(b) The lessee has the option to purchase the asset at a price which is expected to be sufficiently lower than fair value at the date the option becomes exercisable that, at the inception of the lease, it is reasonably certain that the option will be exercised.
(c) The lease term is for the major part of the useful life of the asset. Title may or may not eventually be transferred.
(d) The present value at the inception of the lease of the minimum lease payments is greater than or equal to substantially of the fair of the leased asset net of grants and tax credits to the lessor at that time. Title may or may not eventually be transferred.

12. A finance lease gives rise to a depreciation charge for the asset and a finance charge for each accounting period. The sum of these amounts is not normally the same as the rentals payable for the period and it is therefore inappropriate simply to charge the rentals payable to income. Accordingly, the asset and the related liability are unlikely to be equal in amount after the inception of the lease.

**Operating Leases**

13. For operating leases, rental expenses (excluding costs for services such as insurance and maintenance) is recognized on a systematic basis that is representative of the time pattern of the user's benefit, even if the payments are not on that basis.

**The Accounting Treatment of Lease in the Financial Statements of Lessor**

***Finance Leases***

14. Under a finance lease, substantially all the risks and rewards incident to ownership are transferred by the lessor, and thus the lease rentals receivable are treated by the lessor as repayments of principal and finance income to reimburse and reward him for his investment and services.

15. A lessor aims to allocate finance income over the lease term on a systematic and rational basis. This income allocation is usually based on a pattern reflecting a constant periodic return on the lessor's net investment outstanding in respect of the finance lease. Lease rentals relating to the accounting period, excluding costs for services, are applied against the gross investment in the lease to reduce both the principal and the unearned finance income.

16. In spreading income on a systematic basis lessor recognizes uncertainties relating for example to the collectibility of lease rentals or to future levels, of interest rates. The longer the term of lease the greater the risks involved and the consideration of prudence may require modification of the pattern of income recognition to reflect the circumstances.

17. Estimated unguaranteed residual values used in computing the lessor's gross investment in a lease are reviewed regularly. If there has been a permanent reduction the estimated unguaranteed residual value, the income allocation over the lease term is revised and any reduction in respect of amount already accrued is charged to income immediately.

18. Initial direct costs, such as commissions and legal fees, are often incurred by lessors in negotiating and arranging a lease. For finance leases, these initial direct costs are incurred to produce finance income and are either expanded immediately or allocated against this income over the lease term. The latter may be achieved by charging to income the cost as incurred and recognizing as income in the same period a portion of the unearned finance income equal to the initial direct costs.

19. When assessing whether the proposed terms of a lease will produce an acceptable return on the required investment, a lessor would consider the pattern of cash flows associated with the lease transaction. In some cases, the pattern of cash flows related to a leased asset will be significantly affected by the reduction or deferral of income taxes, by the receipts of grants and by the provision of finance by third parties as described in paragraph 21.

20. When income tax factors that affect the cash flows are predictable with reasonable certainty, they may be taken into consideration in accounting for income from the lease. In these cases, income recognition in respect of finance leases is sometimes based on a pattern reflecting a constant periodic return, not on the lessor's net investment outstanding but on the lessor's net cash investment outstanding, subject to the overriding consideration of prudence.

21. Certain finance lease transactions are structured in such a away that they involve at least three parties, the lessee, the lessor and one or more long-term creditors who provide part of the acquisition finance for the lessor and one or more long-term creditors who provide part of the acquisition finance for the leased asset usually without any general recourse to the lessor. These lease transactions are sometimes known as leveraged leases. In such cases, the lessor records his investment in the lease net of the non-recourse debt and the related finance costs to the third-party creditors and recognized finance income on the basis of the lessor's net cash investment outstanding in respect of the finance lease.

22. Since very different results can flow from the use of net investment and the use of net cash investment for allocation of income, the method used needs to be applied consistently to leases of the same financial character and disclosed.

**Finance Leasing by Manufacturers or Dealers**

23. Manufacturers or dealers often offer to customers the choice of either buying or leasing an asset. A finance lease of an asset by a manufacturer or dealer lessor gives rise to two types of income:

    a. The profit or loss equivalent to the profit or loss resulting from an outright sale of the asset being leased, at normal selling prices, reflecting any applicable volume or trade discounts; and

    b. The finance income over the lease term.

24. The sales revenue recorded at the inception of finance lease by a manufacturer or dealer lessor is the fair value of the asset, or, if lower, the sum of the present values of the minimum lease payments and the estimated unguaranteed residual value accruing to the lessor, computed at a commercial rate of interest. The cost of sale recognized at the inception of the lease is the cost, or carrying amount, if different, of the leased property. The difference between the sales revenue and the cost of sales is the selling profit, which is recognized in accordance with the policy normally followed by the enterprise for sales.

25. Manufacturer or dealer lessors sometimes quote artificially low rates of interest in order to attract customers. The use of such a rate would result in an excessive portion of the total income from the transaction being recognized at the time of sale.

26. Initial direct costs are usually charged to income at the inception of the lease because they are mainly related to earning the manufacturer's or dealer's selling profit.

***Operating Leases***

27. Under an operating lease, the risks and rewards incident to ownership of an asset remain with the lessor. Therefore, the asset is treated by the lessor as a depreciable asset and rentals receivable are included in the income over the lease term. A manufacturer or dealer lessor does not recognize any selling profit on entering into an operating lease because it is not the equivalent of a sale.

28. Costs, including depreciation, incurred in earning the rental income are charged to income. Rental income (excluding receipts for services provided such as insurance and maintenance) is normally recognized on a straight line basis over the lease term even if the receipts are not on such a basis, unless another systematic basis is more representative of the time pattern of the earnings process contained in the lease.

29. A leased asset is depreciated on a basis consistent with the lessor's normal depreciation policy for similar assets; the depreciable amount of the asset being allocated on a systematic basis to each accounting period during its useful life.

30. Initial direct cost incurred specifically to earn revenues from an operating lease are either deferred and allocated to income over the lease term in proportion to the recognition of rental income or are written off in the period in which they are incurred.

**Land and Buildings**

31. Leases of land and buildings are classified as operating or finance leases in the same way as leases of other assets. However, a characteristic of land is that it normally has an indefinite useful life, and if title is not expected to pass to the lessee by the end of the lease term, the lessee does not receive substantially all of the risks and rewards incidental to ownership. Such a lease is, therefore, properly classified as an operating lease. A premium paid for such a leasehold represents prepaid rental charges which are amortized over the lease-term.

32. Many buildings that are leased have a useful life that is expected to extend well beyond the end of the lease term. Moreover, long-term leases for buildings often contain provisions whereby rents are regularly adjusted upwards to market rates. If title is not expected to pass or if rents are regularly adjusted to market rates, the lessor retains a significant part of the risks and rewards incident to ownership and such leases are, therefore, normally classified as operating leases.

**Sale and Leaseback**

33. A sale and leaseback transaction involves the sale of an asset by the vendor and the leasing of the same asset back to the vendor. The rentals and the sale price are usually interdependent as they are negotiated as a package and need no represent fair values. The accounting treatment of a sale and leaseback transaction depends upon the type of lease involved.

34. If the leaseback is a finance lease, the transaction is a means whereby the lessor provides finance to the lessee, with the asset as security. For this reason, it is not appropriate to regard an excess of sales proceeds over the carrying amount as a realized profits. Such excess, if recognized, is deferred and amortized over the lease term.

35. If the leaseback is an operating lease, and the rentals and the sale price are established at fair value, there has, in effect, been a normal sale transaction and any profit or loss is normally recognized immediately.

36. If the leaseback is an operating lease and the sale price is below fair value any profit or loss is recognized immediately except that, if the loss is compensated by future rentals at below market price, it is deferred and amortized in proportion to the rental payments over the period for which the asset is expected to be used. If the sale price is above fair value, the excess over fair value is deferred and amortized over the period for which the asset is expected to be used.

37. For operating leases, if the fair value at the time of the transaction is less than the carrying amount, a loss equal to the amount of the difference between the carrying amount and fair value is recognized immediately. For finance leases, no such adjustment is necessary unless there has been a permanent impairment in value in which case, the carrying amount is reduced to recoverable amount in accordance with International Accounting Standard 16, Accounting for Property, Plant and Equipment.

**Disclosure**

***Disclosures in the Financial Statements of Lessees***

38. It is appropriate that the amount of assets used by the lessee that are subject of finance leases be separately identified in the financial statements. It is often useful to have this disclosure presented by each major class of asset. The aggregate amount of the related liabilities, is shown either as the total of the minimum lease payments which future finance charges being separately deducted or as the net present value of the liabilities disclosing in summary form the interest rate used as the discounting factors. It is not appropriate for the liabilities for leased assets to be presented in the financial statements as a deduction from the leased assets.

39. The rental expense under operating leases is sometimes disclosed for each period for which an income statement is presented. This is intended to indicate the measure of an enterprise's dependence on rented rather than owned assets.

40. International Accounting Standard 5, information to be disclosed in Financial statements, requires disclosure of repayment terms and interest rate for loans falling due in more than one year. For finance leases, it may be more convenient to disclose in summary form the amounts of future payments and the periods in which they will become due (for example, each of the next five years and each succeeding five year period). Similarly, in order to show an enterprise's commitments, it is appropriate to disclose in summary form the future rental payments under non-cancelable operating leases of more than one year and the periods in which they will become due (for example, each of the next five years and each succeeding five year period).

41. Certain other disclosures relevant to both finance and operating leases may also be appropriate. Examples of these are:

    a. The nature of any renewal options, purchase options or escalation clauses;

    b. Financial restrictions imposed by the lease agreement such as limitations on additional borrowing or further leasing;

    c. The nature of any continent rentals such as those based on usage or sale;

    d. The nature of any contingent liability in respect of costs expected at the end of the lease term.

***Disclosures in the Financial Statement of Lessors***

42. The lessor's gross investment in finance leases and the amount of unearned finance income are disclosed. As an indicator of growth it is often found useful to disclose also the gross investment less unearned income in view of the business added during the accounting period after deducting the relevant amounts for canceled leases. Disclosure is sometimes made of the lessor's general arrangements and of the future minimum lease payments to be received for specified future periods.

43. Assets held for operating leases are usually included as property, plant and equipment in the balance sheet. The amount of these leased assets at each balance sheet date, presented in each major class of asset, is often disclosed. Sometimes information is provided on the lessor's general leasing arrangements the amount of rental income from operating leases and the minimum future rentals on non-cancelable leases both in the aggregate and in specified future periods.

**International Accounting Standard 17**

***Accounting for Leases***

International Accounting Standard 17 comprises paragraphs 44 – 64 of this Statement. The standard should be read in the context of paragraphs 1-43 of this Statement and of the Preface to Statements of International Accounting Standards.

***Accounting for Leases in the Financial Statements of Lessees***

**Finance Leases**

44. A finance lease should be reflected in the balance sheet of a lessee by recording an asset and a liability at amounts equal at the inception of the lease to the fair value of the leased property, net of grants and tax credits receivable by lessor or, if lower, at the present value of the minimum lease payments. In calculating the present value of the minimum lease payments the discount factor is the interest rate implicit in the lease, if this is practicable to determine; if not, the lessee's incremental borrowing rate is used.

45. Rentals should be apportioned between the finance charge and the reduction of the outstanding liability. The finance charge should be allocated to periods during the lease term so as to produce a constant periodic rate of interest on the remaining balance of the liability for each period. Some form of approximation may be used.

46. A finance lease gives rise to a depreciation charge for the asset as well as a finance charge for each accounting period. The depreciation policy for leased assets should be consistent with that for depreciable assets which are owned, and the depreciation charged should be calculated on the basis set out in International Accounting Standard 4, Depreciation Accounting. If there is no reasonable certainty that the lessee will obtain ownership by the end of the lease term, the asset should be fully depreciated over the shorter of the lease term or its useful life.

**Operating Leases**

47. The charge to income under an operating lease should be the rental expense for the accounting period, recognized on a systematic basis that is representative of the time pattern of the user's benefit.

***Accounting for Leases in the Financial Statement of Lessors***

**Finance Leases**

48. An asset held under a finance lease should be recorded in the balance sheet not as property, plant and equipment but as a receivable at an amount equal to the net investment in the lease.

49. Subject to the consideration of prudence, the recognition of finance income should be based on a pattern reflecting a constant periodic rate of return on either the lessor's net investment outstanding the net cash investment outstanding in respect of the finance lease. The method used should be applied consistently to leases of a similar financial character.

50. Manufacturer or dealer lessors should include selling profit or loss in an income in accordance with the policy normally followed by the enterprise for outright sales. If artificially low rates of interest are quoted, selling profit should be restricted to that which would apply if a commercial rate of interest were charged. Initial direct costs should be charged to income at the inception of the lease.

**Operating Leases**

51. Assets held for operating leases should be recorded as property, plant and equipment in the balance sheet of lessors.

52. Rental income should be recognized on a straight line basis over the lease term, unless another systematic basis is more representative of the time pattern of the earnings process contained in the lease.

53. The depreciation of leased assets should be on a basis consistent with the lessor's normal depreciation policy for similar assets, and the depreciation charge should be calculated on the basis set out in International Accounting Standard 4, Depreciation Accounting.

***Accounting for Sale and Leaseback Transactions***

54. In a sale and leaseback transaction results in a finance lease, any excess of sales proceeds over the carrying amount should not be immediately recognized in income in the financial statements of a seller-lessee. If such an excess is recognized, it should be deferred and amortized over the lease term.

55. if a sale and leaseback transaction results in an operating leases, and it is clear that the transaction is established at fair value, any profit or loss should be recognized immediately except that, if the loss is compensated by future rentals at below market price, it should be deferred and amortized in proportion to the rental payments over the period for which the asset is expected to be used. If the sale price is above fair value, the excess over fair value should be deferred and amortized over the period for which the asset is expected to be used.

56. For operating leases, if the fair value at the time of a sale and leaseback transaction is less than the carrying amount of the asset, a loss equal to the amount of the difference between the carrying amount and fair value should be recognized immediately.

***Disclosures***

**Disclosures in the Financial Statements of Lessees**

57. Disclosure should be made of the amount of assets that are the subject of finance leases at each balance sheet date. Liabilities, related to these leased asset should be shown separately from other liabilities, differentiating between the current and long-term portions.

58. Commitments for minimum lease payments under finance leases and under-non-cancelable operating leases with a term of more than one year should be disclosed in summary form giving the amounts and periods in which the payments will become due.

59. Disclosure should be made of significant financing restrictions, renewal or purchase options, contingent rentals and other contingencies arising from leases.

**Disclosures in the Financial Statements of Lessors**

60. Disclosure should be made at each balance sheet date of the gross investment in leases reported as finance leases, and the related unearned finance income and unguaranteed residual values of leased assets.

61. Disclosure should be made on the basis used for allocating income so as to produce a constant periodic rate of return, indicating whether the return relate to the net investment outstanding or the net cash investment outstanding in the lease. If more than one basis is used, the bases should be disclosed.

62. When a significant part of the lessor's business comprises operating leases, the lessor should disclose the amount of assets by each major class of asset together with the related accumulated depreciation at each balance sheet date.

**Effective Date**

63. This International Accounting Standard becomes operative for financial statements covering periods beginning on or after 1 January, 1984, subject only to the transitional provisions set out in paragraph 64.

**Transitional Provisions for Finance Leases**

64. For a period of four years from the effective date of this Standard, transitional arrangements will apply whereby, whilst lessees and lessors are encouraged to apply the full provisions of the Standard, they may opt not to apply it in its entirety provided the following information is disclosed:

**By lessees:** either (a)
- i. The amounts of the assets and liabilities that would have been included in the balance sheet had the finance leases been accounted for in accordance with the requirements of the Standard, and
- ii. The effect on net income which would have resulted;

or (b)
- i. The amounts of rentals on such leases charged to income, and
- ii. Commitments for rentals on such leases payable in subsequent accounting periods.

**By lessors:** The methods used to recognize income under finance lease.

## Chapter XV

# Hire Purchase

**After reading this chapter, you will be conversant with:**

- Concept and Characteristics of Hire Purchase
- Mathematics of Hire Purchase
- Legal Aspects
- Accounting Aspects
- Framework for Financial Evaluation

## Introduction

Among the alternative asset-based financing plans offered by the finance companies, hire purchase is one of the popular plans. The market for hire purchase has been dominated by the road transport operators and hire purchase has been always associated with financing of commercial vehicles. But in the last few years hire purchase, as a means of financing equipments, has come into popular use. Given a choice between industrial hire purchase and equipment leasing, the question before the hirer (lessee) is: Which one should I choose? A similar question before the finance company (lessor) is: Which one is more profitable?

This chapter attempts to answer these questions. It also provides a discussion on the salient aspects of hire-purchase transactions from the legal, tax and accounting angles. In terms of organization, the chapter is divided into six parts:

- Concept and Characteristics.
- Mathematics of Hire Purchase.
- Legal Aspects.
- Tax Aspects.
- Accounting Aspects.
- Framework for Financial Evaluation.

## CONCEPT AND CHARACTERISTICS OF HIRE PURCHASE

A hire purchase can be defined as a contractual arrangement under which the owner lets his goods on hire to the hirer and offers an option to the hirer for purchasing the goods in accordance with the terms of the contract. An agreement which fulfills the following conditions is also a Hire Purchase Agreement – (i) the possession of goods is delivered by the owner thereof to a person on condition that such person pays the agreed amount in periodic installments; (ii) the property in such goods is to pass to such person on the payment on the last of such installments; and (iii) such person has the right to terminate the agreement at any time before the property so passes on.

So the two distinct features of a hire purchase transaction are (i) the option to purchase the goods at any time during the term of the agreement and the (ii) the right available to the hirer to terminate the agreement at any time before the payment of the last installment. Therefore from the hirer's angle, a hire purchase contract can be compared to a cancelable lease contract with a call (purchase) option.

The call option and the right of termination available with the hirer form the basis for distinguishing a hire purchase transaction from other asset-financing plans like installment sale and conditional sale where the buyer is committed to paying the full price.

A hire purchase differs from installment sale on one more count. In installment sale, the ownership of the asset is transferred to the buyer on payment of the first installment whereas in a hire purchase the ownership is transferred to the hirer only when he exercises the option to purchase or on payment of the last installment.

The salient features of a hire purchase transaction are therefore as follows:

i. The finance company (the counterpart of the lessor) purchases the equipment from the equipment supplier and lets it on hire to the hirer.

ii. The hirer is required to make a down payment of 20 to 25 percent of the equipment cost and repay the balance with interest in equated monthly installments spread over 36 to 48 months either in advance or in arrear.

    As an alternative to the down-payment plan, some finance companies offer a deposit-linked plan. Under this plan, the hirer is required to invest 20 to 25 percent of the equipment cost in the fixed deposits of the company. In return the hirer is provided with hundred percent finance which has to be

repaid with interest in equated monthly installments spread over 36 to 48 months. On payment of the last installment, the deposit with accumulated interest is returned to the hirer.

iii. The interest component of each hire purchase installment is calculated on the basis of a flat rate of interest. The rate of interest charged usually lies in the band of 13-15% p.a.

iv. During the currency of the contract (hire period), the hirer can opt for an early repayment and purchase the asset. The hirer, exercising this option, is required to pay the remaining amount of hire purchase installments (installments which have not fallen due) less an interest rebate. The interest rebate is calculated in different ways which are discussed in the following part.

v. Theoretically, the hirer can exercise the cancelable option and terminate the contract after giving due notice to the finance company. But in practice such terminations are few and far in between because the hirer loses the tax shields on capital allowances (like depreciation) by exercising this option.

## MATHEMATICS OF HIRE PURCHASE[1]

We said that the interest included in the hire purchase installments is calculated with reference to a flat rate of interest. We are also aware that interest charged on the basis of a flat rate overlooks the fact that the original amount of the loan is repaid in installments over the term of the loan.

### Calculation of Effective Rate

On the other hand, the effective rate of interest is applied to the declining balances of the original loan amount for determining the interest component of each installment. It, therefore, follows that for a given flat rate of interest, the equivalent effective rate of interest has to be higher. To determine the effective rate of interest, we can apply either the trial and error approach or use an approximation formula.

#### Illustration 1

Gabriel Finance offers a hire purchase plan for its corporate borrowers on the following terms:

- Rate of Interest : 13% flat
- Repayment Period : 3 years
- Frequency of Payment : Monthly in Arrear
- Down Payment : 20%

a. Calculate the effective rate of interest per annum or the Annual Percentage Rate (APR) using (i) the trial and error approach and (ii) the approximation formula.

b. Assume that the payments have to be made in advance. Calculate the APR using the approaches mentioned in (a).

#### Solution

a. We will work with an investment cost of $1,000

Amount of loan = 0.8 x $1,000 = $800

Total charge for credit = $800 x 0.13 x 3 = $312

Monthly installment = ($800 + $312)/36 = $30.89

i. Define i as the effective rate of interest per annum or the APR. The value of i can be obtained from the equation.

($30.89 x 12) x $PVIFA_{m\,(i,\,3)}$ = $800

1 The reader is advised to read the sections relating to the Flat and Effective Rates of Interest from Appendix I before proceeding further.

i.e., $\$370.68 \text{ x } \frac{i}{i^{(12)}} \text{ x PVIFA}_{(i, 3)} = \$800$

i.e., $\frac{i}{i^{(12)}} \text{ x PVIFA}_{(i, 3)} = 2.158$

From the tables, we can find that

At i = 0.24, LHS of the equation = 2.191

i = 0.26, LHS of the equation = 2.143

Interpolating in the range, we get i = 0.2538 or 25.38%

ii. As an alternative to the trial and error approach, we can employ the following approximation formula:

$$i = \frac{n}{n+1}.2F \quad (1)$$

Where,

n = total number of repayments, and

F = flat rate of interest per unit time.

Applying eq. (1) we get,

$$i = \frac{36}{37} \times 2 \times 0.13 = 0.253 \text{ or } 25.3\%$$

b. The value of i can be obtained from the equation

$(\$30.89 \text{ x } 12) \text{ x PVIF } \overline{A}_{m\ (i, 3)} = \$800$

i.e., $\frac{i}{d^{(12)}} \text{ x PVIFA}_{(i, 3)} = 2.158$

At i = 0.26, LHS of the equation = 2.185

i = 0.28, LHS of the equation = 2.141

Interpolation in the range yields i = 0.2723 or 27.23%

If payments are made in advance, we should use the following modified version of Eq. (1).

$$i_{app} = \frac{n}{n-1} 2F \quad (2)$$

Using Equation (2), we get,

$$i_{app} = \frac{36}{35} \times 2 \times 0.13 = 0.2674 \text{ or } 26.74\%$$

We find that a change in the profile of monthly payments from 'arrear' to 'advance' has increased the effective rate of interest by almost two percentage points.

The annual percentage rate of a conventional hire purchase plan involving a down payment can be calculated along the aforesaid lines. But in the case of deposit-linked hire purchase plans, the calculation of APR involves the following steps:

**Step 1:** Define the periodic cash flows over the repayment period.

**Step 2:** Equate the present value of the cash outflows to the present value of the cash inflows and solve for the unknown rate of interest (i).

The value of i reflects the APR.

**Illustration 2**

Coulter Financial Services offers a hire purchase plan under which the hirer is provided with hundred percent finance on the following terms:

- Rate of Interest : 13%
- Repayment Period : 3 Years
- Frequency of Payment : Monthly in Arrear

The hirer is required to invest 20% of the investment cost in the cumulative fixed deposit scheme of the company for a period of 3 years. The company offers a rate of interest of 15% p.a. compounded monthly.

a. Calculate the APR of the scheme.

b. Compare this scheme with the scheme offered by Gabriel Finance in illustration 1. Which one would you prefer? Why?

**Solution**

a. We will work with an investment cost of $1,000

The total charge for credit = $(1,000 x 0.13 x 3) = $390

Monthly installment $= \frac{1{,}390}{36} = \$38.61$

Amount of deposit at time '0' = 200

Accumulated value of the deposit after 3 years

$$= 200\left(1+\frac{0.15}{12}\right)^{36} = \$312.79$$

Define i as the effective rate of interest (APR) of the plan. To obtain the APR, we shall first define the net cash flows over the repayment period. (See below given Table).

**Monthly Cash Flows**

(Amount in $)

| Month (1) | Loan Amount (2) | Initial Deposit (3) | Installment Amount (4) | Acc. Value of Deposit (5) | Net Cash Flow (6) – (2) – (3) – (4) + (5) |
|---|---|---|---|---|---|
| 0 | 1000 | 200 | | | 800 |
| 1 | | | 38.61 | | (–) 38.61 |
| 2 | | | 38.61 | | (–) 38.61 |
| . | | | . | | . |
| . | | | . | | . |
| . | | | . | | . |
| 35 | | | 38.61 | | (–) 38.61 |
| 36 | | | 38.61 | 312.79 | 274.18 |

Setting the present value of the cash outflows equal to the present value of the cash inflows at rate of interest i, we get,

$$= 12 \text{ x } 38.61 \text{ x } PVIFA_{m\left(i,\frac{35}{12}\right)} = \$800 + \$274.18 \text{ x } PVIF_{(i,\,3)}$$

i.e., $\$463.32 \text{ x } \frac{i}{i^{(12)}} \text{ x } PVIFA_{(i,\,2.9167)} = \$800 + \$\,274.18 \text{ x } PVIF_{(i,\,3)}$

At i = 0.32, (LHS – RHS) of the equation = – 4.14

i = 0.30, (LHS – RHS) of the equation = 9.53

Interpolating in the range we get,

$$i = \left[ 0.3 + 0.02 \times \frac{9.53}{13.67} \right] = 0.3139 \text{ or } 31.39\%.$$

b. Comparing the Deposit Linked (DL) plan of Coulter Financial Services with the Down Payment (DP) plan of Gabriel Finance we find that, under both plans, the hirer parts with an amount of $200 at time 0. While under the down payment plan, the amount contributed by the hirer goes towards reducing the amount of debt finance, under the deposit-linked plan, the same amount is invested by the hirer in a fixed deposit scheme. Since the down payment made by the hirer under the DP plan goes towards reducing the amount of debt whose interest cost is more than what the hirer can earn by keeping the same amount in fixed deposit, we find that the effective rate of interest implied by the DP plan to be less than the effective rate of interest implied by the DL Plan.

## Calculation of Interest Rebate

Another aspect of the hire purchase mathematics relates to the calculation of the interest rebate for early repayment. From a purely economic angle, the finance company will try to allow the minimum interest rebate while the hirer will like to avail of the maximum possible rebate. While the true and fair interest rebate can be determined by applying the Effective Rate of Interest Method, the finance companies follow methods which favor the lender rather than the borrower. We will briefly discuss the mechanics of the Effective Rate of Interest Method and two other methods followed by the finance companies in practice.

## Effective Rate of Interest Method

Under the Effective Rate of Interest Method, the interest rebate is equal to the total amount of outstanding (but not due) installments less the discounted value of the outstanding installments as on the date of early repayment. Some finance companies refer to this method of granting interest rebate as the IRR Method.

### Illustration 3

Consider the data provided in Illustration 1. Immediately after paying the 24th monthly installment, the borrower wishes to repay the outstanding loan and purchase the equipment. Calculate the interest rebate according to the Effective Rate of Interest Method.

### Solution

Total amount of installments outstanding on the date of repayment

= $30.89 x 12 = $370.68 (A)

Discounted value of the outstanding installments as on the date of repayment

= $30.89 x $PVIFA_{m\,(25.38,\,1)}$

$$= \$30.89 \times 12 \times \frac{0.2538}{0.2283} \times PVIFA_{(25.38,\,1)} = \$30.89 \times 12 \times \frac{0.2538}{0.2283} \times 0.7976$$

= $328.68 (B)

Interest Rebate = (A) – (B) = $42

## "Rule of 78" Method

In practice, many finance companies use an alternative procedure known as the "Rule of 78" (also known as Sum of the Years Digits Method) to calculate the interest rebate on loans made on the basis of a flat rate of interest.

The interest rebate under this method (Refer Appendix I for a description of this method) is calculated as follows:

$$R = \frac{t(t+1)}{n(n+1)} \times D \qquad (3)$$

Where,

t = number of level installments that are not due and outstanding,
n = total number of level installments,
D = total charge for credit, and
R = interest rebate.

**Illustration 4**

Consider the data provided in Illustration 1 and the additional information provided in Illustration 3. Calculate the interest rebate according to the 'Rule of 78' Method.

**Solution**

Total charge for credit = \$(800 x 0.13 x 3) = \$312

Interest Rebate = $\frac{12 \times 13}{36 \times 37} \times 312$ = \$36.54

Comparing the answers obtained in Illustration 3 and 4, we find that the interest rebate offered under the 'Rule of 78' Method is less than what is offered under the Effective Rate of Interest Method and therefore the 'Rule of 78' works to the advantage of the lender. Can we generalize this result? The answer is "Yes". A formal mathematical proof is provided in Appendix I.

What is the implication to the hirer? Obviously, a lower interest rebate means that a higher effective rate of interest on the completed transaction. Put differently the hirer who opts for early repayment and gets an interest rebate calculated on the basis of 'Rule of 78' will pay an effective rate of interest higher than what was implied by the original transaction.

**Illustration 5**

Consider the data provided in Illustration 1 and the additional information provided in Illustration 3. Calculate the effective rate of interest implied by the completed transaction if the interest rebate is calculated according to,

a. Effective Rate of Interest Method, and
b. 'Rule of 78' Method.

**Solution**

a. Define $i_1$ as the effective rate of interest implied by the completed transaction. The value of $i_1$ can be obtained from the equation:

$\$30.89 \times 12 \times PVIFA_{m\,(i_1, 2)} + (\$370.68 - \$42) \times PVIF_{(i_1, 2)} = \$800$

i.e., $\$30.89 \times 12 \times \frac{i_1}{i_1^{(12)}} \times PVIFA_{(i_1, 2)} + \$328.68 \times PVIF_{(i1, 2)} = \$800$

At $i_1 = 25.38\%$, LHS of equation = \$800

Therefore, the rate of interest implied by the completed transaction is the same as the rate of interest implicit in the original transaction if interest rebate is calculated according to the Effective Rate of Interest Method.

b. If the interest rebate is calculated on the basis of 'Rule of 78', the value of $i_1$ can be obtained from the equation:

$\$30.89 \times 12 \times PVIFA_{m\,(i_1, 2)} + (\$370.68 - \$36.54) \times PVIF_{(i_1, 2)} = \$800$

i.e., $\$30.89 \times 12 \times \frac{i_1}{i_1^{(12)}} \times PVIFA_{(i1, 2)} + \$334.14 \times PVIF_{(i1, 2)} = \$800$

At $i_1$ = 26%, LHS of equation will be:

[$370.68 x 1.114 x 1.424] + [$334.14 x 0.630] = $799

Therefore, the effective rate of interest implicit in the completed transaction is about 26% – marginally higher than what is implied by the original transaction.

In practice, some finance companies use modified versions of the Rule of 78 which allow for a deferment period and thereby further reduce the interest rebate made available to the hirer. The general formula for calculating the interest rebate on the basis of the modified 'Rule of 78' is:

$$\text{Interest Rebate} = \frac{(t-a)(t-\alpha+1)}{n(n+1)} \times D; \text{ if } \alpha < t \leq n \qquad (4)$$

$$= 0; \text{ if } t \leq \alpha$$

Where,

$\alpha$ = deferment period and the other symbols are as defined in Eq. (3).

**Illustration 6**

Consider the data provided in Illustration 1. Assume that the hirer wants to repay the outstanding loan immediately after paying the 24th installment and the finance company calculates the interest rebate on the basis of the modified 'Rule of 78' which provides for a deferment period of 3 months.

a. Calculate the interest rebate granted to the hirer and the effective rate of interest on the completed transaction.

b. Assume that the borrower wants to repay the outstanding loan after paying the 33rd installment. Calculate the amount of interest rebate and the rate of interest on the completed transaction.

**Solution**

a. $$\text{Interest Rebate} = \frac{(12-3)(12-3+1)}{36 \times 37} \times 312 = \frac{9 \times 10}{36 \times 37} \times 312 = \$21.08$$

The reader can verify that the rate of interest implied by the completed transaction is 27% p.a.

b. Since the number of installments remaining unpaid is equal to the deferment period, interest rebate will be equal to zero. The effective rate of interest ($i_1$) on the completed transaction can be obtained from the equation

$\$30.89 \text{ x } 12 \text{ x } PVIFA_{m\,(i_1,\,2.75)} + \$92.67 \text{ x } PVIF_{(i_1,\,2.75)} = \$800$

The reader can verify that the rate of interest implied by the completed transaction is about 26% p.a.

## LEGAL ASPECTS

The salient legal aspects of hire purchase transactions are as follows:

i. Under a hire purchase contract the owner has the following obligations:
   a. He must have a title to the goods let on hire at the time of delivering the goods.
   b. He must ensure that the hirer has quiet possession of the goods and this quiet possession is not tampered with either by himself or by the lawful acts of third parties.
   c. He has to deliver possession of the goods to the hirer because the hiring does not commence until the goods have been delivered (The place of delivery can be the place of business of the owner).
   d. He has to ensure that the goods are of merchantable quality and that they are reasonably fit for the purpose for which they are to be used. The obligation relating to ensuring fitness arises only where the hirer has made known to the owner the particular purpose for which the goods are required.

e. Where goods are let by description, the owner is required to ensure that the goods actually let on hire answer the description. Similarly, in cases where the goods are let by reference to a sample, the owner has to ensure that the bulk corresponds with the sample and also afford an opportunity to the hirer to compare the bulk with the sample.

ii. Under a hire purchase contract, the hirer has the following implied obligations: (i) The hirer has to take reasonable care of the goods. (ii) The hirer cannot sell the goods or pledge them or use them for a purpose different from that stipulated in the contract during the currency of the contract. (iii) The hirer must pay the sums stated in the contract at the specified points of time and in the manner prescribed by the contract. The reader is required to note that in the absence of any express provision to the contrary, the time of payment is not regarded as the essence of the contract. Therefore, some occasional delays in payment over the hire period does not empower the owner to terminate the contract unless the default(s) can be linked to an intention on the part of the hirer to repudiate the contract.

iii. Apart from the implied obligations of the hirer, the hire purchase agreement expressly imposes certain obligations on the hirer: (a) He is required to arrange for a comprehensive insurance cover for the goods hired. The cover can be taken in the joint names of the owner and the hirer or in the name of the hirer bearing an endorsement recording the owner's interest in the goods. The hirer is required to pay the insurance premiums and do everything that is necessary to keep the insurance policy in force. (b) He is required to indemnify the owner against any loss or damage that results from his negligence. (c) He has to obtain all permits and consents necessary for the use of goods and not contravene any law or regulation that has a bearing on the usage of the asset. (d) He is required to bear all costs incurred in connection with maintaining the goods in serviceable condition.

iv. Usually, a hire purchase agreement provides for the owner's right for repossession of the goods upon breach of the hire purchase agreement by the hirer. The courts have held that in the absence of a specific enactment governing hire purchase transactions, the owner is entitled to repossess the goods through means specified in the hire purchase agreement and in the process he is entitled to use such physical force as may be necessary.

v. A hire purchase agreement usually provides for (i) the right of the hirer to determine (terminate) the hire purchase contract at any time before the final payment and (ii) the right of the hirer to purchase the goods at any time before the final payment. In the former case, the agreement provides for the mode of terminating the contract and in the latter case, it provides for the method to be followed for calculating the interest rebate.

vi. Since the owner, in a typical hire purchase transaction is a finance company which does not deal in the class of goods that are let on hire, usually the implied obligations of the owner stated in (iv) and (v) of (1) are not relevant. To prevent the possibility of the hirer invoking these implied conditions, an 'exclusion clause' is included in the hire purchase agreement which states that no liability can be attached to the owner if (i) the goods are not of merchantable quality; (ii) the goods are unfit for the particular purpose for which they are required; (iii) the goods fail to correspond with the description; (iv) the bulk does not correspond with the sample; and (v) there is a violation of the conditions, warranties or representations made by a dealer or a supplier (provided the dealer or the supplier is not acting as an agent of the owner).

vii. One of the legal issues relating to a tripartite hire purchase transaction is the legal relationship between the hirer and the dealer (or supplier). Clearly, there is no direct contractual relationship between the hirer and the dealer. The question is: can the hirer hold the dealer liable for the express warranties made by him? There is no legislative provision which says 'Yes'. But there are some

English case laws which state that when the hirer has entered into a hire purchase contract placing reliance on the promises or representations made by the dealer regarding the nature, quality or quantity of goods, it gives rise to a collateral contract between the hirer and the dealer and the hirer is entitled to claim damages for breach of warranty comprised in the collateral contract.

## ACCOUNTING ASPECTS

### In the Books of the Hirer

The accounting mechanics from the hirer's angle is as follows:

i. The cash purchase price of the asset is capitalized and the capital content of the hire purchase installments (the cash purchase price less the down payment) is recorded as a liability.

ii. Depreciation is charged on the cash purchase price of the asset in line with the depreciation policy pursued by the hirer with regard to other owned (similar) assets.

iii. The total charge for credit or the unmatured finance charge at the inception of the hire purchase transaction is allocated over the hire period using one of the following methods.
   - Effective Rate of Interest Method.
   - Sum-of-the-Years Digits (SOYD) Method.
   - Straight Line Method.

**Illustration 7**

Berry Petrochemicals has recently acquired equipments worth $300 million under the industrial hire purchase scheme offered by Bishop Financial Services. The salient features of the scheme are as follows:

- Rate of Interest : 13% (flat)
- Frequency of Payment : Monthly in Advance
- Number of Payments : 48
- Pattern of Payment : Equated
- Down Payment : 25%

Berry Petrochemicals follows the WDV method of depreciation and applies a rate of 30% p.a. on assets of a similar nature.

a. Compute the finance charge to be allocated to the accounting periods assuming that the hirer follows: (i) Effective Rate of Interest Method; (ii) SOYD Method; and (iii) Straight Line Method.

b. Show how the transaction will be referred in the financial statements for the first two years.

**Note:** Assume that the net salvage value of the equipments after four years is insignificant.

**Solution**

a. Total charge for credit = $225 mn x 0.13 x 4 = $117 mn
   Monthly installment = ($225 mn + $117 mn)/48 = $7.125 mn
   The effective rate of interest per annum (i) can be found from the equation:

$$\$7.125 \text{ mn} \times 12 \times \overline{PVIFA}_{12\,(i,\,4)} = \$225 \text{ mn}$$

$$\text{i.e., } \$7.125 \text{ mn} \times 12 \times \frac{i}{d^{(12)}} \times PVIFA_{(i,\,4)} = \$225 \text{ mn}$$

$$\text{i.e., } \frac{i}{d^{(12)}} \times PVIFA_{(i,\,4)} = 2.632$$

At i = 28%, LHS of equation = 2.568
i = 26%, LHS of equation = 2.635

Interpolating in the range (26%, 28%) we get i = 26.1%

The allocation of the total charge for credit based on the effective rate of interest method will be as follows:

**Allocation of Total Charge for Credit**

(Amount in $ mn)

| Year | Amount Outstanding at the Beginning | Interest Content | Capital Content | Installment |
|---|---|---|---|---|
| 1 | 225 | 47.08 | 38.42 | 85.5 |
| 2 | 186.58 | 37.05 | 48.45 | 85.5 |
| 3 | 138.13 | 24.40 | 61.10 | 85.5 |
| 4 | 77.03 | 8.45 | 77.03 | 85.48 |

**Note 1:**

The annual installment equivalent to the value of twelve monthly payments is determined as follows:

$7.125 mn x 12 x $\frac{i}{d^{(12)}}$ where, i = 0.261

= $7.125 mn x 12 x 1.1363 = $97.15 mn

**Note 2:**

i. The annual installment and interest content have been netted for an interest amount equal to $[97.15 – (7.125 x 12)] mn = $11.65 mn

ii. The allocation of the total charge for credit-based on the SOYD will be as follows:

**Allocation of Total Charge for Credit (SOYD Method)**

(Amount in $ mn)

| Year | Installment (= 7.125 x 12) | Finance Charge | Capital Content |
|---|---|---|---|
| 1 | 85.5 | $\frac{48+47+.....+37}{48+47+.....+1}\times 117 = 50.74$ | 34.76 |
| 2 | 85.5 | $\frac{36+35+.....+25}{48+47+.....+1}\times 117 = 36.41$ | 49.09 |
| 3 | 85.5 | $\frac{24+23+.....+13}{48+47+.....+1}\times 117 = 22.09$ | 63.41 |
| 4 | 85.5 | $\frac{12+11+.....+1}{48+47+.....+1}\times 117 = 7.76$ | 77.74 |

iii. The equated annual finance charge under the Straight Line Method

$= \frac{117}{4}$ = $29.25 mn

b. Presentation in Financial Statements

**Year 1:**

**Income Statement**

(Amount in $ mn)

| Expenses | | Income |
|---|---|---|
| Depreciation (300 x 0.3) | 90 | |
| Finance Charge | 47.08 | |

**Balance Sheet**

(Amount in $ mn)

| Liabilities | | Assets | |
|---|---|---|---|
| Secured Loans: | | Fixed Assets | |
| H.P Outstandings (falling due after one year) | 138.13 | Equipments on H.P. – Gross Block | 300 |
| Current Liabilities | | – Less: Acc. Dep. | 90 |
| H.P. Outstandings (falling due within one year) | 48.45 | – Net Block | 210 |

**Year 2:**

**Income Statement**

(Amount in $ mn)

| Expenses | | Income | |
|---|---|---|---|
| Depreciation (210 x 0.3) | 63 | | |
| Finance Charge | 37.05 | | |

**Balance Sheet**

(Amount in $ mn)

| Liabilities | | Assets | |
|---|---|---|---|
| Secured Loans: | | Fixed Assets: | |
| H.P Outstandings (falling due after one year) | 77.03 | Equipments on Hire Purchase | |
| Current Liabilities: | | Gross Block | 300 |
| H.P Outstandings (falling due within one year) | 61.1 | Less: Accumulated Depreciation | 153 |
| | | Net Block | 147 |

## In the Books of the Finance Company

In the books of the finance company, (owner) the accounting treatment will be as follows:

i. At the inception of the transaction, the finance company records the hire purchase installments receivable as a current asset (stock on hire) and the (unearned) finance income component of these installments as a current liability under the head "Unmatured Finance Charges".

ii. At the end of each accounting period, the finance company recognizes an appropriate part of the "Unmatured Finance Income" as current income of the period. The methods that are followed for allocating the unmatured finance income over the relevant accounting periods are the ones we are familiar with – Effective Rate of Interest Method, SOYD Method and Straight Line Method.

iii. At the end of each accounting period, the hire purchase price less the installments received is shown as a receivable (stock on hire) and the finance income component of these installments is shown as a current liability (Unmatured Finance Charges).

iv. The direct costs associated with setting up the transaction are either expensed immediately or allocated against the finance income over the hire period.

### Illustration 8

Consider the data provided in Illustration 7. Show how the transaction will be reflected in the financial statements of Bishop Financial Services for the first two years assuming that the company follows the Effective Rate of Interest Method for allocating the finance income. The initial direct costs of setting up the transaction is $2.4 mn.

### Solution

The effective rate of interest is 26.1% (Refer Illustration 7) and the allocation of the unearned finance income is as follows:

**Allocation of Unearned Finance Income**

(Amount in $ mn)

| Year | Amount Outstanding at the Beginning | Interest Content | Capital Content | Installment Amount |
|---|---|---|---|---|
| 1 | 225 | 47.08 | 38.42 | 85.5 |
| 2 | 186.58 | 37.05 | 48.45 | 85.5 |
| 3 | 138.13 | 24.40 | 61.10 | 85.5 |
| 4 | 77.03 | 8.45 | 77.03 | 85.48 |

### Presentation in Financial Statements

**Year 1:**

**Income Statement**

(Amount in $ mn)

| Expenses | | Income | |
|---|---|---|---|
| Direct Costs | 2.4 | Hire Finance Income | 47.08 |

**Balance Sheet**

(Amount in $ mn)

| Liabilities | | Assets | |
|---|---|---|---|
| Current Liabilities | | Current Assets | |
| Unmatured Finance Income | 69.90 | Stock-on-hire under Hire Purchase Agreements (at agreement values less amounts received) | 256.48 |

**Year 2:**

**Income Statement**

(Amount in $ mn)

| Expenses | Income | |
|---|---|---|
| | Hire Finance Income | 37.05 |

**Balance Sheet**

(Amount in $ mn)

| Liabilities | | Assets | |
|---|---|---|---|
| Current Liabilities | | Current Assets | |
| Unmatured Finance Income | 32.85 | Stock-on-hire under Hire Purchase Agreements (at agreement values less amounts received) | 170.98 |

## FRAMEWORK FOR FINANCIAL EVALUATION

In the first part of this section, we will evaluate the economics of a hire purchase transaction vis-á-vis a finance lease from the hirer's point of view. In the next part, we will discuss the same aspect from the stand point of the finance company.

## The Hirer's Angle

From the hirer's angle, the financial evaluation will involve the following steps:

**Step 1:** Define the Cost of Hire Purchase (COHP).

$$COHP = \text{Down Payment} + \text{P.V. (Hire Payments discounted at } K_D) + \text{Service Fee} - \text{P.V. (Depreciation Tax Shields discounted at } K_C) - \text{P.V. (Net Salvage Value discounted at } K_C) \quad (5)$$

**Step 2:** Define the Cost of Leasing (COL)

$$COL = \text{Lease Management Fee} + \text{P.V. (Lease Payments discounted at } K_D) - \text{P.V. (Tax Shields on Lease Management Fee and Payments discounted at } k_C) + \text{P.V. (Interest Tax Shields on Displaced Debt discounted at } K_C) + \text{P.V. (Differential Interest Tax Shields associated with H.P. discounted at } K_C) \quad (6)$$

**Step 3:** Compare COHP with COL

A. If COL exceeds COHP, Hire Purchase is to be preferred.

B. If COL is less than COHP, leasing is to be preferred.

Before we illustrate the aforesaid framework, let us clarify some points about the framework per se. The reader might recall that the framework we have employed here is somewhat similar to the lease evaluation model proposed by Bower. There are however some differences between the two. First, unlike the Bower's Model, we have specified the discount rate to be employed for discounting the tax shields. Second, the actual tax shields associated with hire purchase need not have a one-to-one correspondence with the interest tax shields on the displaced debt for the following three reasons:

a. The marginal cost of debt to the hirer (included in the computation of $K_C$) and the effective rate of interest implied by the hire purchase transaction need not be equal.

b. The lease term and the hire period (under the HP Plan) need not be identical.

c. The method employed for allocating the total charge for credit under hire purchase plan (for tax purposes) can be different from the method employed for allocating the unexpired finance charge under the lease plan.

Also the Bower Model assumes that leasing displaces an equal amount of debt whereas the hire purchase plan assumes a down payment.

$$\text{P.V. (Interest Tax Shields on Displaced Debt} \pm \text{P.V. (Differential Tax Shields associated with hire purchase)} = \text{P.V. (Interest Tax Shields on hire purchase)}$$

Therefore Equations 5 and 6 can be rewritten as:

$$COHP = \text{Down Payment} + \text{P.V. (Hire Payments)} + \text{Service Fee} - \text{P.V. (Tax Shields on charge for credit of Hire Payments \& Service Fee)} - \text{P.V. (Tax Shields on Depreciation)} - \text{P.V. (Net Salvage Value)} \quad (6A)$$

$$COL = \text{P.V. (Lease Payments)} + \text{Lease Management Fee} - \text{P.V. (Tax Shields on Lease Payments \& Lease Management Fee)} \quad (6B)$$

### Illustration 9

Russell Financial Services (RFS) offers both leasing and hire purchase plans to its corporate clientele. The salient features of these plans are as follows:

A. Lease Plan

| | | |
|---|---|---|
| Primary Period | : | 5 years |
| Lease Rate | : | $28 ptpm |
| Frequency of Payment | : | Monthly in Advance |

B. Hire Purchase Plan

| | | |
|---|---|---|
| Hire Period | : | 3 years |
| Rate of Interest | : | 16% flat |
| Frequency of Payment | : | Monthly in Advance |
| Down Payment | : | 20% |

Schiller Industrial Corporation (SIC) which is contemplating a capital expenditure of $360 mn on modernization and technology upgradation is evaluating the financial desirability of the two plans. Given the following information, which plan will you recommend? Why?

| | | | |
|---|---|---|---|
| A. | Tax Relevant Rate of Depreciation | : | 25% |
| B. | Marginal Rate of Tax | : | 46% |
| C. | Marginal Cost of Capital | : | 16% |
| D. | Marginal Cost of Debt | : | 20% |

Assume that SIC follows the SOYD method for spreading the total charge for credit under the hire purchase plan. The planning horizon is five years. The net salvage value of the plant and machinery after five years is expected to be $45 mn.

## Solution

Cost of Leasing (COL) can be determined as follows:

A. Present value of lease payments =$360mn x 0.028 x 12 x $\frac{i}{d^{(12)}}$ x $PVIFA_{(20,5)}$

Where, i = 0.2

= $360 mn x 0.028 x 12 x 1.105 x 2.991 = $399.78 mn

B. Present value of tax shield on lease payments @ 16%

= $360 mn x 0.028 x 12 x $PVIFA_{(16,5)}$ x 0.46 = $182.17 mn

C. Total charge for credit = $360 mn x 0.8 x 0.16 x 3 = $138.24 mn

The allocation of the total charge for credit based on the SOYD method is presented in the following table:

**Allocation of Total Charge for Credit**

| Year | SOYD Factor | Annual Credit Charge ($ in million) |
|---|---|---|
| 1 | $\frac{36+35+.....+25}{36+35+.....+1}=\frac{366}{666}$ | 75.97 |
| 2 | $\frac{24+23+.....+13}{36+35+.....+1}=\frac{222}{666}$ | 46.08 |
| 3 | $\frac{12+11+.....+1}{36+35+.....+1}=\frac{78}{666}$ | 16.19 |

D. Present Value of Tax Shield on Charge for Credit 16% p.a.

= [(75.97 x 0.862) + (46.08 x 0.743) + (16.19 x 0.641)] x 0.46

= $50.65 mn

E. Cost of Leasing = A – B = $217.61 mn

Cost of Hire Purchase (COHP) can be ascertained as follows:

F. Down Payment = $72 mn

G. Monthly Hire Purchase installment $= \frac{288 + (288 \times 0.16 \times 3)}{36}$ = \$11.84 mn

H. Present Value of Hire Purchase installments

$$= 11.84 \text{ x } 12 \text{ x } \frac{i}{d^{(12)}} \text{ x } PVIFA_{(20, 3)}$$

Where, i = 0.20

= \$330.64 mn

I. Present value of depreciation tax shields @16%

$= [90 \text{ x } PVIF_{(16,1)} + 67.5 \text{ x } PVIF_{(16,2)} + 50.62 \text{ x } PVIF_{(16,3)} + 37.97 \text{ x } PVIF_{(16,4)} + 28.48 \text{ x } PVIF_{(16,5)}] \text{ x } 0.46$

= \$89.56 mn

J. Present value of net salvage value = $45 \text{ x } PVIF_{(16, 5)}$ = \$21.42 mn

K. COHP = [F + H – D – I – J] = \$241.01 mn.

Since the Cost of Leasing (COL) is less than the Cost of Hire Purchase (COHP), the assets are to be acquired under the lease plan.

Since the net salvage value of the asset under consideration can sometimes significantly influence the economics of leasing versus hire purchase, it may be worthwhile spending sometime on the measures of asset valuation[7] and the mechanics involved in establishing the residual value.

For the purpose of valuing an asset, J C Bronbright defines 'value' as follows: "The value of a property (or asset) to its owner should be identical to the loss, direct and indirect, the owner might expect to suffer if he is deprived of the property (or asset)". He suggests that one of the following measures of value can reflect the "loss on deprivation".

a. *Replacement Cost* – the cost incurred to replace the asset.

b. *Realizable Value* – the value that can be realized on the disposal of the asset. It can be measured as the prevailing fair market value or in terms of the amount likely to be realized if the asset is sold under conditions adverse to the seller.

c. *Economic Value* – the value derived from the economic use of the asset. This in turn can be in terms of the value related to the earnings potential of the asset or in terms of the value of the asset for a purpose other than the purpose for which it is currently employed or in terms of its value to the firm concerned assuming that the firm is a "going concern".

Let us denote the three measures of value as RC, RV and EV respectively. We can think of the following relationships between these three measures:

A. RV > EV > RC
B. RV > RC > EV
C. EV > RC > RV
D. EV > RV > RC
E. RC > EV > RV
F. RC > RV > EV

The question is: Which is the most appropriate measure in each of the aforesaid situations?

Under situations (A) and (B), as the realization value exceeds economic value, it appears that the firm should disinvest and therefore RV is the most appropriate measure. But applying the criterion of "loss suffered on deprivation", it is clear

7 Prasanna Chandra, "Financial Management : Theory & Practice".

that the replacement cost is the appropriate measure under situation (A) because the firm has to incur this cost to restore the deprivation suffered by it. Under situation (B), the firm will not be keen on replacing the asset because RC exceeds EV. Hence, the appropriate measure will be the Economic Value.

Under situations (C) and (D), the loss suffered by the firm on deprivation is the replacement cost. Under situation (E), the firm will not be keen on replacing the deprived asset because replacement cost exceeds economic value. Hence, the loss suffered by the firm if it is deprived of the asset is the economic value of the asset. Under situation (F), the loss suffered by the firm on deprivation is the realization value.

In practice, we are unlikely to encounter situations portrayed by (A), (B) and (F) where realizable value exceeds economic value. Hence, we are left with just three situations (C), (D) and (E).

### Illustration 10

Consider the data provided in illustration 9. The finance manager of Schiller Industrial Corporation provides you with the following information for estimating the net salvage value of the plant and machinery five years hence:

a. There has been an escalation of 12% p.a., on an average with respect to the cost of capital equipment similar to the one under consideration.
b. The market value of similar capital equipments which have been used for a period of five years is about 15 percent of their original cost.
c. The projected incremental EBDIT (Earnings Before Depreciation, Interest and Taxes) attributable to the usage of the asset is about $90 million per annum.
d. The pre-tax cost of funds to the company is 24% p.a.
e. The search costs, commission and other transaction costs associated with the disposal of used capital equipments is about 20 percent of their fair market value.
f. The estimated economic life is seven years.

Based on the revised estimate of net salvage value, which plan will you recommend?

### Solution

A. To calculate the replacement cost of the asset five years hence, we will assume that the investment cost will continue to escalate at 10% p.a.

The replacement cost five years hence = $360 mn x $(1.12)^5$ x 0.15 =$95 mn.

B. The realizable value of the asset = 0.8 of the replacement cost = $76 mn.

C. Economic value of the asset = $90 mn x $PVIFA_{(24, 2)}$ = $131 mn.

Since EV > RC > RV, it is advantageous to use the asset rather than dispose it. However, the loss suffered by SIC on deprivation is not EV but RC. Therefore, the appropriate measure of net salvage value will be the replacement cost of $95 mn.

Factoring the estimated residual value of $95 mn in Illustration 7, we find that the cost of hire purchase is $217.21 mn. Since COHP and COL are more or less equal, SIC will be indifferent between the two asset-based financing plans. Put differently, it can choose either the lease or hire purchase option.

### The Finance Company's Angle

From the stand point of the finance company (the financial intermediary), the evaluation of a lease plan vis-á-vis a hire purchase plan boils down to a comparison of the NPVs of the two plans which can be defined as follows:

| | | |
|---|---|---|
| NPV (Lease Plan) | = | – Initial Investment – Initial Direct Costs + P.V (Lease Rentals) + Lease Management. Fee – P.V. (Tax Shields on Initial Direct Costs & Depreciation) + P.V (Net Salvage Value) – P.V. (Tax Liability on Lease Rentals and Lease Management Fee). (7) |

| | | |
|---|---|---|
| NPV (HP Plan) | = | – Loan Amount – Initial Direct Costs + Documentation & Service Fee + P.V. (HP installments) – P.V. (Interest Tax on Finance Income) – P.V. (Income Tax on Finance Income netted for Interest Tax) + P.V. (Tax Shield on Initial Direct Costs) – P.V. (Income Tax on Documentation & Service Fee) (8) |

The plan with the higher NPV is the plan which is financially more attractive.

**Illustration 11**

Consider the data provided in Illustration 9. RFS estimates its front end cost of structuring to be 0.5 percent of the amount financed. The marginal costs of debt and equity are 16% and 20% respectively. RFS wants to maintain a debt to equity ratio of 4:1 over the long haul. The marginal rate of tax (inclusive of surcharge) is 46%.

a. Which plan is financially more attractive to RFS?

b. Calculate the monthly lease rental to be charged by RFS if it wants the two financing plans to generate the same NPV?

Assume a residual value of 10% of the original cost after five years.

**Solution**

a. We will work with an investment cost of $1,000.

The marginal cost of capital of RFS is:

$$\left[\frac{4}{5}\times 0.16\times 0.54\right]+\left[\frac{1}{5}\times 0.20\right] = 0.1091 \text{ or } 10.91\%$$

The NPV of the lease plan is as follows:

A. Initial Investment = $1,000

B. Initial Direct Costs = 5

C. Present Value of Lease Receipt
$= \$1{,}000 \times 0.028 \times 12 \times PVIF\ \bar{A}_{m(10.91,5)}$
$= \$1{,}000 \times 0.028 \times 12 \times 1.058 \times 3.704 = \$1{,}316.73$

D. Present Value of Income Tax on Lease Receipts
$= \$1{,}000 \times 0.028 \times 12 \times PVIFA_{(10.91,\,5)} \times 0.46 = \$572.49$

E. Present Value of Depreciation Tax Shields
$= [\$250 \times PVIF_{(10.91,\,1)} + \$187.5 \times PVIF_{(10.91,2)}$
$+ \$140.62 \times PVIF_{(10.91,\,3)} + \$105.47 \times PVIF_{(10.91,\,4)}$
$+ \$79.1 \times PVIF_{(10.91,5)}] \times 0.46 = \$275.02$

F. Present Value of Tax Shield on Initial Direct Costs
$= \$5 \times PVIF_{(10.91,\,1)} \times 0.46 = \$2.07$

G. Present Value of Residual Value $= \$100 \times PVIF_{(10.91,\,5)} = \$59.6$
NPV (Lease Plan) $= [-A - B + C - D + E + F + G] = \$75.93$

The NPV of the hire purchase plan can be determined as follows:

H. Amount Financed = $800

I. Initial Direct Costs = $4

J. Monthly HP installment $= \dfrac{800+(800\times 0.16\times 3)}{36} = \$32.89$

K. Present value of monthly hire purchase installments
$= \$32.89 \times PVIF\bar{A}_{m\ (10.91,\,3)} = \$32.89 \times 12 \times 1.058 \times PVIFA_{(10.91,\,3)}$
$= \$32.89 \times 12 \times 1.058 \times 2.448 = \$1{,}022.21$

L. Unexpired Finance Income at Inception $= \$800 \times 0.16 \times 3 = \$384$

M. The allocation of the unexpired finance income based on the SOYD method will be as follows:

| Year | SOYD Factor | Annual Finance Income ($) |
|---|---|---|
| 1 | $\frac{36+35+....+25}{36+35+....+1}=\frac{366}{666}$ | 211.03 |
| 2 | $\frac{24+23+....+13}{36+35+....+1}=\frac{222}{666}$ | 128 |
| 3 | $\frac{12+11+....+1}{36+35+....+1}=\frac{78}{666}$ | 44.97 |

N. Interest Tax on the annual finance incomes will be as follows:

**Incidence of Interest Tax & Income Tax**

| Year | Gross Finance Income ($) | Interest Tax @3% ($) | Net Finance Income ($) | Income Tax @ 46% ($) |
|---|---|---|---|---|
| 1 | 211.03 | 6.33 | 204.7 | 94.16 |
| 2 | 128.00 | 3.84 | 124.16 | 57.11 |
| 3 | 44.97 | 1.35 | 43.62 | 20.07 |

O. Present value of interest tax on hire purchase – Related finance incomes @10.91%

= ($6.33 x 0.902) + ($3.84 x 0.813) + ($1.35 x 0.733) = $9.82

P. Present value of income tax on net finance income

= ($94.16 x 0.902) + ($57.11 x 0.813) + ($20.07 x 0.733) = $146.07

Q. Present value of tax shield on initial direct costs

= $4 x 0.902 x 0.46 = $1.66

R. NPV (Hire Purchase Plan) = [– H – J + K – O – P + Q] = $63.98

b. Define L as the monthly lease rental at which the two plans generate the same NPV. The value of L can be obtained from the equation:

– $1,000 – $5 + (12L x 1.058 x 3.704) – (12L x 3.704 x 0.46) + 275.02 + 2.07 + 59.6 = $63.98

i.e., 26.58 L = $732.29

or L = $27.55 ptpm

**Comments**

At the given lease rate of $28 ptpm payable monthly in advance, the lease investment is financially more attractive than the hire purchase investment. But the given lease rate is on the higher side of the prevailing range and the lease rental which produces an indifference point between the lease and hire purchase plans is also close to $28 ptpm. This implies that at the lower end of the prevailing range of $25-28 ptpm, the lease investment will be less attractive than the HP investment. Given the level of competition in this industry and the progressive reduction in interest rates which implies availability of cheaper alternative sources of long term finance, the finance companies may be forced to offer lease products at lower lease rates. Therefore, such companies are likely to tilt their product portfolios in favor of industrial hire purchase and consumer finance plans.

## SUMMARY

- Hire purchase can be defined as a contractual arrangement under which the owner lets his goods on hire to the hirer and offers an option to the hirer to purchase the goods in accordance with the terms of the contract. The two distinct features of a hire purchase transaction are: (i) the option is provided to the hirer to purchase the goods at any time during the term of the agreement; and (ii) the right available to the hirer to terminate the agreement at any time before the payment of the last installment. Hire purchase plans can be of two types: (i) Down Payment Plan and (ii) Deposit Linked Plan.

- A hire purchase transaction is reflected in the books of accounts of the hirer as follows: (a) The cash purchase price of the asset is capitalized and an amount equal to the cash purchase price less down payment is recorded as a liability. (b) Depreciation is charged on the cash purchase price in line with the depreciation policy pursued by the hirer for similar owned assets. (c) The total charge for credit is spread over the accounting periods (constituting the hire term) based on one of the following methods: (1) Effective Rate of Interest Method, (2) Sum of the Years Digits Method and (3) Straight Line Method.
- In the books of the finance company, the hire purchase installments receivable is shown as a current asset under the head 'Stock on Hire' and the (unearned) finance income component of these installments is shown as a current liability under the head 'Unmatured Finance Charges'. The unearned finance income is spread over the accounting periods using one of the methods listed above. The direct costs associated with the transaction is either expensed immediately or suitably amortized over the relevant accounting periods.

# Appendix I

## Rule of 78: A Mathematical Note

This appendix provides the algebraic proofs for:

a. Formulae for calculating interest rebate under the 'Rule of 78' method and the Actuarial (Effective Rate of Interest) Method; and

b. The proposition that the interest rebate calculated on the basis of the 'Rule of 78' is always less than the rebate calculated as per the Actuarial Method.

Interest Rebate under 'Rule of 78':

We will use the following symbols defined below:

D = total charge for credit

n = total number of installments

P = loan amount

t = number of installments remaining unpaid and not due on the date the borrower opts for early repayment.

We will assume that the hirer opts for early repayment after paying the (n – t) th installment.

Under the 'Rule of 78' method, the total charge for credit is divided into a number of 'units' as follows:

First installment is assumed to contain 'n' units of credit charge.

Second installment is as sumed to contain (n – 1) ……..units of credit charge.

Third installment is as sumed to contain (n – 2) ……..units of credit charge.

……..units of credit charge.

……..units of credit charge.

……..units of credit charge.

Last (n th) units of credit charge.

Clearly the number of units contained in the 'n' installments will be equal to:

$n + (n – 1) + ... + 1 = n (n + 1)/2$

(Being the sum of the first 'n' natural numbers)

But the total charge for credit = D

Therefore, $\frac{n(n+1)}{2}$ units of credit charge = D

or the monetary value of one unit of credit charge.

$$= \frac{D}{\left(n\frac{(n+1)}{2}\right)} = \frac{2D}{n(n+1)}$$

Given that the first installment contains n(= n – 1 + 1) units, second installment contains n – 1 (= n – 2 + 1) units, the r th installment will contain (n – r + 1) units of credit charge and the monetary value of the credit charge contained in this installment will be equal to:

$$\frac{2D}{n(n+1)}(n-r+1)$$

The amount of the r th installment is equal to $\frac{P+D}{n}$.

Therefore, the capital content of the r th installment will be equal to:

$$\frac{P+D}{n}-2D\frac{(n-r+1)}{n(n+1)} \quad \text{... (A)}$$

Given that the hirer has to just pay the first (n – t) installments, he has to pay 't' more installments; (n – t + 1) th installment, (n – t + 2) th installment, up to nth installment.

Using result (A) we can establish that the capital content of the (n – t + 1) n th installment is equal to:

$$\frac{P+D}{n}-2D\frac{\left[n-(n-t+1)+1\right]}{n\,(n+1)}=\frac{P+D}{n}-2D\ \frac{t}{n\,(n+1)} \quad \text{…(B)}$$

Capital content of the (n – t + 2) n th installment to:

$$==\frac{P+D}{n}-2D\ \frac{\left[n-(n-t+2)+1\right]}{n\,(n+1)}=\frac{P+D}{n}-2D\ \frac{(t-1)}{n\,(n+1)} \quad \text{.... (C)}$$

Proceeding along these lines, we can establish that Capital content of the (n – 1) th installment

$$\frac{P+D}{n}-2D.\ \frac{2}{n\,(n+1)} \quad \text{.... (D)}$$

Capital content of the nth installment

$$=\ \frac{P+D}{n}-2D.\ \frac{1}{n(n+1)} \quad \text{... (E)}$$

Summing up the capital content of the t th installments we get

$$\left[\frac{P+D}{n}-2D\frac{t}{n\,(n+1)}\right]+\left[\frac{P+D}{n}-2D\frac{t-1}{n\,(n+1)}\right]+.....$$

$$+\left[\frac{P+D}{n}-2D\frac{2}{n\,(n+1)}\right]+\left[\frac{P+D}{n}-2D\frac{1}{n\,(n+1)}\right]$$

$$=\left[\frac{P+D}{n}+.....t\text{ times}\right]-\frac{2D}{n\,(n+1)}[t+(t-1)+.....+2+1]$$

$$=t\frac{P+D}{n}-\frac{2D}{n\,(n+1)}\left[1+2+3+.....+(t-1)+t\right]$$

$$=t\frac{P+D}{n}-\frac{2D\ \ t\,(t+1)}{n\,(n+1)^2}$$

$$=t\frac{P+D}{n}-\frac{t(t+1)}{n\,(n+D)}.D$$

The interest rebate to be granted to the hirer

= Amount of the 't' th installments – Capital content of the 't' th installments

$$= t\frac{P+D}{n} - \left[ t\frac{P+D}{n} - \frac{t\,(t+1)}{n\,(n+1)}.D \right]$$

$$= \frac{t(t+1)}{n(n+1)}.D$$

Interest Rebate under the Actuarial Method

In this section, we will derive a mathematical expression for calculating the interest rebate under the Actuarial or the Effective Rate of Interest Method. We will define the following symbols for this purpose:

$$v^n = PVIF_{(i,\,n)} = \frac{1}{(1+i)}n$$

$$a_n = PVIFA_{(i,\,n)} = \frac{1}{i}\left[1 - \frac{1}{(1+i)^n}\right]$$

Where,

i = effective rate of interest per unit time (the unit time will be equal to the interval between any two successive installment dates).

From the definitions of $v^n$ and $a_n$, it follows that,

$$a_n = v + v^2 + \ldots\ldots + v^n \qquad \ldots (F)$$

We know that $\frac{P+D}{n}a_n = P$ .... (G)

On cross multiplication and simplification we get,

$$D \times a_n = P\,(n - a_n) \qquad \ldots (H)$$

Dividing Eqn. G by Eqn. H we get,

$$\frac{P+D}{nD} = \frac{1}{(n-a_n)}$$

or $$\frac{P+D}{n} = \frac{D}{(n-a_n)} \qquad \ldots (I)$$

Given that the hirer has to pay 't' more installments, the outstanding amount of the loan as on the date of early repayment will be

$$= \frac{P+D}{n}\ a_t$$

The total amount of the outstanding installments will be $= \frac{P+D}{n}t$

The interest rebate to be granted to the hirer will be

$$= \frac{P+D}{n}t - \frac{P+D}{n}a_t = \frac{P+D}{n}(t-a_t)$$

$$= \frac{t-a_t}{n-a_t}.D \quad \text{at rate } i \qquad \ldots (J)$$

[Substituting the value of $\frac{P+D}{n}$ from Eqn. I]

**Comparison of the Alternative Methods**

In this section we will mathematically prove that the interest under the Rule of 78 method is always less than the interest rebate under the Effective Rate of Interest Method. In terms of the notations employed in this appendix, we have to prove that,

$$\frac{t\,(t+1)}{n(n+1)} < \frac{t-a_t}{n-a_n}$$

We are aware that the sequence 1, $\nu, \nu^2, \nu^3$..... forms a decreasing sequence,

i.e., $1 < \nu < \nu^2 < \nu^3$.....

Therefore, for any p, q,

$$\frac{1+\nu+\nu^2+.....\nu^{p-1}}{p} > \frac{1+\nu+\nu^2+.....\nu^{q-1}}{q}$$

i.e., $\frac{(1-\nu^p)1-\nu}{p} > \frac{(1-\nu^q)1-\nu}{q}$ i.e., $\frac{1-\nu^p}{1-\nu^q} > \frac{p}{q}$

Based on this inequality, it is easy to establish that,

$$\frac{1-\nu}{1-\nu^{t+1}} > \frac{1}{t+1}$$

$$\frac{1-\nu^2}{1-\nu^{t+1}} > \frac{2}{t+1}$$

$$\frac{1-\nu^t}{1-\nu^{t+1}} > \frac{t}{t+1}$$

Summing up these inequalities we get,

$$\frac{t-(\nu+\nu^2+....+\nu^t)}{1-\nu^{t+1}} > \frac{(1+2+3+....+t)}{t+1} = \frac{t(t+1)}{2(t+1)} = \frac{t}{2}$$

i.e., $\frac{1-\nu^{t+1}}{t-(\nu+\nu^2+....+\nu^t)} < \frac{2}{t}$

or $1+\frac{1-\nu^{t+1}}{t-(\nu+\nu^2+.....+\nu^t)} < 1+\frac{2}{t}$

i.e., $\frac{t-(\nu+\nu^2+....+\nu^t)+(1-\nu^{t+1})}{t-(\nu+\nu^2+.....+\nu^t)} < \frac{t+2}{t}$

Multiplying and dividing RHS by (t + 1) we get,

i.e., $\frac{(t+1)-(\nu+\nu^2+....+\nu^{t+1})}{t-(\nu+\nu^2+.....+\nu^t)} < \frac{(t+1)(t+2)}{t(t+1)}$

Cross multiplying we get,

$$\frac{t-(\nu+\nu^2+.....+\nu^t)}{t(t+1)} > \frac{(t+1)-(\nu+\nu^2+....+\nu^{t+1})}{(t+1)(t+2)}$$

Based on this inequality it follows that for t < n

$$\frac{t-(\nu+\nu^2+.....+\nu^t)}{t(t+1)} > \frac{n-(\nu+\nu^2+.....+\nu^n)}{n(n+1)}$$

i.e., $\frac{t-(\nu+\nu^2+.....+\nu^t)}{n-(\nu+\nu^2+....+\nu^n)} > \frac{t(t+1)}{n(n+1)}$

i.e., $\frac{t-a_t}{n-a_n} > \frac{t(t+1)}{n(n+1)}$

or $\frac{t(t+1)}{n(n+1)} < \frac{t-a_t}{n-a_n}$

Which establishes the required result.

## Chapter XVI

# Bill Financing

**After reading this chapter, you will be conversant with:**

- Concept and Features of Bills of Exchange
- Types of Bills
- Steps in Bill Financing
- Benefits and Costs of Bill Financing
- Foreign Bills
- Rediscounting
- Commercial Bill Financing
- Bill Market Rates

## Introduction

Availability of finance in adequate quantity at the right time and at a reasonable cost helps to produce economic goods, either for immediate consumption or for capital formation and thus, fosters economic development. Finance is made available by the financial system of the country which comprises financial institutions, financial markets and financial instruments created from time to time.

Money markets comprising banks and other financial institutions and government cater to the short-term credit requirements of trade, commerce and industry in the form of cash credits, overdrafts and purchase/discounting of commercial bills.

## Monetary Policy and Bill Financing

The central bank of the country, as the central monetary authority of the financial system with its monetary policy, regulates the credit creation of the financial institutions and ensures the availability of credit to the extent that is appropriate to sustain the tempo of economic development. Monetary policy refers to the use of the official instruments under the control of the Central Bank to regulate the availability, cost and use of money and credit.

The bank rate or the discount rate is the traditional weapon of the Central Bank, which operates on the cost of credit indirectly by altering the cost at which the Central Bank's facilities are available to the commercial banks. The bank rate or the discount rate, is the standard rate at which the bank is prepared to buy or rediscount bills of exchange or other commercial paper eligible for purchases. The effect of a change in the discount rate is to make the cost of securing funds from the Central Bank cheaper or more expensive and thereby, bring about changes in the structure of market interest rates.

Out of the modes of financing, the banks and financial institutions rely mostly on cash credit form of lending. Up to the mid-eighties, the development of a bill market was not a reality despite its well-known advantages to lenders and borrowers alike. The various impediments in the way of developing a bill market were payment of stamp duty, difficulty in obtaining supplies of stamp paper, reluctance on the part of government departments and other large buyers to accept bills, predominance of the cash credit system of lending and the administrative work involved in handling documents of title of goods. However, in comparison with other methods of supplying credit, the method of bill finance is believed to impart flexibility to the money market and balance liquidity within the banking system. Considering its importance, the central bank has made efforts to enlarge the use of bills of exchange as an instrument of credit and develop the bill market.

## CONCEPT AND FEATURES OF BILLS OF EXCHANGE

The origin and concept of bills can be traced back to the 4th century BC, when the Greeks made use of bills. From times immemorial, banks and business houses have been using 'Hundi', the indigenous kind of bills of exchange. There were two kinds of hundis which were in vogue. Of the two, darshani hundi is similar to the bill of exchange of today with respect to the purpose for which it is drawn. Its place of origin may be quite different from the place of operation. In this context, muddati hundi is quite different. It is confined to local limits in which it is drawn.

Bills of Exchange can be defined as 'an instrument in writing containing an unconditional order, signed by the maker, directing a certain person to pay a certain sum of money only to, or to the order of, a certain person or to the bearer of the instrument'.

A bill attains the character of negotiability only if it contains the features of negotiable instruments.

The specific features of a negotiable instrument are as follows:

i. Parties to a bill of exchange – drawer, drawee and payee. The maker of the instrument who directs to pay is the drawer, the person to whom the direction is given is the drawee (when he accepts the bill, he becomes the acceptor) and the person to whom payment is to be made is the payee. In some cases the drawer and the payee may be the same person.

   The drawer or the payee who is in possession of the bill is called the holder. When the holder endorses it, he is called the endorser. The person to whom it is endorsed is called the endorsee. When in the bill or any endorsement thereon, the name of any person is given in addition to the drawee (to be resorted to in case of need), such person is called a drawee in case of need. Drawee in case of need can be resorted to only when the bill is dishonored by non-acceptance or non-payment.

ii. The instrument must be in writing.

iii. It must contain an order to pay and not a request.

iv. A bill of exchange cannot be drawn so as to be payable conditionally.

v. The sum payable must be certain.

vi. The person to whom the direction is given or to whom the payment is to be made must be certain.

vii. It must be signed by the drawer and presented to the drawee for acceptance.

viii. The order to pay should be in legal tender money.

ix. All other formalities like date, number, place and consideration are usually found in bills though not essential in law.

| **Box 1: Profit of Investors** | | |
|---|---|---|
| The Green Horn | Young people who have just begun their career. Very aggressive investors who look for capital appreciations as earning horizon is very high. | Equity shares (May tend towards speculative shares) |
| Double Engines | Young married couple, both earning, wanting to buildup their wealth very fast but slightly more cautious than the green horns. | About 70-80 percent in stock market related investments. |
| Home Nesters | Young/middle aged couple with primary objective of having their own house, also worried about saving for children's future. | A balanced blend of fixed income and stock market related instruments. |
| Arm Chairers | People on the verge of retirement/retired people who are risk averse and would like to have a permanent source of income for the rest of their lives. | Predominantly fixed income instruments like fixed deposits. |

*Source: Financial Services, ICFAI-Vision Series, Finance, page 269.*

## TYPES OF BILLS

There are various types of bills of exchange in vogue today in the market:

a. They can be classified as 'demand' and 'usance' bills on the basis of when they are due for payment, i.e. immediately, 'at sight' or 'on presentation', as in case of demand bill or at a specified later date (usually three months) as in case of a usance bill.

b. Bills again are classified as 'documentary' and 'clean' on the basis of whether they are accompanied by documents of title to goods such as railway receipts/lorry receipts/bills of lading, etc. or not accompanied by such documents.

c. Some bills are classified as 'D/A' and 'D/P' bills on the basis of whether the documents are deliverable just against acceptance (D/A) or deliverable only against payment (D/P), usually through a bank. A D/A bill, however, becomes a clean bill immediately after the delivery of the documents.

d. Bills are classified as 'Inland' and 'Foreign'. Inland bills must be drawn or made with in the country, and must be payable with in the country or drawn on any person resident with in the country. On the other hand, foreign bills are drawn outside the country and may be payable in and by a party outside the country or are drawn with in the country and made payable outside the country. A related classification of bills is export bills and import bills. While export bills are those drawn by exporters on any country outside own country, import bills are those drawn on importers in own country by exporters outside the country. The inland bills may be further divided into 'local' and 'outstation'.

e. Besides, there are what are known as 'Supply Bills', 'Government Supply Bills' and 'Accommodation Bills'. The supply bill arises out of supply of goods by manufacturing concerns and the government supply bills out of the supply of goods to the government or any of its departments. An accommodation bill is the one accepted by the drawee to accommodate the drawer without having received any consideration. Banks have to be cautious while extending credit against accommodation bills as they are prone to frauds.

## STEPS IN BILL FINANCING

How does a bill of exchange come into existence? Suppose, seller A sells goods to buyer B on credit but wants to have money immediately, so he draws a bill of a given maturity on B and sends the bill to B. A is known as the drawer of the bill and B, the debtor, acknowledges his responsibility for the payment of the amount on terms mentioned on the bill, by writing on the bill his "acceptance". When B has "accepted" the bill, he is known as the acceptor or drawee of the bill. A, in need of immediate money takes the "accepted bill" to a bank which exchanges it for ready money. This act of handling over the endorsed bill in exchange for ready money is called "discounting the bill of exchange". The difference between the money paid to the seller or creditor or drawer of the bill and the amount of the bill is called the "discount" which is calculated at a rate percent per annum on the maturity value. In this context, we can draw a distinction among the following categories of bills:

i. **Trader's Bill:** (a) Seller supplies goods and submits bill to the buyer for the value of goods supplied, (b) Buyer accepts the bill along with the goods supplied, (c) Seller receives the accepted bill from the buyer and discounts the bill with the seller's bank, and (d) Buyer makes the payment on due date.

ii. **Bills with Co-acceptance:** (a) Seller supplies goods and submits bill to the buyer for the value of goods supplied, (b) Buyer accepts the bill along with the goods supplied, (c) Buyer's bank also co-accepts the bill, and (d) Seller receives the bill accepted by the buyer and co-accepted by the buyer's bank and discounts with the seller's bank.

iii. **Bills Accompanied by Letter of Credit (LC):** (a) Seller supplies goods and submits bill to the buyer for the value of goods supplied, (b) Buyer accepts the bill along with the goods supplied, (c) Buyer's bank opens LCs in favor of the seller, and (d) Seller receives the accepted bill along with the LC opened by the buyer's bank in favor of the seller and discounts the same with the seller's bank.

iv. **Drawee Bills:** (a) Seller supplies goods and submits bill to the buyer for the value of goods supplied, (b) Buyer accepts the bill along with the goods supplied, and (c) Buyer's bank discounts the bill for the account of the buyer.

# BENEFITS AND COSTS OF BILL FINANCING

## Advantages of Bill Finance

Following are some of the major advantages to the banks providing bill finance:

- Self-liquidating mode of financing.
- Liquidity management of the banks becomes easier.
- Easy to monitor the genuineness of the transactions.
- Monitoring of borrowers' receivables becomes easy.
- Quality of receivables can be ascertained.
- Bank has recourse, both to the drawer as well as the drawee.
- Sale transactions are routed through the bank.
- Effective yield is higher since discount is deducted upfront.
- Bank earns fee-based income.
- Facility of rediscounting.
- Disciplined way of financing.

The usage of Discounting of Bills is not free of costs. The following are some of the costs associated with the discounting of bills:

1. **Operational and Procedural Constraints**

   Some of the major difficulties faced while drawing usance bills on customers are:

   - Wide geographical spread of the buyers.
   - Procedural delays on the part of both the drawer's and the drawee's banks.
   - Cumbersome documentation formalities.
   - The usual 90 days usance allowed by the banks is not sufficient.
   - Difficulties in submitting supporting documents.
   - Banks are hesitant to discount bills on new buyers.

2. **Difficulties Experienced in Getting Bills Accepted**

   The difficulties in getting usance bills accepted by the customers could be classified into the following categories:

   a. **Cost related:** About 60% of the respondents said high cost was an important aspect coming in the way of their customers accepting usance bills.

   b. **Reluctance on the part of the buyers:** It was mainly due to the reasons such as commitment to pay the amount on due date, buyers themselves not realizing their due in time, government departments/PSUs and some multinationals not accepting bills as a matter of policy, etc.

   c. **Formalities involved:** The areas identified were stamping, requirement of board resolution, attested specimen signature, etc.

   d. **Delays:** They were mainly due to operational and logistical difficulties in sending and receiving the documents and delays in acceptance of bills by buyers.

   e. **Other difficulties:** They covered areas such as:

      - Buyers' reluctance to accept bills for fear of problems in accounts reconciliation in case the materials were rejected.
      - Banks insist upon production of original documents (e-mail or fax not accepted).
      - Buyers' reluctance due to general slow down in the economy.

3. **Discounting of Bills with Banks Cumbersome**

   The procedure for discounting of bills with banks was cumbersome. Some specific areas mentioned are:

   - Stamping of documents.
   - Banks not accepting bills of smaller values.
   - Non-acceptance by government agencies (as buyers) of power of attorney given by the seller to his bank.
   - Procedural delays.
   - Delays in receiving information from collecting bank regarding acceptance/non-acceptance of bills.
   - Banks not discounting bills without verifying the credentials of the buyers.

4. **Dishonor of Bills**

   The major reasons for dishonor of bills are:

   - Buyers do not have funds.
   - Return of the materials.
   - Deliberate dishonor.
   - Adverse business conditions.

   A majority of the respondents (56%) felt that the existing laws were not sufficient to deal with the defaulters. The main reasons attributed by them were – legal delays and high costs. Naturally, many of the respondents did not feel adequately secured legally in case of default.

5. **Payment of Bills – Strengthening the Payment Mechanism**

   The existing bank mechanism for payment of bills is considered inadequate by most of the bankers. Some suggestions for strengthening the payment mechanism are:

   - Speedy remittance of collected amounts.
   - Introduction of electronic clearing and settlement mechanism between banks.

6. **Banking Practices**

   The following are some of the practices being followed by most of the banks:

   - Cash management services offered by some of the banks.
   - Use of courier services, telex, fax and e-mail for speedy clearance.

   Some measures to bring the cost of bill financing at par with cash credit facility:

   - Handling charges may be reduced.
   - Stamp duty may be levied only for bills having usance period of more than 180 days.
   - Rate of penal interest on overdue bills may be reduced.

## Alternatives to Bill Financing

In the light of inherent hesitation on the part of majority of trade and industry to subject themselves to bill discipline as well as the various costs and operational hassles entailed in bill financing, it is but necessary that a cost effective flexible alternative system to bill finance is evolved and introduced with appropriate legal framework to aid the creditor recover his dues with least hassles. With

open account sales becoming the preferred mode, there are practices obtaining in some developed countries where banks extend working capital finance on an ongoing basis against invoices raised by their clients' on their buyers. One such financing arrangement is factoring. A variant of factoring is Invoice Financing, which is also becoming popular in mature markets like the United Kingdom, Australia, etc. In Australia, the market for Invoice Financing is placed at $3.4 billion p.a. with an annual compounded growth rate of 20%.

Invoice financing, as a loan product, offers the financial benefits of factoring, while allowing the client company full control over the receivable management. This will be ideally suited to the Services Sector, where due to the inherent nature of its operations not involving movement of tangible goods, drawing of Bills of Exchange is not generally in vogue. Under Invoice Financing, there is also scope for flexibility as to the quantum of potential funding, as it is based on the level of debtors. Also, the credit line is based on the financial strength of the borrowing client's debtors as well as the borrower's own financial strength. Invoice Financing is provided under a 'non-disclosed' basis, which implies that the client's customers would not be aware of the arrangement, as long as there is no default. The client is bound to make payment on the due date, irrespective of the fact whether the debtor has paid or not. The bank has a right to disapprove debtors any invoice raised and make them ineligible for financing under this scheme for reasons of adverse credit report or their payment record. In many domestic industries, it is observed that sales do not occur on a uniform basis and fluctuate from month to month. Hence the present system of receivable financing through cash credit is found to be inappropriate, leading to intermittent over-financing or under-financing. Invoice Financing would be more appropriate to cater to such clientele segment, particularly Small and Medium Enterprises, start-up units with potential for rapidly expanding sales and units with unpredictable cash flows and a high proportion of receivables in their working capital cycle.

Invoice Financing if introduced in the domestic market, can cater to the needs particularly of small and medium enterprises, as one of the alternative loan products to bill financing. Legal recognition may be accorded to equitable assignment of debts financed by banks in favor of the lending banker, which can facilitate banks in recovering dues without any loss of time. The Group also recommends exemption of stamp duty on such equitable assignment, so that the cost of credit is not pushed up.

One of the major factors inhibiting Bill Financing is the lack of payment discipline amongst buyers. The growing acceptance of usage of post-dated cheques to assure the creditors of payment on due date should be noted. In order to improve payment discipline, it is suggested that wherever possible, clients can back up their credit availments from banks under facilities like bill discounting, invoice financing, etc., with post-dated cheques of their respective debtors.

Instruments like GIRO, a post-dated instrument in use in some markets like Indonesia or Debit Mandate issued in favor of the creditor by its debtor, all of which serve the ultimate objective of certainty of payment on the due date, can also be introduced. The client can deposit such cheques or the like instruments with the financing bank to facilitate recovery on due dates.

## FOREIGN BILLS

As already mentioned, export bills are those drawn on exporters in any country outside the domestic country and import bills are those drawn on importers with in the domestic country by exporters outside the domestic country.

An exporter of coffee from Brazil, for example, may desire payment as soon as he ships the coffee. The importer in the United States, on the other hand, may not wish to pay for the shipment until he receives, processes, and sells the coffee to his customers. Consequently, the exporter through his bank draws a draft on the

importer which, when signed by the latter, obligates him to pay the full proceeds at a certain date, say, 90 days hence. When this draft is ‘‘accepted,’’ i.e., guaranteed by a commercial bank, it becomes a document which can be sold immediately in the money market by the agent of the exporter. This enables the exporter to receive his money immediately minus, of course, the interest cost for the 90 days until the acceptance matures. The recipient of the coffee, on the other hand, need not cover the acceptance with funds until the 90 days have passed. The accepting bank, while incurring a contingent liability, always knows the credit standing of its customers and generally has shipping or other ownership documents pertaining to the commodity to safeguard its position. In addition, it receives a commission, generally one percent, for the use of its name and credit standing.

The above constitutes a satisfactory transaction for the accepting bank, since it obtains a fee merely by guaranteeing an instrument without necessarily having to part with any of its own resources. The ultimate lender, in fact, is the financial institution or business firm to which the acceptance is sold.

Banks play a major role in negotiating foreign bills across the borders, negotiating foreign exchange rates with unpredictable fluctuations, apart from financing the exporter customer for pre-shipment as well as post-shipment funds requirement.

Post-shipment finance is obligatory on the part of the exporter since as per exchange control regulations, all documents of export should be routed through an authorized foreign exchange dealer within one day of shipment of goods. Hence, the collection of bills (involving, not necessarily, any bank credit), purchase and discount of foreign bills and negotiations through LC involves banks and a pivotal role is being played by ‘bills’ in post-shipment credit. Here, the banker runs the risk of dealing only with the documents and not in goods. Even a minor detail unnoticed/ignored while scrutinizing the documents will entail heavy penalty.

## REDISCOUNTING

Banks can rediscount the bills, which were originally discounted with them by their corporate clients, with eligible financial institutions. The only prerequisite is that the originally discounted bills should have arisen out of genuine trade transactions. Banks compute the total amount of eligible bills discounted by them after deducting the rediscounts already booked on the bills and approach the approved rediscounting institutions to verify the availability of funds and the prevailing rate.

### Procedure of Rediscounting

Owing to the administrative problems faced by banks in following the rediscounting procedure of lodging and endorsing bills (to be rediscounted) with the rediscounting banks/institutions, the procedure has been simplified. Under the new system, banks are permitted to issue usance promissory notes in convenient lots and maturities on the strength of genuine trade bills discounted by them and to rediscount these derivative notes with rediscounting institutions.

## COMMERCIAL BILL FINANCING

Commercial Bill had its origin in Europe as an early medieval financial innovation evolved over centuries from a personal bond executed by debtor before a Court or a public notary to its present form of a commercial financial instrument, acquiring at various stages of evolution its distinctive characteristics of easy transferability and negotiability, and thus lending itself to discounting by banks to provide liquidity to the holder.

With the dominance of cash credit system in financing domestic trade and industry, bill finance, despite its inherent advantages from the point of view of the lending banker, has been relegated to play only a marginal role in the credit delivery system of the country. The need for the development of bill culture among borrowers was stressed by the various committees, appointed by the Government.

## Measures to Promote the Bill Market

The characteristic of easy transferability of the bill was the key feature of the instrument, which really paved the way for its development as a full-fledged commercial and financial instrument. It enabled the Bill to be assigned to a bank for the drawer to obtain cash immediately and thus, evolved the practice of discounting of bills. A further landmark in the evolution of Bill was its being accorded the characteristic of negotiability. With the development of organized financial markets over the years, and the spread of commercial banking, the role of the indigenous bankers in the financial system.

With the dominance of cash credit system in financing domestic trade and industry, bill finance despite its inherent advantages from the point of view of the lending bankers, has been relegated to play only a marginal role in the credit delivery system of the country. The need for the development of bill culture among borrowers was stressed by the various committees appointed by the Government, while examining certain aspects pertaining to bank lending/money market/banking sector reforms. The committees, which had gone into the different aspects of working capital financing, stressed the need to promote the Bill culture, so as to inculcate some measure of financial discipline among borrowers. The group was handicapped in its task of tracking the recommendations on bill financing by the various committees. Therefore, it felt that it would be useful to capture below the key recommendations of such committees to serve as a single point referencer.

Neither the incentives like the remission of stamp duty on usance bills, simplification of procedures for rediscounting and strengthening of the institutional infrastructure, nor the mandatory prescription of fixation of Drawee Bills limit under cash credit gave the desired impetus to the bill market. The recent measure of delinking PLR with reference to bill financing however, has made trade and industry evince interest in bill financing if sub-PLR interest were charged. In sum, bill financing has not so far taken off as the preferred mode of financing in any significant manner.

# BILL MARKET RATES

The cost of bill finance was determined earlier by the following rates:

a. Bank rate,

b. Bazaar bill rate, and

c. Commercial banks' bill finance rate.

The rate at which the central bank rediscounts eligible bills from commercial banks is known as bank rate. The bazaar bill rate was used by Shroffs in discounted bills of small trades. The commercial banks' bill finance rate is the minimum rate fixed by the central bank at which commercial banks can discount bills.

## Factors behind Underdevelopment

In spite of the encouraging official policy, the bill market has not developed in the country. The factors responsible for its underdevelopment are:

i. Borrowers have found other forms of financing such as cash credits, overdrafts, etc., cheaper to bill financing.

ii. Bill markets were mostly established for the purpose of financing foreign trade and the share of foreign trade in the national income has remained quite small.

iii. Participation of government in the economic activity has led to an increase in 'supply bills' but not that of genuine bills of exchange.

iv. Bill market has been dominated by indigenous bankers whose funds were limited.

Cumbersome procedures of discounting and rediscounting, the absence of specialized credit information agencies, the growth of competing money market instruments, etc., are among other factors which have impeded the growth of bill market.

## SUMMARY

- Monetary policy refers to the use of the official instruments under the control of the Central Bank of the country to regulate the availability, cost and use of money and credit.
- The bank standard rate is the rate at which the bank is prepared to buy or rediscount bills of exchange or other commercial paper eligible for purchases.
- A bill of exchange has been defined as an instrument in writing containing an unconditional order, signed by the maker, directing a certain person to pay a certain sum of money only to, or to the order of, a certain person or to the bearer of the instrument.
- The specific features of a negotiable instrument are: there must be three parties to the exchange, namely drawer, drawee and payee, the instrument must be in writing, containing an order (not a request) to a certain person to pay, unconditionally, a certain sum of tender legal money, duly signed by the drawer and presented to the drawee for acceptance. It should also have date, number, place and other considerations found in the bills of exchange.
- Bills of exchange can be classified as demand or usance bills, documentary or clean bills, D/A or D/P bills, inland or foreign bills, supply bills or government bills or accommodation bills.
- Bills can also be classified as traders bills, bills with co-acceptance, bills accompanied by letter of credit and drawee bills.
- Originally discounted bills can be rediscounted by banks for their corporate clients with financial institutions, as long as such bills arise out of genuine trade transactions.

## Chapter XVII

# Trade Financing

**After reading this chapter, you will be conversant with:**

- Export Credits
- Packing Credit
- Liquidation of Packing Credit
- Liquidation of Credit
- Source of Funds
- Importer-Exporter Code
- Trade Discount
- Part Drawings

# EXPORT CREDITS

Exports play a key role in the developing country's economy. In order to give a boost to this sector, various incentives are extended to exporters. Exports help in augmenting the country's foreign exchange reserves, besides generating employment. They also boost the economic activity in the country ultimately improving the standard of living. Given the fact that exports play a very crucial role in a developing economy any effort to promote them cannot ignore the vital aspect of finance. The exporter may need finance either at the pre-shipment stage or the post-shipment stage. Timely availability of credit at competitive rates enables an exporter to produce quality goods and ship them within the delivery schedules prescribed by the overseas buyer. It simply enhances the credibility of exporters and in the process increases their share in the market.

## Incentives Available to Exporters

The main incentives available to exporters are:

- Exporters are eligible to avail finance at concessional rates of interest.
- Banks being the main source of finance are encouraged to extend credit liberally to exporters, including granting lines of credit for 2-3 years at a stretch.
- It is mandatory for banks to extend a minimum of 12% of net bank credit to the export sector.
- To compensate banks for extending finance at lower rates of interest, export refinance facility is provided by the central bank.

Export finance can be categorized into pre-shipment finance and post-shipment finance depending at what stage of export activity, it is extended.

## Pre-shipment Finance

Pre-shipment finance is basically a short-term finance (inventory finance) extended to exporters in anticipation of export of goods. This finance enables exporters to procure raw materials, process and manufacture them, warehouses, ship the goods meant for export, etc.

Pre-shipment finance can be classified as:

a. Packing credit.

b. Advance against incentives receivable from Government.

c. Advance against cheques/drafts received as advance payment.

# PACKING CREDIT

It is a loan or advance granted to the exporter to purchase raw materials/process/ pack them based on the Letter of Credit (LC) opened in his favor by the importer. The LC/Confirmed order will be retained by the bank and will be endorsed accordingly indicating that packing credit has been availed of by the exporter.

## Eligibility

An exporter who wants to avail pre-shipment finance should obtain an importer-exporter code number from the DGFT. Packing credit is extended usually to exporters who have the export order/letter of credit in their name. It can also be extended where the contract is concluded by exchange of messages between the two parties, with the opening of LC to be followed later on. In such instances

banks may grant packing credit based on the communication, provided the following information is made available:

a. Name of the overseas buyer,

b. Particulars of goods to be exported,

c. Quantity and unit prices or value of order,

d. Dates of shipment,

e. Terms of sales and payments.

Packing credit is also extended to supporting manufacturers/suppliers of goods who do not have LCs in their own name but orders have been placed on them for goods to be supplied by an LC holder.

## Types of Finance

Packing credit is normally a funded advance. It takes the form of an unsecured/clean loan in the initial stages of disbursement of funds (i.e., when raw materials are yet to be procured). It is called extended packing credit. When the exporter gets a title to the goods it becomes a secured advance.

At times pre-shipment finance will be extended in a non-fund form, as when issuing LCs favoring the suppliers of raw materials, opening guarantees for credit purchases, etc.

## Quantum of Finance

Quantum of loan will not normally exceed FOB value of goods or domestic market value of goods, whichever is lower. However, there are certain exceptions. Packing credit may be granted up to the domestic cost of goods even if it is higher than the FOB value, provided the goods are covered by export incentives of the Government and availability of Export Production Finance Guarantee offered by ECGC. The excess of advance over FOB value should be adjusted from the cash incentives/duty draw back received.

## Margin Requirements

Pre-shipment finance being a need based finance, banks have the freedom to determine the margin that is to be brought in by the exporters.

Margins serve three important purposes:

a. To ensure that the exporter has a stake in the business.

b. To take care of erosion in the value of goods charged to the banker.

c. To ensure that bank finance is not extended to cover exporters' profit margin.

The percentage of margin will depend on the nature of the order, commodity, capability of the exporter, etc. Disbursement of funds under packing credit takes place in phases depending on the length of the operating cycle.

## Period of Finance

Packing credit can be extended at a concessional rate of interest for a maximum period of 180 days or for the operating cycle of the particular activity, whichever is lower. Banks may further extend this period to an additional 90 days, (i.e., 180 + 90 = 270 days). Alternately, banks may extend packing credit for a maximum period of 270 days from the beginning itself. If the packing credit is outstanding after the due date it is called overdue packing credit. Overdue packing credit is not eligible for concessional rate of interest.

It should be noted that concessional rates of interest will be applicable only if goods are exported within the time stipulated. This period has been fixed as 360 days from the date of availing the finance. In case goods are not exported within the stipulated period, banks are eligible to charge interest from the very first day of advance at a rate prescribed for 'Export credit not otherwise specified'.

## LIQUIDATION OF PACKING CREDIT

All packing credit advances should be liquidated from funds received by the exporter from either one or a combination of any of the following sources:

a. Proceeds of export bills negotiated, purchased, or discounted.

b. Proceeds of payments receivable from the Government in the form of duty drawback or a payment from the Market Development Fund (MDF) of the Government or from any other relevant source.

If a packing credit advance is not liquidated by export proceeds, that particular advance will not be entitled for concessional rate of interest.

### Running Account Facility

Banks are permitted to grant pre-shipment advances without insisting on immediate lodgement of letters of credit/firm export orders under "Running Account" facility subject to the following conditions:

i. The bank has to satisfy itself that there is a genuine need to grant the "Running Account" facility to the exporter.

ii. The track record of the exporter should be good.

iii. The borrower should be required to produce letters of credit/firm orders within a reasonable period of time from the date of grant of credit facility in the "Running Account" and if the commodity is covered under Selective Credit Control, banks should insist on production of letters of credit/firm orders, within a period of one month from the date of sanction.

### Substitution of Contracts

Where an exporter has availed packing credit, but the export order cannot be executed because of cancellation of the order or for any other reason beyond the exporter's control, then banks have the discretion to adjust the packing credit availed, from the proceeds of any other export order subject to the authorized dealer being satisfied about the commercial necessity of such a switch-over.

### Pre-shipment Credit in Foreign Currency (PCFC)

Exporters often complain about the high cost of capital vis-à-vis their competitors from other countries. Pre-shipment Credit in Foreign Currency (PCFC) is made available to cover both the domestic as well as imported inputs of the exported goods. It is available only for cash exports. It can also be extended in a convertible currency other than the currency in which the export order is invoiced. An exporter who avails of credit under this scheme will not be eligible to avail of post-shipment finance in domestic currency. He will necessarily have to avail of post-shipment finance in foreign currency only.

Source of funds for the banks under PCFC are the foreign currency balances available in Exchange Earners Foreign Currency (EEFC) Accounts, Resident Foreign Currency Accounts (RFC), Foreign Currency (Non-Resident) Accounts (Banks) Scheme, Escrow Accounts and Exporters Foreign Currency Accounts. In addition, banks may arrange for lines of credit from abroad for which they need not obtain prior approval of the central bank, if the rate of interest on such foreign currency borrowings does not exceed one percent over six months LIBOR. If banks avail of lines of credit, the liabilities arising out of utilization of the limits under the said facility would be exempted from the maintenance of cash reserve ratio and statutory liquidity ratio.

PCFC will initially be available for a maximum period of 180 days. Any extension beyond this time limit will be subject to the same terms and conditions as domestic currency packing credit and it will also have an additional interest cost of 2% above the rate for the initial period of 180 days prevailing at the time of

extension. Any extension beyond 270 days will be subject to the terms and conditions fixed by the authorized dealer concerned and if no export takes place within 360 days, the PCFC will be adjusted at the TT selling rate of the currency concerned. In such cases Authorized Dealers (ADs) can arrange to remit foreign exchange to repay the loan or line of credit raised abroad and interest thereon without prior permission of the Central Bank.

## LIQUIDATION OF CREDIT

The credit will be self-liquidating in nature and accordingly after the shipment of goods, the credit will be liquidated by submission of export documents for discounting/rediscounting under the rediscounting of export bills abroad scheme. PCFC should not be liquidated with foreign exchange acquired from other sources. The benefit such as credit by a part of export proceeds to EEFC account, etc. will accrue only after realization of the export proceeds or when the resultant export bills are rediscounted 'without recourse' basis and not at the stage of conversion of pre-shipment credit to post-shipment credit.

In case of cancelation of export order or where the export takes place after 360 days, the PCFC may be liquidated by selling equivalent amount of foreign exchange (principal plus interest) at the TT selling rate prevailing on the date of liquidation. In such cases, interest will be payable on the domestic currency equivalent of the principal amount at the rate of "Export credit not otherwise specified" plus a penal rate of 2 percent from the date of advance after adjustment of interest of PCFC already recovered. Banks may extend subsequently PCFC to such exporters only after ensuring that the earlier cancelation of PCFC was due to genuine reasons and not for speculative purposes.

### Advance against Duty Drawback

Pre-shipment finance can also be extended against duty drawback entitlements provisionally certified by the customs. The loans so extended will be adjusted when the customs make the final assessment and refund the duties. Duty drawback loans are normally granted by banks at the post-shipment stage for a period not exceeding 90 days at lower interest rate as specified.

### Role of Customs and C&F Agents

Freight Forwarders Act on behalf of exporters and importers in arranging services such as loading and unloading of goods, obtaining payment on behalf of customers, booking of space, and customs clearance for air cargo, sea cargo, land transportation, rail freight, custom agency services, multimodalism, door-to-door pick-up and delivery services, etc. Their earnings consist of commissions paid for their services.

Before proceeding to discuss the post-shipment finance, we shall, in brief, discuss the customs formalities to be followed by exporters for clearance of goods to be exported.

### Post-shipment Finance

Post-shipment finance is defined as "any loan or advance granted or any other credit provided by an institution to an exporter from the domestic country from the date of extending the credit after shipment of the goods to the date of realization of the export proceeds". It is basically meant to finance export sale receivables of the exporter. Post-shipment finance can be availed on submission of commercial documents evidencing export to the authorized dealer. The exporter is required to submit the documents to the bank within 21 days from the date of shipment of goods. The documents to be submitted include all shipping documents and an extra copy of invoice, relating to any export declaration form endorsed by Customs/Postal authorities.

Post-shipment finance can be classified as under:

- Negotiation/Payment/Acceptance of export documents under letter of credit.
- Purchase/discount of export documents under confirmed orders/export contracts, etc.
- Advances against export bills sent on collection basis.
- Advances against exports on consignment basis.
- Advances against undrawn balance on exports.
- Advances against receivables from the Government.
- Advances against retention money relating to exports.
- Advances against approved deemed exports.

## Eligibility for Post-shipment Finance

Post-shipment finance is extended to the actual exporter or to an exporter in whose names the export documents are transferred. In case of deemed exports, finance is extended to the deemed exporters. In case of cash exports, exporters should submit GR/PP/VP/SOFTEX forms, as applicable along with the shipping documents for negotiation.

## Quantum

Post-shipment finance can be extended up to 100% of the invoice value of the goods. However, banks are free to stipulate margin requirements as per their lending norms.

## Period of Finance and Interest Rates Applicable

Post-shipment finance may be availed either in the domestic currency or by using the rediscounting of export bills abroad scheme.

Even though post-shipment finance is a working capital finance, it may be offered on short-term basis or on a long-term basis depending upon the payment terms offered by the exporter to the overseas buyer.

The rate of interest depends on the nature of the bills, i.e. whether it is a demand bill or usance bill. A demand bill or a sight bill is one which is payable immediately on presentation. In case of a usance bill, the terms of payment are specified on the bill. Under this arrangement the importer is allowed a grace period for payment of the bill. Export finance availed against sight bills will be charged lower rates of interest for a maximum period of the Normal Transit Period (NTP) stipulated for the concerned bill as per FEDAI rules. FEDAI has fixed different transit periods for export bills drawn on different countries. The export bill (Demand) should normally be realized within that period. The transit period so fixed by FEDAI is known as 'Normal Transit Period' and mainly depends on geographical location of a particular country. Concessional rates of interest will be charged by banks up to the actual date of realization of export proceeds or NTP stipulated for the bill, whichever is earlier. Where the sight bill is not paid on or before the normal transit period, it will be considered as an overdue bill. The rate of interest charged for the overdue period, i.e. from the due date to 180 days from the date of shipment will be "Export credit not otherwise specified". For the period beyond 180 days from the date of shipment, higher rate of interest as given in the interest rate directive will be charged.

In case of usance bills, concessional rate of interest is applicable up to the notional due date. However, the maximum period for which lower rates are charged cannot exceed 90 days. While determining the notional due date of a usance bill, three components have to be taken into consideration:

1. Normal transit period as fixed by FEDAI.
2. Usance period of the bill.
3. Grace period if applicable in the country on which the bill is drawn.

Where an export bill has a usance period of more than 90 days, such a bill will not be eligible for concessional rates of interest. In this situation, banks are free to determine the rate of interest on such credit.

Where an export sight bill denominated in foreign currency purchased/discounted negotiated is not paid within 30 days after normal transit period and 30 days after notional due date in the case of usance bills, the foreign currency amount has to be reversed from export bills. The unrealized foreign currency amount will be crystallized by the bank at the prevailing TT selling rate by effecting a notional sale. The rupee equivalent amount so converted should be shown in the advances portfolio of the bank under the head "Advances against overdue export bills realizable" account. When the bills are actually realized, purchase should be reported in respective R-returns under the head "Purchases relating to reversed export bills".

### Rediscounting of Export Bills Abroad

It serves as an additional window for early realization of export proceeds. Under this scheme, authorized dealers and exporters can access the overseas market to rediscount export bills. Authorized dealers can have the eligible export bills in their portfolio for rediscounting them abroad. Exporters also have been permitted to discount directly their export bills subject to:

a. Being routed through the branch of an authorized dealer designated for the purpose.

b. Being routed through a designated bank/authorized dealer from whom the packing credit facility has been availed of. In case, these are routed through any other bank/authorized dealer, the latter will first arrange to adjust the amount outstanding under the packing credit with the concerned bank out of the proceeds of the rediscounted bills.

## SOURCE OF FUNDS

Authorized dealers can utilize the foreign exchange resources available with them in Exchange Earners Foreign Currency Accounts (EEFC), Resident Foreign Currency Accounts (RFC), Foreign Currency (Non-Resident) Accounts (Banks) Scheme and Escrow Accounts to discount usance bills and retain them in their portfolio without resorting to rediscounting. In the case of demand bills these may have to be routed through the existing post-shipment credit facility.

For rediscounting of bills, authorized dealers may, wherever necessary, access the local market, which will enable the country to save foreign exchange to the extent of the cost of rediscounting.

It is comparatively easier to have a facility against bills portfolio (covering all eligible bills) than to have a rediscounting facility abroad on bill by bill basis, as various rediscounting agencies may require detailed information relating to the underlying transactions, such as names of exporters and importers, commodities exported, letter of credit details, etc.

Authorized dealers can therefore arrange a "Bankers Acceptance Facility" (BAF). Each Authorized dealer can have his own BAF limits fixed with an overseas bank or a rediscounting agency or an arrangement with any other agency such as a factoring agency.

Under the scheme, rediscounting is available in any convertible currency.

### Eligibility Criteria

Export bills up to a usance period of 180 days from the date of shipment including normal transit period and grace period will be covered under this scheme.

## Spread

Where the rate of interest on rediscounting does not exceed one percent over the six months LIBOR in case of rediscounting of bills with recourse basis and not more than 1.5 percent in case of bills without recourse basis.

Where the rediscounting facility is arranged by the exporter himself, rate of remuneration for the bank will be decided between the bank and the exporter.

## Refinance

Banks will not be eligible for refinance against bills discounted/rediscounted under this scheme and hence the bills discounted/rediscounted in foreign currency should be shown separately from the export credit figures reported for purposes of drawing export credit refinance.

# IMPORTER-EXPORTER CODE

Every person/firm/company engaged in the business of exports has to obtain an Importer-Exporter Code Number from the DGFT. Export declaration forms submitted should bear this number. Export forms which do not bear the importer-exporter code number will not be entertained by Customs/Post Office/Department of Electronics.

## Methods of Repatriation of Export Proceeds

i. Export proceeds should be received through the medium of an authorized dealer. Where the exporter has received payment directly in the form of bank draft, pay order, banker's cheque, personal cheque, etc. the authorized dealer will handle export documents only if the exporter's track record is good. The authorized dealer should also be convinced that the instrument represents payment for exports.

ii. Proceeds of goods sold to overseas buyers on their visits to the domestic country may be received by the exporter either by reimbursement against charge slips signed by the International Credit Card (ICC) holders (overseas buyers) or as instantaneous credit to the exporter's bank account in domestic country. Authorized dealers will handle export documents even in such cases. Form GR (duplicate) will be released by the authorized dealers on receipt of funds in their Nostro account or on production of a certificate by the exporter from the Credit Card Servicing bank to the effect that it has received the equivalent amount in foreign exchange, if the authorized dealer concerned is not the credit card servicing bank.

iii. Funds held in the Foreign Currency (Non-resident) account and Non-resident (External) Account may also be utilized for payment of export proceeds.

iv. Export proceeds may also be paid by foreign currency notes/foreign currency traveler cheques by the buyer on his visit to the country.

## Shut Out Shipments and Short Shipments

Short shipment in case of shipment covered by a GR form that is filed with the customs should be intimated to the customs in the prescribed form and according to the prescribed manner. Where there is a delay in obtaining certified short shipment notice from the customs, the exporter should give an undertaking to the authorized dealer that he has filed the notice with the customs and will submit it on receipt of the same. The short shipment notice along with the duplicate copy of the GR form will be sent to the Central Bank.

In a situation where the shipment is totally shut out and reshipment of goods is delayed, the exporter is required to give notice in duplicate to the customs in the form and manner prescribed. Unused duplicate copy of the GR form and the shipping bill should be attached to the form in which notice is given. After verification, the copy of the notice will be certified as correct and will be forwarded to the Central Bank along with the unused duplicate copy of the GR form. The original GR received from the customs will be canceled and in case reshipment of goods takes place, a fresh set of GR forms should be completed.

## Shipments Lost in Transit

Where shipments in respect of which payments are not yet received are lost in transit, the AD will have to ensure that the insurance claim is made as soon as possible. The duplicate copy of the export declaration form will have to be submitted to the Central bank giving details like:

- Amount for which shipment was insured,
- Name and address of the insurance company, and
- Place where claim is payable.

In case the claim is payable abroad, the AD should first arrange to collect the amount through the medium of his overseas branch/correspondent. The duplicate copy of Export Declaration form will be submitted to the Central bank only after the amount is collected with their authentication of receipt of claim on the reverse of the duplicate copy.

# TRADE DISCOUNT

Any trade discount given by the exporter will have to be declared on the GR form at the time of shipment and accepted by customs. Only then will the documentary bill in respect of exports by sea or air which fall short of the value declared on GR forms on account of trade discount be accepted by authorized dealers. Deductions in case of trade discount given for exports by post if declared on PP forms will not be verified by postal authorities. ADs will accept deductions towards trade discount in such cases, provided the discount declared is in conformity with the normal level of discount usually offered in that particular line of export trade.

## Advance Payment Against Exports

1. Exporters are permitted to receive advance payments from the overseas buyers provided,
   i. The goods are shipped within one year from receipt of advance payment,
   ii. The rate of interest payable does not exceed LIBOR + 100 basis points, and
   iii. The shipments are monitored by the AD through whom advance payment is received.

   In the event of the exporter's inability to make the shipment partly or fully, within one year from the date of receipt of advance payment, no remittance towards refund of unutilized portion of advance payment or towards payment of interest, shall be made after the expiry of the said period of one year, without the prior approval of the Central Bank.
2. Notwithstanding anything contained in clause (i) of sub-regulation (1) where the export agreement provides for shipment of goods extending beyond one year from the date of receipt of advance payment, the exporter shall require the prior approval of the Central bank.

## PART DRAWINGS

In certain lines of trade, it is customary for exporters not to draw bills for the full invoice value, but to leave a certain part undrawn. In such cases, ADs will accept part drawings provided,

a. the undrawn balance is in conformity with the normal level of balance in that particular line of trade, subject to a maximum of 10 percent of the export value, and

b. the exporter gives a declaration that the balance proceeds will be surrendered to the AD within the prescribed period for realization. The undertaking will have to be given on the duplicate copy of the GR/PP form.

### Despatch of Shipping Documents

Shipping documents received from the exporter should be despatched to the overseas branch/correspondents of the ADs as quickly as possible. In case of exports to neighboring countries, it should be ensured that documents reach the buyer before the steamer discharges the cargo at the port of destination. To make this possible, exporters should prepare the shipping documents as early as possible and submit the same to the ADs at the earliest.

### Reduction in Value

In case the exporter wants to reduce the amount after the bills are negotiated/sent for collection, he is first required to make an application to such bank giving full details of the shipment, an attested copy of the invoice and documentary evidence in support of the reduction sought for. However, approval will be granted provided:

a. Reduction in amount does not exceed 10% of invoice value,

b. The export does not relate to gold or silver or articles made out of cut and polished diamonds. It does not relate to commodities subject to floor price stipulations and the exporter is not on the caution list, and

c. The proportionate export incentive availed of is surrendered.

Exporters who are in the field of exports for more than three years may be allowed to reduce the amount without any ceiling provided their track record is satisfactory, i.e. export outstandings should not exceed 5% of the average annual export realization during the preceding three calendar years.

In this context, the exporter should submit a declaration certified either by his auditors or a CA indicating the total export realization during each of the preceding three calendar years and the export bills outstanding beyond the prescribed period for realization of export proceeds and average outstandings in absolute and percentage terms.

To determine the percentage of outstanding export bills to average export realizations during the preceding three calendar years, an exporter is permitted to ignore outstanding export bills in respect of exports made to countries facing externalization problems, provided the payments have been made by the buyers in the local currency.

### Write Off of Unrealized Export Bills

In case the outstanding export dues are not realized in spite of the efforts of the exporter, he may request the concerned AD to write off the unrealized portion. Appropriate supporting documentary evidence should be submitted in proof of the same.

The request may be agreed provided,

a. The amount has been outstanding for 360 days or more.

b. The aggregate amount of write off during a calendar year should not exceed 10% of the total export proceeds realized during the previous calendar year.

c. The exporter submits evidence to prove that he has made all efforts to realize the dues.

d. Write off will also be permitted in case,

   i. of insolvency of the overseas buyer and a certificate has been obtained to that effect;

   ii. it is not possible to trace the buyer over a long period of time and supporting documentary evidence is provided to that effect;

   iii. the goods exported have either been auctioned or destroyed by the authorities in the importing country and a certificate to that effect has been issued;

   iv. the unrealized amount represents the balance due in a case settled through the intervention of the Embassy, Foreign Chamber of Commerce or similar organization;

   v. the unrealized amount represents the undrawn balance of an export bill (not exceeding 10 percent of the invoice value) and has been unpaid and turns out to be unrealizable despite all efforts made by the exporter;

   vi. the legal expenses likely to be incurred for recovering the said amount would be disproportionate and the exporter in spite of the court order in his favor is not able to execute the same due to reasons beyond his control; and

   vii. bills are drawn for the difference between the letter of credit value and actual export value or between the provisional and the actual freight charges but the amount has remained unrealized consequent to dishonor of the bills by the overseas buyer and documentary evidence is produced to show that there are no prospects of realization.

e. The case is not the subject matter of any civil or criminal suit which is pending.

f. The exporter has not come to the adverse notice of the Enforcement Directorate or the Central Bureau of Investigation or such other law enforcement agency.

g. The export incentives availed have been surrendered by the exporter.

## Change of Buyer/Consignee

Where after the goods have been shipped, there is a change in the buyer to whom goods are transferred, prior approval of the Central bank is not required provided:

- The reduction in value does not exceed 10% of the invoice value.
- The export proceeds are realized within the stipulated time period of 6 months from the date of shipment.

Where reduction in value exceeds 10%, the exporter will have to comply with the regulations stipulated in the paragraph ‘Reduction in value’.

## Extension of Time-Limit

Where the exporter is unable to realize the export proceeds within six months but expects to do so provided extension is granted to him, then he should make an application (in duplicate) for this purpose to the central bank in Form ETX along with the necessary documentary evidence. Before granting permission, the central bank should be convinced that the exporter is in no way directly or indirectly responsible for the delay and that by granting an extension he will be able to realize the export proceeds.

## Payment of Claims by ECGC

Even where the exporters’ claims have been settled by ECGC owing to their obligations under comprehensive insurance policy obtained by the exporter, exporters cannot do away with their obligation to realize the proceeds within the

stipulated time period. Exporters, directly in consultation with ECGC should take necessary steps to realize the proceeds. ADs will continue to hold the duplicate copies of GR/PP forms in their custody and initiate follow-up measures in the normal manner.

## SUMMARY

- Exports play a key role in the economy. It augments the country's exchange reserves. It also helps in maintaining a steady and stable growth rate besides improving employment opportunities. In view of this, Government provides different kinds of incentives to the exporters. One of the major incentives provided to exporters is granting of liberal credit by the banking system at concessional rates of interest. Banks are directed to make credit available both at pre- and post-shipment stages more liberally, i.e., without asking for collateral securities, etc. Banks have been asked to grant lines of credit to exporters even for 3-4 years depending on their track record, so that they can scout for business/export orders, without being bogged down with credit constraints.
- Packing credit at pre-shipment stage, discounting of bills at post-shipment stage, either in domestic currency or foreign currency is the most common mode of credit supply. To encourage banks to liberally sanction loans to exporters, banks are provided loan guarantee facilities by an officially set up body called ECGC.
- There are certain exchange regulations that define the mode of conducting exports and all the organizations/persons dealing with exporters should comply with these regulations as they are mandatory. But for this, export credit, its assessment, sanction, monitoring for repayment, etc. are just like any other normal credit dispensation.

## Chapter XVIII

# Securitization

**After reading this chapter, you will be conversant with:**

- Process of Securitization
- Benefits of Securitization
- Securitization of Residential Real Estate
- Pay-Through Securities
- Hindrances of Securitization

## Introduction

Securitization refers to conversion of illiquid assets to liquid assets by converting longer duration cash flows into shorter ones. Securitization denotes the process of selling of assets by the person holding it, to an intermediary who in turn will break such assets into marketable securities. The assets may virtually be anything ranging from future sales of cinema tickets and airline tickets to hire purchase deals and Non-Performing Assets (NPAs).

## ORIGIN

Securitization is a financial innovation born out of the necessity faced by savings and loan associations of the United States of America to save themselves from impending bankruptcy. When inflation began to rise and the market interest rates rose in step with it in the 1970s, these thrift (savings) institutions found that their spreads were turning negative, since they had to pay high market rates to attract short-term deposits (to compete with money market mutual funds and commercial banks offering money market accounts) and these rates were higher than the rates they were earning on the long-term mortgage loans which had been sanctioned years before. While mismatched assets and liabilities became a primary problem for the thrift institutions, another problem was excess of demand for loans compared to the deposits collected by S&Ls, banks, etc. The solution to this problem was found in securitization of debt.

The securitization of residential real estate in the United States was begun on the basis of the deeply ingrained principal, that the American family needs a home and will maintain that home over most other possessions; hence, the concept of using mortgage loans to support investment-grade securities, or the process of securitization took root. The statistical research also showed that the default rates on residential real estate loans were both minimal and predictable. Investment bankers saw this as an opportunity to generate liquidity. By 'packaging' hundreds of individual real estate mortgages into one large security, great confidence can be achieved in terms of the financial characteristics of the group. While it would be impossible to guess the probability and timing of the default of any individual mortgage, one could frame reliable predictions regarding average default for a group of mortgages on the basis of historical studies of other similar large pools of mortgage loans.

**Box 1: Securitization**

Securitization refers to the conversion of illiquid assets into liquid assets by converting longer duration cash flows into shorter ones. It is a process of selling of assets by the person holding them, to an intermediary who in turn will break such assets into marketable securities. The steps involved in the process of securitization are:

i. Transfer of assets by the originator (the person who holds the assets) to a Special Purpose Vehicle (SPV). An SPV is a separate entity formed exclusively for charting this deal and providing funds to the originator. An SPV can either be a company or a trust.

ii. The SPV divides this pool of assets into marketable securities called Pass Through Certificates and resells them to various investors. Here, the investors may be banks or mutual funds or government or even the parent company of the SPV.

iii. The issue of securities is managed by a merchant banker or a syndicate of merchant bankers who also underwrite the issue. Normally, a trustee is also appointed to oversee the process of securitization.

*Source: Icfai Research Center.*

## PROCESS

The process of securitization involves the following steps:

i. Transfer of assets by the originator (person holding the assets) to a person (company or a trust) specially created for the purpose called Special Purpose Vehicle (SPV). Special Purpose Vehicle is a separate entity formed exclusively for charting this deal and providing funds to the originator.

ii. The assets transferred should preferably be homogenous in nature in terms of the risk attached to them and/or maturity such that the pooling of such assets would be convenient. SPV divides this pool of assets transferred by the originator into marketable securities called Pay or Pass Through Certificates and resells it to various investors.

iii. Investors may either be a bank, mutual fund or government. The investors may even be the parent company or the financier of the originator.

iv. The issue of securities is managed by a Merchant Banker who may underwrite the whole issue or it may be a syndicate of merchant bankers. The originator continues to administer the loan portfolio for some fee and he passes the collections to the trust which services the securities.

Apart from the SPV, a trustee is normally appointed to oversee the process of securitization. An escrow account is created for the purpose of distributing the receivables to the investors in the deal. Such escrow account is maintained by the trustee.

Theoretically, any resource with predictable cash flows can be securitized as follows:

i. Future rentals of a fishing boat.

ii. Remuneration that is paid to a movie star.

iii. Bills that are made at a five-star hotel.

iv. Tickets that are to be sold at a cinema hall.

v. Future billings for an airline.

vi. Dues that have to be paid by the state electricity boards to the power generating companies.

vii. Credit card receivables.

viii. Loans that are to be paid to housing finance company.

ix. Mortgages in lieu of future payment.

x. Hire purchase receivables.

xi. Non-performing assets of a financial entity.

### A Typical Example

The process of securitization can best be understood by an example of a hire purchase company. Assume that there exists a company, a financial institution which has hire purchase as its major business. Being into hire purchase, the company will definitely have a pool of assets of different maturities spanning a few years. And obviously, these assets would be represented as lease receivables in the balance sheet of the company. That is, the company has now, its funds locked-up for maturities spanning over long years facing a liquidity problem and, constrained by capital adequacy norms in increasing its scale of business and hence has to raise capital. In such a situation, Securitization will help in the transfer of such illiquid lease rentals to the SPV created for that purpose thereby offloading from its balance sheet. The SPV will buy all these lease rentals with 'credit enhancement' clauses at a time and will take care of the receivables when they come.

**Box 2: Securitization – An Innovative Banking Product**

1. *What is securitization?*

A. Securitization is the process of pooling and repackaging of homogeneous illiquid financial assets into marketable securities that can be sold to investors. The process leads to creation of financial instruments that represent ownership interest. These instruments are often secured by segregated income producing assets, which collateralize securities.

2. *Why do we need securitization?*

A. Banking sector needs securitization for a variety of reasons like:-
Enhancing liquidity, attainment of capital adequacy ratio without augmenting capital and generally for increased operating efficiency.

3. *Which sector could be the ideal target for securitization?*

A. There are indeed many: There are many sectors like urban infrastructure, power, telecom, roads and ports, whose development can be accelerated through securitization route. Housing finance and auto finance sectors are also ideal candidates.

4. *Who are the parties to a securitization transaction?*

A. There are in deed many:
Primarily, there are three parties namely, the originator, the Special Purpose Vehicle (SPV), and the investors. There are also other parties like obligor, the rating agency, administrator (servicer) agent and trustee and structurer.

5. *What are the important roles of these parties*

A. **The Originator:** Normally he is the banker. It is in his book of accounts the assets to be securitized exist. It sells the assets (on a true sale basis) on its books and receives the funds generated from such a sale. True sale here refers to transfer of both legal and beneficial interest in the assets to the Special Purpose Vehicle (SPV). The funds he thus gets, enhance his liquidity.

**Special Purpose Vehicle:** The SPV buys the assets from the originator. It makes the payment to the originator. This way, the securitized assets will no longer appear in the balance sheet of the originator and hence, the capital adequacy requirements of the originator will be less to the extent of the securitized assets. Now onwards, the SPV holds the assets in its books. The SPV has independent trustees and or directors.

**Investors:** Normally, the investors are financial institutions, mutual funds, provident funds, pension funds, insurance companies, etc. They buy a participating interest in the total pool of receivables and receive repayment in the form of interest and principal as per the agreed terms.

The role of other parties are as follows:

**Obligor:** He is the original borrower who has raised the loan from the originator. It is this outstanding loan amount that is transferred to the SPV.

**Rating Agency:** The credit standing of the obligator is of great importance in the transaction. The investors take on the risk of the asset pool rather than the originator. the rating agency, therefore, would assess the strength of the cash flow and the mechanism designed to ensure full and timely repayment by the process of selection of loans of appropriate credit quality, the extent of credit and liquidity support provided and strengths of the legal framework.

**Administrator (Servicer):** It collects the payments due from the obligor and passes it to the SPV, follows up with defaulters and peruses legal remedies against them, if necessary.

**Agent and Trustee:** It accepts the responsibility for overseeing that all the parties to the securitization deal perform in accordance with the trust agreement. An agent is appointed, essentially to look after the interests of the investors.

**Structurer:** Generally, investment bankers act as structurers. Their role is to bring together all the parties to the deal and structure the deal.

6. *What is credit enhancement?*

A. Investors in securitized instrument take a direct exposure on the performance of the underlying collaterals and have limited or no recourse to the originator. Investors, therefore, require additional comfort in the form of credit enhancement. Various techniques of credit enhancements are as follows:

i. **External Credit Enhancement**

*Insurance:* Full insurance is provided against losses on the assets. This tantamounts to a 100 percent guarantee of the transaction's principal and interest payments. The issuer of the insurance looks to an initial premium or other support to cover credit losses.

*Third Party Guarantee:* This method involves limited/full guarantee by a third party to cover losses that may arise on non-performance of the collateral.

*Letter of Credit:* For structures with credit ratings below the level sought for the issue, a third party provides a letter of credit for a nominal amount. This may provide either full or partial cover of the issuer's obligation.

ii. **Internal Credit Enhancements**

*Credit Trenching (senior/subordinate structure):* The SPV issues two (or more) trenches of securities and establishes a predetermined priority in their servicing, whereby first losses are borne by the holders of the subordinate trenches (at times the orginator itself). Apart from providing comfort to holders of senior debt, credit trenching also permits targeting investors with specific risk return preferences.

*Over-collateralization:* The originator sets aside assets in excess of the collateral required to be assigned to the SPV. Cash flow from these assets must first meet any overdue payments in the main pool, before they can be routed back to the originator.

*Cash Collateral:* This works in much the same way as over-collateralization. But, as the quality of cash is self-evidently higher and more stable than the quality of assets yet to be turned into cash, the quantum of cash required to meet the desired rating would be lower than asset over-collateral to that extent.

*Spread Account:* The difference between the yield on the assets and the yield to the investors from the securities is called excess spread. In its simplest form, a spread account traps the excess spread (net of all running costs of securitization) within the SPV up to a specified amount sufficient to satisfy a given rating or credit quality requirement. Only realizations in excess of this specified amount are routed back to the originator. This amount is returned to the originator after the payment of principal and interest to the investors.

*Triggered Amortization:* This works only in structures that permit substitution (for example, rapidly revolving assets such as credit cards). When certain pre-set levels of collateral performance are breached, all further collections are applied to repay the funding. Once amortization is triggered, substitution is stopped and the early repayments is an irreversible process. Triggered amortization is typically applied in future flow securitization.

*Source: Icfai Research Center.*

**Box 3: What is Future Flow Securitization?**

Future Flow Securitization is different from Asset Securitization. In the case of Asset Securitization, the pool of income producing assets collateralizes securities. These assets are generally secured by real property like automobiles, real estate or equipment.

A Future Flow Securitization, on the other hand, raises funds based on expected future cash flows, that have not, at the close of the transaction, been generated. These transactions can be subdivided into two: long-term contract receivables and future cash flows. Examples of long-term contract receivables are term off-take agreements for the supply of goods (like oil, coffee or steel) or services (like payment for clearing services). Volumes are generally prefixed, but the price of receivables may be variable. Generally, there will be provision for some type of price floor through the use of hedging instruments.

The future cash flow category would include receivables that are not only subject to price variations, but also to variations in volumes. Examples are ticket receivables, telecom receivables, etc. In such cases, a 'base case' for the volume of receivables is presumed. Generally, the base case cash flows are progressively reduced over a number of years. The nature of that cash flow, along with a string of other structural credit enhancements, generally ensures that the transaction is rated above the unsecured debt rating of the borrower. This way, the borrower is able to secure a finer pricing and longer tenures in comparison to the terms of the other funding agencies.

*What are the advantages of Future Flow Securitization?*
There will be lesser cost of funds for the borrower, due to higher rating. It is also possible to have a diversified source of funding. Securitized transactions, being of higher quality, attract investor interest, even during the periods of credit crunch.

Securitization can serve to extend the tenure of financing available to borrowers.

*What are the risks associated?*

**Performance Risk:** Future flow transactions rely on the future generation of cash flow to repay investors. Therefore, the continued existence and performance of the borrower throughout the tenure of the transaction are critical considerations to investors. Should the borrower become insolvent, no creditors of the borrower would be able to make a claim against the receivables sold to investors. So long as the borrower continues to operate, investors will receive payments. In terms of mitigating this risk, there is very little that can be done structurally, without obtaining the support or guarantee of a rated third party.

**Generation Risk:** There is still another risk related to the sustained generation of the receivables at certain levels from a host of factors outside the control of the borrower, e.g., anticipated reserves may not materialize or seasonal variations in the anticipated levels of receivables may occur. This risk is mitigated through adequate over-collateralization. Further, in order to protect investors against more sustained long-term declines in the levels of receivables generated, early amortization triggers are usually built into the transaction that will trigger repayment of the securities on an accelerated basis if a predefined trigger level is breached.

**Price Risk and Off-take Risk:** These refer to likely price variations or the concern that the obligors in the future cease buying or reduce their purchasing level of the goods or service from the seller.

*Source: Icfai Research Center.*

## Credit Enhancement

To obtain an investment credit rating and make the transaction attractive to the investors, some type of credit enhancement procedure is usually necessary. In order to cover the possibility that the loan portfolio will generate insufficient payment to fund payments of notes interest when due, some form of liquidity support is provided, usually by a credit facility from a third party lender. The credit enhancement part will take care of the risk involved in such receivables that will protect the SPV against potential default in respect of the receivables acquired[1]

Since this process of securitization often involves dealing with the backing of assets, it is referred to as Asset-Backed Securitization (ABS). There is another form of securitization that deals with mortgages instead of assets called as Mortgage-Backed Securitization (MBS).

In MBS, securitization will be done on a pool of mortgages that are placed with the originator. Say, in case of housing finance company which finances construction/acquisition of dwelling units in return of mortgaging of such dwelling units, the housing finance company may securitize the mortgages thereby seeking the advantages of securitization. Most other factors remain the same as in ABS.

Though it was stated earlier that any resource with predictable cash flows could be securitized, the investment bankers perceive that to make a resource attractive as a raw material for securitization, the following features must be presented:

i. The asset portfolio must have a documented history showing loss and delinquency experience.

ii. The historical loss on the portfolio must have been modest.

iii. The assets must have originated from standardized contracts.

iv. The asset portfolio must have been so structured that the risk is well-diversified.

## Asset-Backed Securitization vis-á-vis Mortgage-Backed Securitization

The market for non-mortgage Asset-Backed Securities (ABS) was established in the United States in 1985. The ABS market is dominated by securities backed by automobile loans and credit receivables. Other assets used include computer and automobile leases premia, insurance, corporate trade receivables, credit card receivables and even computer leases.

Asset-backed securities are structured as a trust or a company, similar to mortgage-backed securities. The Uniform Commercial Code of the United States, there is no need for a trustee to take physical possession of any account documents to perfect a security interest in the receivables, as is required with mortgage securities.

The forms in which the ABS are issued may be broadly divided into two: installment contract ABS and revolving credit ABS. The installment contract ABS bears a close structural resemblance to mortgage pass through securities. These ABS offer investors an undivided interest in a trust formed by the issuer. All the loans on automobiles, trucks and other assets are pooled to create the trust. The loan agreements in the pool may have various final maturities, usually not extending beyond five years from the date of issue of ABS. Interest rates on the ABS would be typically lower than the loan interest. All installment contract ABS call for full amortization of principal over the term-to-maturity through virtually equal monthly payments. Investors receive monthly interest on the outstanding balance. Each investor receives a pro rata portion of principal and interest each month. The amount of principal included in each payment will depend on the amortization and prepayment rate of the underlying collateral. Faster prepayments will shorten the average life of the issue.

The revolving credit ABS are usually backed by likes of credit card receivables. For a specified period (the revolving period) these ABS do not amortize principal. The principal from the receivables is retained by the trustee to reinvest in additional receivables. Interest on revolving credit ABS is paid every month. Most

1 Some forms of credit enhancement are: Over-collateralization, Cash Reserve Account, Subordination, Issuer limited recourse in case of high risk receivables such as NPAs, Letter of Credit, Mortgage Pool Insurance and Financial Guarantee by the banker of the Originator on the receivables.

ABS carry a fixed rate of interest. Principal payments are distributed monthly with the interest payment during the amortization period, which follows the end of the revolving period.

**Table 1: Difference between Mortgage-Backed and Asset-Backed Securitizatoin**

| Mortgage-Backed Securitization | Asset-Backed Securitization |
|---|---|
| i. Evolution and development of Securitization is slow due to several legal hassles involving mortgaging. | i. It is difficult to identify homogenous assets of same quality. |
| ii. Also backed by easily traceable immovable property like real estate. | ii. Backed by movable which may not be easily traceable. |
| iii. Mortgage has to exist necessarily at the time of securitization. | iii. Asset need not exist at the time of securitization such as future cash flows can also be securitized. |
| iv. Process takes into consideration appreciation in the value of assets. | iv. Process takes into consideration depreciation in the value of assets. |
| v. Legal hassles in recourse to the Originator in case of default in receivables. Also, mortgage property can only be taken control of but not disposed off by the originator, SPV or the trustee without intervention of court of law. | v. Legal hassles are relatively less as compared to MBS. |
| vi. Stamp duty is levied on the basis of the rates specified in the state where the deal is struck. | vi. Stamp duty may vary irrespective of the location as the assets may not be based at one place. |
| vii. Low yields to the investor. | vii. High yields to the investor. |

## BENEFITS OF SECURITIZATION

The attractions of securitization have led to a widespread application of the technique to residential mortgage loan, the easiest class of financial asset to secrets, and to a growing volume of structured offerings of consumer receivables such as automobile loans, lease rentals, credit card receivables. While the benefits of securitization would depend on individual situations, the state of the assets, the state of the borrower and capital market conditions, certain key factors stand out:

i. The loan originators can raise money as soon as they create loans. They need not hold their asset portfolios till their maturity. This will help in multiple asset creation thereby helping routing of funds into business thereby increasing the profitability.

ii. The investor benefits in that the security he buys is of a good quality debt (usually rated AAA as it is credit enhanced) at higher yields and good liquidity. In most of the cases, the deal is underwritten by a merchant banker. Also, the deal will have a trustee to oversee the operation of transfer of receivables to the investors in due course.

iii. Normally, securitized debt can be cheaper than other forms of funding as the securities enjoy a wider investor base and certain liquidity. It also improves returns on equity and assets besides eliminating the problem of mismatching by transforming the credit assets of the lending institutions into more liquid and marketable instruments and selling it to investors.

iv. Securitization deals help the originator beat the rating given to the company. Rating given to the company is based on all the items present in balance sheet

with a reasonable judgment on the quality of these assets. With the securitization deal taking place on a particular class of assets present in the balance sheets there is case of originator getting funds at a rate cheaper than what would have been possible on its own.

v. Not only securitization helps in getting funds at low cost, it also enables the originator to take advantage of more profitable investment opportunities with the revenue generated through securitization.

vi. Securitized assets give originators the ability to pass on or eliminate credit, interest rate and lending risks associated with balance sheet funding. This improves asset management and is an effective means of diversifying credit risk.

vii. By transforming an illiquid asset on the balance sheet into cash, the originator minimizes the accounting leverage as measured by the debt ratio and thus enables raising more funds without impairing its borrowing ability.

**Box 4: Securitization of Future Flow Receivables: A Useful Tool for Developing Countries**

**Risk Mitigation**

Securitization is a fairly recent financial innovation. The first securitized transactions occurred in the United States in the 1970s and involved the pooling and repackaging of home mortgages for resale as tradeable securities by lenders. Since then, securitized markets have grown in sophistication to cover a wide-range of assets. In developing countries, particularly in Latin America, some borrowers have raised financing by securitizing future flow receivables in hard currency.

In a typical future flow transaction, the borrowing entity (originator) in a developing country sells its future products (receivables) directly or indirectly to an offshore Special Purpose Vehicle (SPV), which issues the debt instrument. Designated international customers (obligors) are directed to pay for the goods they import from the originator directly into an offshore collection account managed by a trustee. The collection agent makes principal and interest payments to lenders. Any funds left over are forwarded to the originator.

*Source: Icfai Research Center.*

## Credit Rating

Credit rating forms an integral part of the securitization deal. After identifying the homogenous pool of assets that are to constitute a securitization deal, rating is sought by the originator to rate the securitization deal based on the tentative parameters on other parts of the deal. Credit rating agency considers that part of assets that are to be securitized without considering the assets in the balance sheet. By this, as mentioned above, there exists a possibility of securitized assets having a higher rating than the rating of the company itself. All the credit rating agencies rate securitized instruments. Credit rating helps the investors to gauge the risk in investing in the deal. It also helps the originator to beat its own company's rating thereby enabling it to borrow funds at a cheaper rate.

The parameters considered by the credit rating agency while rating a securitized deal are similar to the parameters used for rating any other similar borrowing instrument like the fixed deposits. The variance will be in consideration with the pool of assets.

## Credit Rating of Pass-Through Securities

The mortgage pass-through securities were also sought to be made more attractive to capital market investors by subjecting these securities to credit rating. In the United States, each rating agency has defined a series of criteria that must be adhered to in order to obtain its designated ratings. The rating of the pass through securities in reality is not a rating of the instrument but a rating of the 'pass

through' process. That is, high importance is attached to the rightness and security of cash flow from the mortgagor's hands to the hands of the ultimate pass through certificate holder.

Credit rating of these securities tries to give an opinion of the credit exposure (loss of both principal and interest) to the pass through certificate holder. The rating agency reviews in addition to other aspects, the flow of payments as outlined in the pooling and serving agreement, which is the operative document for a pass-through security. The focus will be on the timely payment of principal and interest to certificate holders and on the mechanism established to cover any shortfalls that may arise due to deficiencies in the collateral. The shortfalls which may usually arise are sought to be covered through a pool insurance or a senior/subordinated structure. While the pool insurance involves taking out an insurance policy that covers losses equal to a defined percentage of the pool, the senior/subordinated structure (or senior/junior structure) involves over-collateralization (that is, offering a value of mortgages which is much higher than the amounts payable on the pass through securities) and subordinating the cash flows of a class of junior securities to those of senior class of securities. The senior class through this process, gets a protection comparable to a pool insurance policy.

## SECURITIZATION OF RESIDENTIAL REAL ESTATE

In this section, we will discuss the process of securitization of residential real estate and the features of the instruments created by securitization. As mentioned before, securitization of mortgages may also be done to convert underlying longer maturity loans into short-term marketable securities.

### Whole Loans

In a whole loan sale, all rights and responsibilities connected with a mortgage loan are transferred to the purchaser. The rights so transferred include the right to collect monthly principal and interest payments, the right to seize and sell the property if payments on the underlying loan are not made on a timely basis and the right to amend the terms of loan to correct a delinquent status. The whole loan sale is a sale whereby the originator or the mortgagor or any subsequent mortgagor finds a willing buyer who would provide liquidity to the seller for the right acquired under the sale to take over the mortgage loan. Thus, each loan or a number of loans are sold to individual buyers. The seller ceases to have any right on the mortgage loan subsequent to the sale.

The other features of whole loans are as below:

- A whole loan sale may be with recourse or without recourse to the seller.
- The seller may retain the right to service the loans; that is, the seller may collect the monthly principal and interest payments, deduct a servicing fee, remit the balance to the buyer of the loan and also correct delinquent loan payment situations and initiate foreclosure proceedings on default. The seller may also not retain the right of servicing the loan under a whole loan sale.
- Before buying a whole loan, the buyer would inspect the files connected with the mortgage loan under sale. The buyer may take on the loan only on the seller making specific representations and warranties with respect to the loan – such as amount of loan, coupon rate and maturity of each loan, the type of property, status of ownership and the like. The loan documents and trust deeds are transferred to the buyer with a proper assignment deed.

The whole loans were not highly useful as a medium of liquidity, because the buyer had to inspect each loan assigned to him individually and this meant that only a buyer with proven expertise in assessment of mortgages (such as other thrift institutions and mortgage bankers), could invest in the whole loans. Since the

whole loans market circulated the same funds available with the thrift institutions and mortgage banks, it was felt that a different kind of security which would draw diverse investors was necessary.

## Mortgage Participation Certificates

These certificates were designed to reduce the amount of loan-by-loan review that needed to be performed by a purchaser of a pool of whole loans. The seller brought together a pool of mortgage loans which were inspected and reviewed by a third party known as the custodian. Representations and warranties on a particular pool were made by the seller, who took upon the obligation to repurchase any loan in the pool, which did not conform to such representations and warranties. These certificates were not very popular, since the purchaser was fully exposed to all the risks and losses associated with the pool of loans. Also, investors investing in capital market securities could not fully comprehend these certificates as the loans were difficult to analyze. The presence of peculiar features such as prepayment options with the borrower to repay principal at any time, the monthly periodicity of the cash flows and the weak financial positions of the thrift institutions themselves (which made even loans with recourse to the seller appear risky) deterred the growth of the market for the mortgage participation certificates.

## Mortgage Pass-Through Securities

When mortgages are pooled together and undivided interests in the pool are sold, pass-through securities are created. The term 'undivided' in the context of pass through securities means that each holder of the security has a proportionate interest in each cash flow generated in the pool. When a pass-through security is sold, it is to be construed as a sale of assets and not as an issuance of debt obligations of the originator of the mortgages. That is, the obligation to pay continues to be that of the borrowers collectively and the originator has no obligation to pay. The pass-through securities promise that the cash flow from the underlying mortgages would be 'passed through' to the holders of the securities in the form of monthly payments of interest, principal and prepayments. When the holder of an individual mortgage prepays the whole or part of the principal before the scheduled date, prepayments are said to occur.

The most active issuers of mortgage pass-through securities are the mortgage originators such as savings and loan associations, commercial banks and mortgage companies. The originator can either issue a private pass-through security or file the necessary documents with a guarantor for the issue of a pass-through security backed by the guarantor. From the investor's point of view, securities backed by guarantors are safer investments than private pass through securities as in the former timely payment of interest and principal is guaranteed.

The cash flows from a pass-through security will be exactly equal in magnitude to that of cash flows from a mortgage directly financed by the investor, if the elements of servicing fees and prepayments were not there. However, there would still be a time lag in the receipt of cash flows from the pass through securities. All originators do collect a servicing fee which is structured as a direct deduction from the interest on the mortgage and compensates the originator for the cost of collecting the payments and ensures that the originator has a continuing interest in monitoring the status of the loans. When servicing fees is deductible, and no prepayments occur, even the cash flow from a pool of traditional mortgages derived through the pass through securities will not be equated, as the deduction in the form of servicing fee, declines over time. This is because the servicing fee is charged (like interest) on the outstanding balance of the principal amount.

**Table 2: Comparing the Features of Mortgage Securities and Alternative Investment Instruments**

| Feature | Mortgage pass throughs | Mortgage backed bonds | CMOs | Corporate bonds | Treasury Bills |
|---|---|---|---|---|---|
| Use of Collateral | More efficient use of collateral but credit enhancement required for private issuers | Inefficient | Relatively efficient | N/A | N/A |
| Certainty of Cash flow | Relatively uncertain | More predictable | More predictable still | Usually callable only after 5 to 10 years | Non-callable except for longest maturities |
| Frequency of Payments | Monthly payments of principal and interest | Quarterly or semi-annual payment of interest with bullet repayment of principal on maturity | Semi-annual payment of interest with bullet repayment of principal on maturity | As with CMOs (although many eurobonds pay interest annually) | Issued at discount to face value |
| Average Life | Depends on prepayment experience of underlying mortgages | As with mortgage pass throughs | Predictable for the fast pay bonds: less so for the slow pay bonds | Predictable minimum average life and pre-payment penalties increases return if called | Very predictable as the majority are non-callable |
| Liquidity | Good, especially for GNMAs | Adequate | Good | Limited for many bonds | Excellent |
| Credit Risk Spectrum | Range from government guaranteed to A rated private pass throughs | Most AA or AAA | Most AAA | AAA to speculative | All backed by the full faith and credit of the US government |
| Investor Spectrum | Mainly with traditional mortgage market participants. Limited capital market investor base | As for pass throughs plus medium/long-term capital market investors | Wide investor spectrum across mortgage and capital markets | Wide capital market investor spectrum | Limited capital market investor spectrum |

*Source: Securitization: Redefining the Bank, Paul W. Feeney*

The mortgage pass through securities were designed to serve the following purposes:

i. To enhance the creditworthiness of the sale of mortgage loans, so that a better insulation from the possibility of loss could be offered to the investors who have not traditionally invested in mortgages.

ii. To create a security that would be more freely treatable and transferable.

iii. To create a security that would not necessarily involve the inspection of each loan as done in the case of whole loan sales.

To create a pass-through security, the loans or pieces of collateral are placed into a trust estate created and held by an independent trustee and proportionate ownership interests in the pool are sold. The rights to all cash flows associated with the mortgage loans – principal and interest payment, insurance payment, insurance proceeds, prepaid principal are assigned to the trustee for the benefit of the pass through certificate holders. These securities are normally designed to distribute cash receipts on the 25th of the month following expected receipt of the mortgagor's payment so that sufficient time is allowed for processing the payments.

## Standardization

In spite of the mortgage-pass through securities offering the holders the advantage of free tradability and transferability, the market for these securities did not flourish as there needed to be some form of standardization in the mortgage market as well as a major clearing house for the purchase and sale of mortgage securities. In the late 1970s and early 1980s, three institutions were established in the United States to address these problems. Different characteristics of the loans which could be securitized were announced by three government backed agencies – Government National Mortgage Association (GNMA), the Federal National Mortgage Association (FNMA) and the Federal Home Loan Mortgage Corporation (FHLMC). The agencies were authorized to take mortgage loans from the thrift institutions and create pass through securities that could be sold in the secondary market. Due to the large purchasing efforts on the part of these agencies, the characteristics spelt out became the standards of loan packages in the secondary market. The

process of credit rating further helped in popularizing the mortgage pass through securities.

## Mortgage-backed Bond

The mortgage-backed bonds, another form of asset securitization, were evolved to address a weakness inherent in a mortgage pass-through security, namely, lack of call protection and poor predictability of cash flow. Under the mortgage pass-through security, if the borrower wished to prepay his mortgage loan due to change of job, refinancing, death, or buying a new home, such prepayment would be accepted and the cash flow would be passed on to the holder. Thus, the maturity of the pass-through security instead of the expected term of say, 30 years, could also be cut short to a term of say, 30 days.

A mortgage-backed bond is a collateralized term-debt offering. It is secured by mortgages which have a market value of 110 to 200 percent of the principal amount of the bond. Unlike the pass through certificates, the mortgages are not sold to the holder of the security, but are used only as collaterals for the bonds which are issued to raise finance. The terms of these bonds are like the bonds floated in the capital market – semi-annual or quarterly payments of interest at a fixed rate or floating rate and final bullet payment of principal.

The savings and loan associations and other thrift institutions have been the predominant issuers of mortgage-backed bonds. Since the issuer does not assign the mortgage loans to the investor, but only offers them as collateral, the rating of the bonds will consider the financial strength of the issuer. These bonds are over-collateralized so that even when some of the borrowers under the mortgage have made prepayments well ahead of the maturity of the bonds, there would be sufficient protection offered to the bondholders in respect of the bullet payments of the principal on the date of maturity of bonds.

The collateral offered under these bonds are pledged to an independent trustee. This pledging ensures that a smooth liquidation takes place in the event of default on the part of the issuer of bonds. Although, the mortgage-backed bonds could protect the investor from prepayments, they involved over-collateralization and resulted in inefficient utilization of eligible collaterals and restricting the power of originator of the mortgages from borrowing to the fullest possible extent against the market value of the mortgages.

In the case of traditional mortgage-backed bonds, when a default occurs, the collateral would be liquidated by the trustee to repay principal and accrued interest and the investor will have to bear the risk only for the price paid on purchase which is in excess of the par value of the bond.

From 1987 onwards, mortgage-backed bonds with a defeasance structure are being issued. Under the defeasance structure, when there is a default on the bond, the traditional accelerated payment is not done but the trustee is given powers to effectively defease the issue with a portfolio of government securities. In other words, the issuer is required to maintain sufficient collateral to enable the trustee to purchase a portfolio of government securities whose cash flow would satisfy the payment of principal and interest on the mortgage-backed bonds. The defeasance structure provides maximum protection to the bondholder against loss and premature call of the bond.

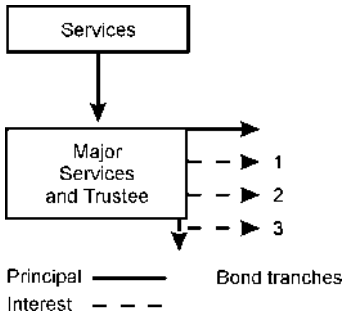
## Collateralized Mortgage Obligation (CMO)

To create a securitized mortgage that incorporated the mortgage backed bond's cash flow predictability and improve the use of collateral for the issuer cash flow bond (or pay through security) and the collateralized mortgage obligation were created. Cash flow bonds looked very similar to normal pass through securities in that the cash flows arising out of the underlying pool of mortgages were dedicated to the servicing of the bond. However, it was similar to mortgage backed bonds in that the collateral was placed in the hands of trustees. The variant of cash flow bond widely used is the collateralized mortgage obligation.

CMOs were created to protect the investors from pre-payment risk. The CMO takes the same cash flow that a conventional pass-through security generates and

then carves them into discrete maturities or tranches. Thus, under a CMO there could be class A bonds maturing in 7 years, Class B bonds maturing in 15 years and so on. Cash flows generated by the underlying collateral (to the extent that it exceeds the amount required to pay interest) is used to retire bonds. Only one class or tranche of bonds at a time receives principal. All principal payments, as stipulated by the prospectus are made for the 'fastest pay' tranche of bonds. Once the retirement of this tranche is completed, the next tranche in the sequence is repaid along with the principal amount. This sequential process continues until the last tranche of bonds is retired. The CMO innovatively uses the cash flows of long maturity, monthly pay collateral to create securities of differing – short, intermediate and long – final maturities and expected average lives.

**Figure 1**




*Source: Securitization: Redefining the Bank by Paul W Feeney.*

The process by which cash flows get from the collateral to the bondholders in different tranches is depicted in figure 1. In this example, whilst interest is paid to each of the three tranches, any excess cash flow generated by the collateral is paid exclusively to the first tranche of bonds until this is fully repaid. Thereafter, excess cash flow is applied solely to the second tranche and so on.

## Cash Flow Apportionment under a CMO Structure

For investors seeking low exposure to interest rate risk, the shorter tranche CMOs are best suited. Since the shorter tranches must be retired before longer tranches receive principal payments, the longer tranches have a form of call protection. For long-term investors who want to avoid call and reinvestment risk, the longer tranche CMOs are ideal investment vehicles.

## Benefits of CMO

### TO THE INVESTOR

- CMOs are considered to have a high-level of credit quality, because of the quality of the underlying collateral. To be assigned a high credit rating a bond should be structured in such a way that the cash flow generated is at least sufficient to support the amount of bonds in issue even under the most conservative prepayment nature.

### TO THE ISSUER

- Compared to pass through securities, funds can be raised more cheaply due to segmentation.
- Wider diversification of investor base can be achieved.
- More efficient use of collateralization than mortgage backed bonds.

## Comparing the Different Mortgage Securities

The table in the previous page compares the features of the three main classes of mortgage securities (pass throughs, mortgage backed bonds, and CMOs) with each other and with two of the main alternative investments (corporate bonds and treasuries). Mortgage backed bonds and CMOs in particular, have developed many of the characteristics of the two other main capital market instruments examined, corporate bonds and treasuries. By so doing, they have been able to tap a wider investor base in the capital markets than have pass through securities, which are still generally held by participants active in the US primary mortgage market.

## Interest only/Principal only Securities

These securities are referred to as STRIPs (Separate Tranche Interest and Principal). The STRIP security is created by taking the cash flows from the underlying collateral and splitting them into two or more classes that have the same maturity as the underlying collateral. Certain classes will receive more of interest than other classes while the other classes will receive more of principal than those classes entitled to receive more of interest.

The purchaser of the Interest-Only (I/O) portion of the STRIP invests in a security with a yield potential of a high-coupon collateral. The expectation of this investor is that the interest rates will remain the same or will continue to rise which would result in slower prepayments. This is because the borrower of the mortgage loan in order to prepay would have to raise funds at equal or increased interest rates and hence would be better off paying the interest stipulated in the mortgage.

The purchaser of the Principal-Only (P/O) portion of the STRIP expects the interest rates would continue to fall and the borrowers of the mortgage loans would resort to large-scale prepayments. This is because when market interest rates are falling the borrowers would be induced to replace the higher interest obligations under the mortgages with lower interest loans. P/O is bought at a discount and any faster return of principal accelerates the yield to the investor.

Both the I/O and P/O are extremely volatile and sensitive to small changes in interest rates and the resulting prepayment rates. The returns to the investors of I/O and P/O move in opposite directions.

# PAY-THROUGH SECURITIES (PTS)

In a pay through arrangement, there are broadly three parties involved. They are, a seller, a SPV and a board of trustees. The seller (who undertakes the pay through initiative) transfers (sells) the assets to a third party, known as the 'Special Purpose Vehicle (SPV)'. The SPV then issues notes which are collateralized by the assets or receivables. The debt issued by the SPV bears interest at a specified rate. Since the SPV is used for effecting a pay through transaction, the SPV should have some equity component in its capital structure. This is because the law in the US does not permit companies to be financed entirely through debt. The investors, who subscribe to the notes issued, may not be very sure of the credibility of SPV. Therefore, the issuer constitutes a trust, managed by a board for trustees for liaison between the investors and the SPV.

## Procedures Involved in a Pay-Through Mechanism

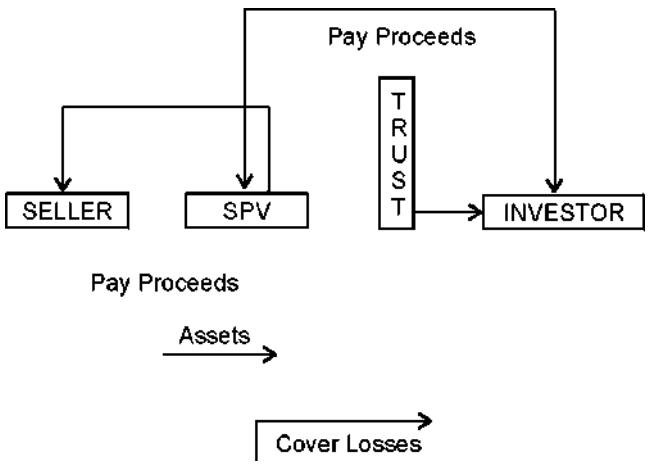
A pay through structure revolves around a special arrangement known as the 'Special Purpose Vehicle (SPV)', which comes into existence only for the purpose of structuring the deal. The SPV is brought into existence by the issuer himself. The issuer identifies receivables or other assets suitable for securitization and sells those assets to the SPV and simultaneously does credit enhancements. The SPV purchases the issue and issue notes to the investors, which bear a specific rate of

interest. The SPV then receives the funds from the investors and pays back to the securitizing company. This way, liquidity needs of the company are met. Later, when the inflows from the receivable start coming in, the trustees receive those inflows and appropriate them to the investors. To attract more and more investors to participate in this process and to provide a cushion to the investor, the issuer undertakes credit enhancements. Let us now understand what the process of credit enhancement is all about.

Even though credit enhancement is frequently talked about in the context of asset-backed securities, it has been in practice in other forms in different contexts. The practice of personal guarantees, etc., are just the variations of the process under discussion. The credit enhancement provides cushion to the investors of the security by providing over-collateralization or by way of third party credit enhancements. The guarantor or the credit enhancer provides guarantee up to the full value of the issue, which makes the issue marketable on this implied protection. Overall, the process of credit enhancement aims to fulfill the objectives of eliminating the credit risk for the investor as much as possible. Broadly, there are two forms of credit enhancement practices; they are Issuer Provided Enhancements and Third Party Enhancements. The Third Party Enhancement is further bifurcated into Full Enhancements and Partial Enhancements.

## Pay-Through Structure

**Figure 2**




## Issuer Provided Enhancements

The issuer can provide credit enhancements to the portfolio either by over-collateralization or by way of direct recourse. Either way, the objective is to minimize the risk exposure of the investors. Over-collateralization is the act of providing more collateral than required to meet the obligations. In direct recourse, the company going for securitization of its assets undertakes to make good all the shortfalls in the cash flow required to service the issue of securitization.

## Third Party Enhancement (Full)

Third party credit enhancement good if the third party is of high credit quality. In this case, the debt repayment capacity of the party, who is extending the credit enhancement facility, is evaluated. If the party is found sufficiently creditworthy, the securitization is considered to be fully credit enhanced by a third party.

## Third Party Enhancement (Partial)

As the name suggests, the guarantee given by the third party against the portfolio is less than 100% of the value of the underlying assets. The partial and the full enhancement by the third party are generally provided by the financial institutions. Since the credit quality of the guarantor is different from the credit quality of the assets, it is difficult to ascertain the extent of credit risk reduced due to the enhancement.

## HINDRANCES FOR SECURITIZATION

The success of securitization depends on whether a secondary market can be developed for these instruments. Certificate of deposits, commercial papers, participation certificates, etc., have not become very popular due to non-development of an active secondary market for these instruments. Thus, for securitization to provide liquidity requires an active secondary market. The following factors are recognized as the main factors that have hindered the development of securitization:

i. One of the main impediments in developing of securitization market is the levy of stamp duties.

ii. Mortgage securitization is facing a bottleneck in the foreclosure norms that restrict the transfer of property without the intervention of court of law. This makes the securitization of mortgages difficult.

iii. The guarantor of a loan cannot mortgage his own property in case if receivables are not properly accrued. This inhibits the quality of assets thereby decreasing the quantum of homogenous quality assets for a mortgage backed securitization.

However, this is possible only if some supportive measures are undertaken like:

i. Legal and legislative changes to make transfer of assets an easy exercise.

ii. Stipulation of stricter capital adequacy norms to take care of risks involved in the process.

iii. Unlimited amount of funds should be allowed to be raised through securitization.

iv. Issue of separate set of guidelines for capital requirements, etc.

To make this concept a success, massive publicity to market it as an alternative instrument to investors and educating investors is also necessary.

### Securitization of Markets Abroad

The securitization markets in the US were worth $25 trillion by the end of 1998. Securitization was started to create asset-backing or mortgage-backing to risky securities. Such securities are collateralized by money flows from the borrowers. Despite its size, this is an invisible market, as most of the securitized instruments do not trade in the exchanges.

The following are some of the advantages of securitization as seen by financial experts in the US:

i. Saleability of illiquid assets.

ii. Securitization of any kind of payment flows.

iii. Designation of securities to provide for any risk level.

iv. Achievement of AAA rating, even for risky and obscure assets.

However, the following are the disadvantages as per the same experts:

i. During sharp economy contractions, liquidity of securitization may be illusionary.

ii. Securitization can lead to creation of excessive credit.

iii. Expectations of consumer behavior may not be correct, and the cash flows expected may be different.

## SUMMARY

- Securitization is the process of selling assets by the person holding them to an intermediary who in turn will break such assets into marketable securities. Any resource that has a predictable cash flow can be securitized. The person holding the assets is called the originator and the entity specially created for the purpose of transfer of assets is called Special Purpose Vehicle (SPV). The underlying assets should preferably be homogenous in nature and of same quality, in terms of the risk associated with them or their maturity periods. The marketable securities are called Pay or Pass through Certificates and the investors may be banks, mutual funds, government, etc.
- If the process of securitization is backed by assets, it is called Asset-Backed Securitization (ABS). If the deal is backed by mortgage it is called Mortgage-Backed Securitization (MBS).
- All credit rating agencies rate securitization deals and consider only those assets that are to be securitized in the balance sheet of the originator. Such ratings will have a 'SO' suffixed to the deal to indicate the instrument is a 'Structured Obligation' and had met all the parameters for credit rating.
- Longer Maturity Loans can be converted into short-term marketable securities in whole loan securitization and the rights and responsibilities are transferred to the purchaser. In such a case, the seller may retain the right to service the loans and also the right to initiate foreclosure proceedings in case of default.
- Mortgage Participation Certificates are designed to reduce the amount of loan-by-loan review that is needed to be performed by a purchaser of a pool of whole loans.
- Mortgage Pass-through Certificates are created when mortgages are pooled together and the undivided interest in the pool is sold. The originator of these certificates can either issue a private pass-through security or a pass-through security backed by a guarantor.
- Mortgage-Backed Bond is a collateralized term-debt offering, secured by mortgages which have a market value that is far more than the principal amount of the bond. The mortgages are not sold to the holder of the security, but are used as collaterals for the bonds which are used to raise finance.
- Pay-through Securities revolve around a special type of arrangement known as Special Purpose Vehicle (SPV). The issuer identifies receivables for securitization, sells them to the SPV, which in turn issues notes to the investors bearing a specific rate of interest.

## Chapter XIX

# Factoring and Forfaiting

**After reading this chapter, you will be conversant with:**

- Concept of Factoring
- Forms of Factoring
- Factoring vis-á-vis Bills Discounting
- Factoring vis-á-vis Credit Insurance
- Factoring vis-á-vis Forfaiting
- Functions of a Factor
- Legal Aspects of Factoring
- Evaluation of Factoring
- Benefits of Factoring
- Forfaiting

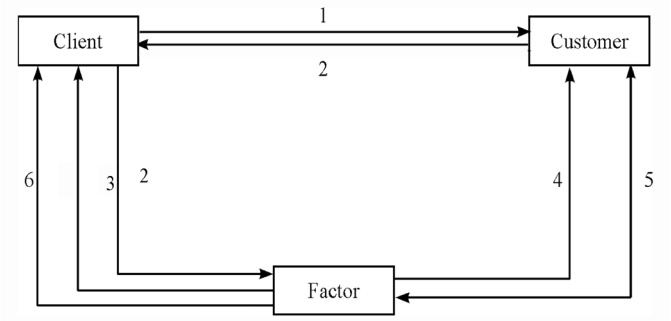
## INTRODUCTION: FACTORING

Our discussion so far has been centered on fund-based financial services predicated upon the fixed assets of the firm. In this chapter, we will discuss about the fund-based financial service – factoring predicated upon the receivables of the firm. Factoring, basically involves transfer of the collection of receivables and the related bookkeeping functions from the firm to a financial intermediary called the factor. In addition, the factor often extends a line of credit against the receivables of the firm. Thus, factoring provides the firm with a source of financing its receivables and facilitates the process of collecting the receivables. This chapter presents the conceptual framework underlying factoring and the salient features of factoring transactions.

## CONCEPT OF FACTORING

We can define factoring as the sale of book debts by a firm (referred to, in this chapter, as the 'client') to a financial intermediary called the factor on the understanding that the factor will pay for the debts as and when they are collected or on a guaranteed payment date. Usually the factor makes a part payment immediately after the debts are purchased thereby providing immediate liquidity to the client. Figure 1 depicts the process of factoring.

**Figure 1: Process of Factoring**




**Explanatory Notes (for figure 1):**

| Transaction No. | Description |
|---|---|
| 1. | Client concludes a credit sale with the customer. |
| 2. | Client sells the customer's account to the factor and notifies the customer. |
| 3. | Factor makes a part payment (advance) against the account purchased after adjusting for commission and interest on the advance. |
| 4. | Factor maintains the customer's account and follows up for payment. |
| 5. | Customer remits the amount due to the factor. |
| 6. | Factor makes the final payment to the client when the account is collected or on a guaranteed payment date. |

For rendering the services of collection and maintenance of sales ledger, the factor charges commission expressed as a flat percentage of the value of debts purchased and collects this commission upfront (at the time of purchasing the debts). For making an immediate part payment against the debts purchased (which is of course an advance), the factor charges interest at a rate which is marginally higher than the rate of interest charged by banks on working capital advance. The interest charge is calculated for the period between the date of advance payment and the date of collection or the guaranteed payment date. If the interest charge is collected upfront, it is referred to as the discount charge. Illustration 1 explains the mechanics involved in calculating the discount charge and the amount of advance.

**Illustration 1**

Under an advance factoring arrangement Masood has agreed to advance a sum of $14 million against the receivables purchased from ABC Company. The factoring agreement provides for an advance payment of 80 percent of the value of factored receivables and for guaranteed payment after three months from the date of purchasing the receivables. The advance carries a rate of interest of 16% p.a. compounded quarterly and the factoring commission is 1.5 percent of the value of factored receivables. Both the interest and commission are collected upfront.

a. Compute the amount actually made available to ABC Company.

b. Calculate the effective cost of funds made available to ABC Company.

c. Assume that the interest is collected in arrear and the commission is collected in advance. Calculate the effective cost of funds made available to ABC Limited.

**Solution**

a.

| | ($ in million) |
|---|---|
| Value of factored receivable (= 14/0.8) | 17.50 |
| Maximum permissible advance | 14.00 |
| Less: Commission @ 1.5 percent (= 17.5 x 0.015) | 0.26 |
| | 13.74 |
| Less: Discount charge (14 x 0.16 x 90/360) | 0.56 |
| Funds made available to ABC Company | 13.18 |

b. Discount charge expressed as a percentage of funds made available to ABC Company $\left(\frac{0.56}{13.18} \text{ x } 100\right)$ 4.25%

Therefore, the effective rate of interest is 4.25 percent per quarter. The annualized rate of interest = $[(1.0425)^4 - 1)] \text{ x } 100 = 18.11\%$

Put differently the annualized cost of funds made available to ABC Company is 18.11%

c.

| | |
|---|---|
| Maximum permissible advance | 14.00 |
| Less: Commission payable upfront (= 17.5 x 0.015) | 0.26 |
| Funds made available to ABC Company | 13.74 |
| Interest charge collected in arrear (= 14 x 0.16 x 90/360) | 0.56 |

Interest charge expressed as a percentage of funds made available

$= \frac{0.56}{13.74} \text{ x } 100 = 4.08\%$

Annualized interest cost = $[(1.0408)^4 - 1] \text{ x } 100 = 17.35\%$

Illustration 1 assumes that the factor provides an advance limited to 80 percent of the value of receivables factored. As a matter of fact, the factor never provides hundred percent finance. He maintains a margin called the 'factor reserve' to provide for disputes and deductions relating to the bills assigned to him.

## FORMS OF FACTORING

Depending upon the features built into the factoring transaction, there can be different forms of factoring arrangements. We shall discuss about the following forms:

a. Recourse factoring,

b. Non-recourse factoring,

c. Maturity factoring,
d. Advance factoring,
e. Invoice discounting,
f. Full factoring,
g. Bank participation factoring,
h. Supplier guarantee factoring, and
i. Cross-border factoring.

The following features are, of course, common to most of the factoring arrangements: (i) the factor is responsible for collection of receivables; and (ii) the factor maintains the sales ledger of the client.

The additional feature(s) built into the different types of factoring arrangements are discussed here:

## Recourse Factoring

The factor purchases the receivables on the condition that the loss arising on account of irrecoverable receivables will be borne by the client. For example, assume that a factor has advanced an amount of $2.4 mn against a receivable of $3 mn which turns out to be irrecoverable. Under a recourse factoring arrangement, the factor can recover the sum of $2.4 mn from the client. Put differently, under a recourse factoring arrangement, the factor has recourse to the client if the debt purchased turns out to be irrecoverable.

## Non-Recourse Factoring

As the name implies, the factor has no recourse to the client if the debt purchased turns out to be irrecoverable. Since the factor bears the losses arising on account of irrecoverable debts (receivables), the factor charges a higher commission (the additional commission is called the del credere commission). Also, the factor participates actively in the credit-granting process and decides/approves the credit lines extended to the customers of the client. While non-recourse factoring is the most common form of factoring in countries like the USA and the UK.

## Maturity Factoring

Under this type of factoring arrangement, the factor does not make any advance payment. The factor pays the client either on a guaranteed payment date or on the date of collection. The guaranteed payment date is usually fixed taking into account the previous ledger experience of the client and a period for slow collection after the due date of the invoice.

## Advance Factoring

Under this arrangement, the factor provides an advance varying between 75-85 percent of the value of receivables factored. The balance is paid upon collection or on the guaranteed payment date. As we have already seen, the factor charges interest from the date on which advance payment is made to the date of actual collection or the guaranteed payment date. The rate of interest is usually determined depending upon (i) the prevailing short-term rate of interest; and (ii) the client's financial standing and (iii) volume of turnover.

## Invoice Discounting

Strictly speaking, this is not a form of factoring because it does not carry the service elements of factoring. Under this arrangement, the factor provides a pre-payment to the client against the purchase of book debts and charges interest for the period spanning the date of pre-payment to the date of collection. The sales-ledger administration and collection are carried out by the client. The client provides the factor with periodical reports on the value of unpaid invoices and the ageing schedule of debts. This facility is usually kept confidential i.e., the customers (whose debts have been purchased by the factor) are not informed of the arrangement. Therefore, this arrangement is also referred as 'Confidential Factoring'.

A variant of the invoice discounting is the Protected Invoice Discounting arrangement where the factor bears the credit risk of the receivables purchased. Put differently, the factor purchases the debts without recourse but does not offer the services of sales-ledger administration and debt collection. Invoice discounting in general and protected invoice discounting in particular are offered to clients with a sound financial position and with no serious problem of debt collection and debt write-offs.

If the invoice discounting facility is not confidential in nature, the customers of the client are advised to make payment directly to the factor and this facility is referred to as 'Bulk Factoring'. The need for this facility arises when the factor finds that the client does not fulfill the criteria laid down for invoice discounting and requires the security associated with direct payments from the customers. Bulk factoring offered with a non-recourse feature is referred to as 'Agency Factoring' in some countries, because the client acts as an agent of the factor in collecting the debts.

## Full Factoring

A factoring arrangement which combines the features of non-recourse and advance factoring arrangements is called Full Factoring or Old Line Factoring. Put differently, full factoring provides the entire spectrum of services – collection, credit protection, sales-ledger administration and short-term finance.

## Bank Participation Factoring

This arrangement can be viewed as an extension of advance factoring. Under this arrangement, a commercial bank participates in the transaction by providing an advance to the client against the reserves maintained by the factor. For example, assume that a factor has advanced 80 percent of the value of factored receivables and the commercial bank provides an advance limited to 50 percent of the factor reserves. The client is required to fund only 10 percent of the investment in receivables, the balance 90 percent being provided by the factor and the commercial bank.

## Supplier Guarantee Factoring

This arrangement was developed by the American factors primarily to help their importers/distributors involved in executing import orders on behalf of their customers. The typical steps involved are as follows:

i. The customer places an import order with the distributor.

ii. The distributor seeks the approval of the factor for extending credit to the customer.

iii. On receiving the credit approval from the factor, the distributor makes arrangements for shipping the supplies directly to the customer.

iv. The factor guarantees payment to the foreign supplier in respect of the specific shipment. Upon shipment, he credits the account of the distributor and debits the account of the customer for an amount equal to the invoice value of the goods shipped plus distributor's commission.

v. Instead of making an advance payment to the distributor against the customer's account that has been factored, the factor pays the supplier directly for the invoice value of the goods shipped.

vi. The factor follows up with the customer, collects the amount due and makes the final payment to the distributor after deducting his commission and guarantee charges.

Thus, apart from offering the usual services, the factor guarantees payment to the supplier on behalf of his client (the distributor) thereby engendering greater confidence in supplier-distributor dealings.

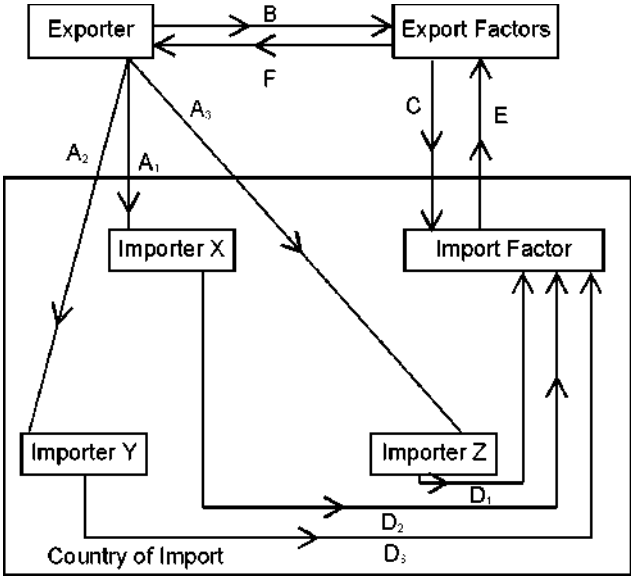
## Cross-border Factoring

The mechanics of Cross-border Factoring (also referred to as an international factoring or export factoring) is similar to domestic factoring except that there are usually four parties to the transaction – exporter, export factor, import factor and importer. (See Figure 2) Under this system of factoring referred to as the two-factor system of factoring, the exporter (the client) enters into a factoring agreement with the export factor domiciled in his country and assigns to him export receivables as and when they arise. The payment against the factored debts are made exactly in the same way as under a domestic factoring facility. If the sale value is denominated in the currency of the importer's country, the factor usually covers the exchange risk associated with the remittances.

The export factor enters into an arrangement with a factor based in the country where the importer resides (import factor) and contracts out the tasks of credit checking, sales ledgering and collection for an agreed fee. The debt is usually not assigned to the import factor.

The relationship between the import factor and the importer (the customer) is clarified by a notation on the sales invoice that the payment is to be made directly to the import factor. The import factor collects the amount from the customer and remits it to the export factor.

**Figure 2: Cross-border Factoring with Two Factors**




**Explanatory Notes (for figure 2):**

i. $A_1$, $A_2$ and $A_3$ — Exporter sells goods on open-credit.

ii. B — Export receivables are factored on a non-recourse basis. The relevant invoices, bills of lading and other supporting documents are delivered to the export factor.

iii. C — Export factor carries out the work of credit checking, sales ledger accounting and collection to the Import Factor with respect to the customers located in the country of imports.

iv. $D_1$, $D_2$ and $D_3$ — Import factor collects the money due from the customers concerned.

v. E — Import factor effects payments to the export factor on assignment or maturity or collection as per the terms agreed upon between them.

vi. F — Export factor effects payments to the exporter upon assignment or maturity or collection depending upon the type of factoring arrangement between them.

Thus, the two factor system results in two separate but linked agreements: One between the client (the exporter) and the export factor and the other between the export factor and the import factor. Usually the export and import factors belong to a formal chain of factors with well defined rules governing the conduct of business between their offices. Otherwise, the export and import factors evolve an *ad hoc* relationship to conduct specific transactions.

Although cross-border factoring employs the two-factor system, the exporter (the client) is required to deal with only one factor residing in his country and the factoring formalities to be gone through are more or less identical to those governing domestic operations. At the same time, the credit-rating of the importer and collection of receivables are carried out by a factor who can speak the language of the importer (the customer) and who is thoroughly conversant with the business practices and commercial procedures of the customer's country. Obviously, the two factor arrangement tends to be more expensive than an arrangement where only one factor – the export factor or the import factor is employed. But then the advantages of the two factor system seem to outweigh the extra-cost consideration and it remains as the most popular form of Cross-border Factoring.

## FACTORING VIS-Á-VIS BILLS DISCOUNTING

While factoring is of recent origin, most readers will be familiar with the bill discounting arrangement offered by commercial banks and finance companies. The bill discounting arrangement works as follows: The bill or the bill of exchange arises out of a credit sales transaction. The seller of the goods (drawer) draws a bill on the buyer which may be payable on demand or after a usance period not exceeding ninety days. The bill is accepted by the buyer (drawee) and/or by the buyer's bank. Thereafter, the seller approaches his bank or the bank of the buyer or a finance company to discount the bill.

The bank or the finance company discounting bills prefers to discount bills which are accepted by the buyer under a letter of credit opened by the buyer's bank referred to as L/C (Letter of Credit) backed bills as opposed to bills which are not backed by L/Cs referred to as Clean Bills. The finance company discounts the bill upfront. Put differently, the discount charge is payable in advance which means that the effective rate of interest is higher than the quoted rate. The rate of discount varies from time to time depending upon the movements in the short-term interest rate. The rate of discount applicable to clean bills is usually higher than the rate applicable to backed bills.

### Illustration 2

Assured Finance firm discounts the bills of its clients at the following rates:

L/C backed bill – 21% p.a.

Clean bill – 24% p.a.

Calculate the effective rates of interest implied by (a) A L/C backed bill with a usance period of 90 days and (b) A clean bill with a usance period of 60 days.

**Solution**

a. Value of the L/C backed bill = \$1,000

Discount charge = $1{,}000 \times 0.21 \times \frac{90}{360} = \$52.5$

Value received by the client = \$947.5

Effective rate of interest per quarter = $\frac{52.5}{947.5} \times 100 = 5.54\%$

Effective rate of interest per annum = $[(1.0554)^4 - 1] \times 100 = 24.07\%$

b. The reader can verify that the effective rate of interest on the clean bill is 28.54% per annum.

We can see that advance factoring and bill discounting are similar to the extent that both make available finance against the accounts receivables held by the client. There are, however, some important differences between the two arrangements which are listed below:

1. Bill discounting is transaction-oriented in the sense that each bill is separately assessed and discounted by the financial intermediary whereas factoring involves a pre-payment made against all unpaid and not due invoices purchased by the factor.
2. In a bill discounting arrangement, the financial intermediary concerned does not take on the responsibilities of sales ledger administration and collection of debts which the factor does under the factoring arrangement.
3. In bill discounting, unlike most forms of factoring, no notice of assignment is provided to the customers of the client.
4. The bill discounting arrangement is usually with recourse to the client, whereas a factoring arrangement can be of the non-recourse type.
5. From the financial intermediary's angle, the bills that are discounted can be rediscounted several times before they mature for payment. The last holder of the bill receives the full value of the bill. On the other hand, the factor cannot rediscount the receivables purchased under an advance factoring arrangement.

## FACTORING VIS-Á-VIS CREDIT INSURANCE

In countries where credit insurance is in popular use, a firm can insure its receivables against credit risk. While the insurance company does not help in the collection of receivables, it settles the claims arising on account of insured accounts which have turned delinquent. (An account is considered to be delinquent not only if the customer actually becomes insolvent, but also if an account has reached a particular point in being overdue). Thereafter it takes over the delinquent accounts and makes vigorous efforts to collect. To ensure that the insured does not throw caution to the winds by adopting liberal credit standards, the insurance company specifies the maximum amount it will cover for accounts with a particular credit-rating. For example, in the USA, the credit insurance companies rely on the ratings provided by Dun & Bradstreet for this purpose.

Thus, we find that credit insurance is similar to non-recourse factoring in so far as credit protection aspect is concerned. Therefore, firms which want protection only against bad debts but does not want help with regard to collection and finance may find credit insurance to be more cost-effective than non-recourse factoring.

## FACTORING VIS-Á-VIS FORFAITING

The processes of factoring and forfaiting are similar in some ways. But there are also certain differences between the two. Let us take a look at these differences:

**Table 1: Factoring vs. Forfaiting**

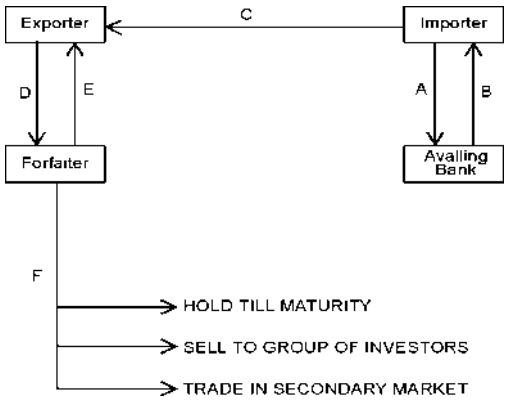
| Basis of difference | Factoring | Forfaiting |
|---|---|---|
| Extent of Finance | Usually 80% of the value of the invoice is considered for advance | 100% Financing |
| Credit-worthiness | Factor does the credit rating of the counterparty in case of a non-recourse factoring transaction | The forfaiting bank relies on the credibility of the avalling bank |
| Services Provided | Day-to-day administration of sales and other allied services are provided | No services are provided |
| Maturity | Advances are short-term in nature | Advances are generally medium-term |

In international trade transactions, forfaiting is a common form of financing export-related receivables. Under this arrangement:

1. The exporter sells the goods to the importer on a deferred payment basis spread over 3-5 years.
2. The importer draws a series of promissory notes in favor of the exporter for the payments to be made inclusive of interest charges.
3. The promissory notes are avalled or guaranteed by a reputed international bank which can also be the importer's banker. (An aval is an endorsement on the promissory notes by the guaranteeing bank that it covers any default of payment by the buyer).
4. The exporter sells the avalled notes to a forfaiter (which can be exporter's banker) at a discount and without recourse. The discount rate applied by the forfaiter will depend upon the terms of the promissory notes, the currencies in which they are denominated, the credit rating of the avalling bank, the country risk of the importer, and the prevailing market rate of interest on medium-term loans.
5. The forfaiter may hold these notes till maturity or sell these notes to groups of investors interested in taking up such high-yielding unsecured paper.

The mechanics of forfaiting is graphically presented in Figure 3.

**Figure 3: Mechanics of Forfaiting**



**Explanatory Notes (for Figure 3):**

A. Promissory notes sent for avalling to the importer's bank.

B. Avalled notes returned to the importer.

C. Avalled notes sent to exporter.

D. Avalled notes sold at a discount to a forfaiter on a non-recourse basis.

E. Exporter obtains finance.

F. Forfaiter holds the notes till maturity or securitizes these notes and sells the short-term paper either to a group of investors or to investors at large in the secondary market.

Thus, we find that a forfaiting transaction resembles a cross-border factoring transaction with features of non-recourse and advance payment. But then the two transactions are not identical. The important differences are:

1. In a factoring transaction, the factor does not provide hundred percent finance; he maintains a factor reserve. On the other hand, in a forfaiting transaction the forfaiter discounts the entire value of the promissory notes.
2. In a non-recourse factoring transaction, the factor participates in the credit-granting decision of the exporter (the client) whereas in a forfaiting transaction, the forfaiter relies on the unconditional and irrevocable guarantee provided by the avalling bank. So he is more concerned about the financial standing of the avalling bank than with the credit standards applied by the exporter.
3. While the factor takes on the responsibilities of receivables accounting, monitoring and collection, the forfaiter does not assume any of these responsibilities.
4. The factor purchases receivables which are of a short maturity period whereas the forfaiter buys bills/promissory notes arising out of deferred credit transactions.

## FUNCTIONS OF A FACTOR

From our discussion of the different forms of factoring we find that a factor offers one or more of the following services:

a. Collection.

b. Sales-ledger administration.

c. Credit protection.

d. Short-term funding.

e. Advisory services.

This section provides a brief description of each of these services.

### Collection

Collection of receivables can be considered as the most important function of a factor for two reasons. First, the clients' receivables are the only productive assets of the factor. Therefore, a lax collection program will impair the profitability of the factor's operations. Second, any incorrect handling of the collection activity can prejudice the relationship between the client and his customer which in turn is detrimental to the interests of both the client and the customer – the client loses potential business and the factor loses potential commission.

A typical collection program of the factor consists of the following steps:

1. The factor sends statements of accounts to the customers prior to the due dates and routine collection letters around the due dates.

2. If a debt reaches a certain point in being overdue, the factor initiates personal collection efforts which can be in the form of a personal letter, telephonic reminder or visit to the premises of the customer.
3. The factor resorts to legal action if the debt is irrecoverable by other means.

While a factor is not required to consult the client with regard to the collection procedures used, many factors do consult the client particularly to ascertain the length of time that can be allowed to elapse before any irrevocable action such as legal action is initiated. In normal practice, any debt which is outstanding for a period of more than ninety days is regarded as a subject for legal action.

Sometimes the customer can refuse to pay on account of an unresolved dispute relating to the quantity or quality of goods supplied or on account of an inordinate delay in delivery and so on. Under such circumstances, the factor draws the attention of the client and allows a specific time frame to clear the dispute. If the dispute is not settled within the specified time, the factor may take recourse to the client's warranty that the debts sold are valid and undisputed and release himself from the obligation to collect the account.

## Sales-Ledger Administration

The factor maintains a sales ledger for each client. The ledger is maintained under one of the following methods – the Open-item method or the Balancing method. Under the open-item method, each receipt is matched against the specific invoice and therefore the customer's account clearly reflects the various open invoices which are outstanding on any given date. Under the Balancing method, the transactions are recorded in the chronological order, the customer's account is balanced periodically and the net amount outstanding is carried forward.

When accounts are maintained manually the balancing method is easy to operate. However, the open-item method permits better control because collection efforts can be focused on identifiable debts. Since most of the factors employ mechanized accounting systems for sales-ledger maintenance, the open-item method is widely followed. In addition to the sales-ledger, the factor also maintains a customer-wise record of payments spread over a period of time so that any change in the pattern of payment can be easily picked up.

## Credit Protection

When receivables are purchased under a non-recourse factoring arrangement, the factor establishes a line of credit or defines the credit limit up to which the client can sell to the customer. The credit line or limit approved for each customer will depend upon the customer's financial position, his past payment record and the value of goods sold by the client to the customer.

Operationally, the monitoring of the credit utilized by a customer poses some problem to the client because he has turned over the ledgering work to the factor. To overcome this difficulty, some factors define the monthly sales turnover for each customer which will be automatically covered by the approved credit limit. For example, if the approved credit limit for a customer is \$3 million and the average collection period is say 45 days, sales up to \$2 mn $\left(\frac{3 \times 30}{45}\right)$ per month will be automatically covered. Instead of setting a limit on the monthly sales turnover, some factors provide periodic reports to their clients on customer-wise outstandings and ageing schedules to enable the client to assess the extent of credit utilization before any major sale is made.

To assess the creditworthiness of a customer, the factor relies on a number of sources. They include:

i. Credit ratings and reports
ii. Bank reports and Trade references
iii. Analysis of financial statements
iv. Prior collection experience
v. Customer visits.

## CREDIT RATING AND REPORTS

To evaluate the customers of his client, the factor relies primarily on the credit ratings made available by professional rating agencies like the Dun & Bradstreet (D&B) Inc. in the USA. Such agencies analyze the trade creditworthiness of a large number of business firms and disseminate their findings in the forms of credit ratings and reports. The D&B ratings, for example, give the user an indication of the estimated size of net worth and a credit appraisal for companies of a particular size, ranging from "High" to "Limited". The key to D&B ratings is presented in Table 2.

**Table 2: New Key to Ratings**

| | Estimated Financial Strength ($) | Composite Credit Appraisal | | | |
|---|---|---|---|---|---|
| | | High | Good | Fair | Limited |
| 5A | Over 50,000,000 | 1 | 2 | 3 | 4 |
| 4A | 10,000,000 to 50,000,000 | 1 | 2 | 3 | 4 |
| 3A | 1,000,000 to 10,000,000 | 1 | 2 | 3 | 4 |
| 2A | 750,000 to 1,000,000 | 1 | 2 | 3 | 4 |
| 1A | 500,000 to 750,000 | 1 | 2 | 3 | 4 |
| BA | 300,000 to 500,000 | 1 | 2 | 3 | 4 |
| BB | 200,000 to 300,000 | 1 | 2 | 3 | 4 |
| CB | 125,000 to 200,000 | 1 | 2 | 3 | 4 |
| CC | 75,000 to 125,000 | 1 | 2 | 3 | 4 |
| DC | 50,000 to 75,000 | 1 | 2 | 3 | 4 |
| DD | 35,000 to 50,000 | 1 | 2 | 3 | 4 |
| EE | 20,000 to 35,000 | 1 | 2 | 3 | 4 |
| FF | 10,000 to 20,000 | 1 | 2 | 3 | 4 |
| GG | 5,000 to 10,000 | 1 | 2 | 3 | 4 |
| HH | Up to 5,000 | 1 | 2 | 3 | 4 |

*Source: New Key to Ratings, Dun & Bradstreet.*

The composite credit appraisal done by D&B takes into account the character, capacity and the capital of the rated entity. A "High" composite credit appraisal is an indicator of (a) sound legal constituency; (b) track-record of three years or more; (c) well-balanced management; (d) no criticized failures; (e) obligations being retired according to agreements; and (f) healthy financial position. Similarly, a "good" rating would mean that all the aforesaid conditions are met but to a somewhat less although still satisfactory degree.

In addition to its range service, D&B provides credit reports containing a brief history of the company and its principal officers, the nature of business, certain financial information, and a track check of suppliers – the length of their experience with the company and whether payments are prompt. Of course, the quality of the credit reports will vary with the amount of information available externally and the willingness of the company being checked to co-operate with the reporter.

## BANK REPORTS AND TRADE REFERENCES

One of the standard means of credit investigation is to seek information from the banker of the customer in terms of the average cash balances maintained, the loan accommodations sought for and the commitment and capacity demonstrated by the customer. If the factor is a subsidiary of a commercial bank, it can get more candid information through this route than if it is not because banks generally are more willing to share such information with other banks or with their affiliates.

### ANALYSIS OF FINANCIAL STATEMENTS

Financial statements for the most recent period preferably audited ones form an important source of information for credit analysis. It has been often observed that there is often a correlation between a firm's refusal to provide financial statements and its weak financial position. The factor usually analyzes the trends in the following ratios to make an assessment of the capacity to pay:

$$\text{Current Ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

$$\text{Quick Ratio} = \frac{\text{Current assets less inventory}}{\text{Current liabilities}}$$

$$\text{Net Profit Margin} = \frac{\text{Profit after tax}}{\text{Sales}}$$

$$\text{ROI} = \frac{\text{Profit before interest and taxes}}{\text{Total assets}}$$

An inter firm comparison or comparison of these ratios with the industry averages can provide useful insights into the liquidity and profitability of the customer's business.

#### Prior Collection Experience

If the factor has had prior trading experience with the customer, he can review the trend of credit taken by the customer and the promptness with which payments were made in the past and relate the experience to the present assessment.

### CUSTOMER VISITS

A practice that is popular in USA and gaining acceptance elsewhere is to visit the customer with the client's consent in order to obtain more information about the present trading volumes and future prospects. This enables the factor to assess if the credit requests are reasonable in relation to the business conducted.

## Short-term Funding

We said that a factor usually pays for a part of the debts purchased immediately and charges interest on the part payment made for the period between the date of purchase and the collection date/guaranteed payment date. We also said that the factor does not provide hundred percent finance and maintains a margin called the factor reserve. The factor reserve is a safety net for protecting the factor against contingencies such as sales returns, disputed debts, etc.

The factor is usually wary of financing recourse receivables because he does not participate in the credit-granting decision. Therefore, he prefers to purchase such receivables with the clear understanding that no advance payment will be made against such receivables. However, some factors provide an advance against all receivables purchased but closely monitor the outstandings in respect of recourse receivables so as to initiate necessary corrective action if such outstandings tend to get out of control.

## Advisory Services

These services are spin-offs of the close relationship that develops between a factor and the client. Given the specialized knowledge of the factor about the market(s) in which the client operates, he is in a better position to advise the client on the customers' perceptions of the firm's products, changes called for in the marketing strategies, emerging trends and ways of responding to these trends. In practice, a senior executive of the factoring organization operates as an Accounts Executive for the client not only to carry out the usual services but also to provide such advisory services as the client may require.

Another incidental service which the factor provides is an audit of the procedures followed for invoicing, delivery and dealing with sales returns. The factor regularly audits these procedures in order to minimize the problems at the time of collection. From the client's angle, such an audit reveals the weak links which have to be strengthened and areas where the existing procedures have to be modified or toned-up. For example, the audit carried out by the factor may reveal that abnormal sales returns experienced by the client are on account of inadequate quality control procedures; or it might reveal that disputes arise when customers do not confirm in writing their acceptance of any variation in the sales contracts.

In addition, the factor can help the client in areas which fall outside the purview of the factoring services. For example, if the factoring organization happens to be the subsidiary of a commercial bank, it may provide an introduction to the credit department of the bank or to the other subsidiaries of the bank which are involved in providing other financial services like leasing, hire purchase or merchant banking. Given the in-depth knowledge of the factor about the character and capacity of the client, the recommendation or introduction provided by the factor considerably strengthens the client's position in dealing with these financial intermediaries.

## LEGAL ASPECTS OF FACTORING

The legal relationship between a factor and the client is governed by the provisions of the factoring agreement or the master agreement. Some of the salient features of the agreement are as follows:

1. The client gives an undertaking to sell its receivables and the factor agrees to purchase the same subject to the terms and conditions mentioned in the agreement.
2. The client warranties that the debts are valid, enforceable, undisputed and recoverable. The client also undertakes to settle problems of dispute, damage and deductions relating to the bills assigned to the factor.
3. The client agrees that the bills purchased by the factor on a non-recourse basis (called approved bills) will arise only from transactions specifically approved by the factor or those falling within the credit limits authorized by the factor.
4. The client agrees to serve a notice of assignment in the prescribed form to all customers whose receivables have been factored.
5. The client agrees to provide copies of all invoices, credit notes, etc., relating to the factored accounts to the factor and to remit money received by the client against the factored invoices to the client.
6. The factor acquires the power of attorney to assign the debts further and to draw negotiable instruments in respect of such debts.
7. The time frame for the agreement and the mode of termination are specified.

As between the factor and the customer, the legal status of the factor is that of an assignee. Therefore, the customer has the same set of defenses against the factor as he would have against the client. The customer whose account has been factored and has been notified of the assignment is under a legal obligation to remit the money due directly to the factor. Consequently, a customer who continues to make such payments directly to the client is not discharged from his obligation to pay the factor until and unless the client remits the amount to the factor.

While we are on this subject, we will also discuss the relationship between the factor and the client's bank. Suppose a firm which wants to avail of advance factoring facility has been financing its book debts through bank finance (in the form of bill discounting or overdraft) prior to the factoring arrangement. Before factoring the receivables, the factor will require a Letter of Disclaimer from the

bank concerned. The Letter of Disclaimer will indicate that with effect from the date of letter, the bank will not create a charge against the receivables. Obviously, this means that the bank will not provide post-sale finance because the factor provides the same. This avoids the possibility of double-financing the receivables.

## EVALUATION OF FACTORING

From the client's point of view, factoring offers the following benefits:

1. Factoring in general and maturity factoring in particular reduces the uncertainty associated with collections and the corresponding cash inflows. This reduces the cash float and improves the velocity of current assets turnover i.e., the ratio of net sales to gross current assets.
2. Since the factor assumes the responsibility for collection and credit administration, the marketing department of the firm concerned can sharply focus its attention and efforts on improving sales. In the case of small-scale units, it is often found that the promoter is a technocrat or a marketing-oriented person with little or no exposure to the finer aspects of credit management. This results in sub-optimal investment in receivables and undertaking of credit risks on a haphazard basis. By utilizing the services of a factor, the promoter can improve the efficiency of receivables management.
3. As noted in an earlier section, advance factoring serves as a source of working capital finance. There is however an important difference between this arrangement and the other forms of funding like cash credit or public deposits. The difference is that the other forms of current asset financing reduce the current ratio while advance factoring maintains the current asset ratio. To illustrate this aspect, Panel-A of Table 3 presents the pre and post balance sheet of a firm availing of advance factoring arrangement. Panel-B of the table presents the pre and post balance sheets of an identical firm availing of bank overdraft for funding its investment in receivables. We have assumed that under either of these arrangements, the finance is restricted to 80 percent of the value of receivables.

**Table 3: Impact of Advance Factoring and Bank Overdraft on Liquidity Rations**

**Panel A**

1. **Balance Sheet as on March 31, 2007 (Amount in $ mn)**

| Liabilities | | Assets | |
|---|---|---|---|
| Net worth | 45 | Fixed Assets | 30 |
| Long-term Debt | 15 | Inventory | 25 |
| Current Liabilities | 45 | Receivables | 45 |
| | | Cash | 5 |
| | 105 | | 105 |

Current Ratio = $\frac{75}{45}$ = 1.67 : 1

2. **Firm Opts for Factoring**

Balance Sheet as on March 31, 2007 (Amount in $ mn)

| Liabilities | | Assets | |
|---|---|---|---|
| Net worth | 45 | Fixed Assets | 30 |
| Long-term Debt | 15 | Inventory | 25 |
| Current Liabilities | 45 | Factor Dues | 9 |
| | | Cash | 41 |
| | 105 | | 105 |

Current Ratio = $\frac{75}{45}$ = 1.67 : 1

**Panel B**

1. **Balance Sheet as on March 31, 2007 (Amount in $ mn)**

| Liabilities | | Assets | |
|---|---|---|---|
| Net worth | 45 | Fixed Assets | 30 |
| Long-term Debt | 15 | Inventory | 25 |
| Current Liabilities | 45 | Receivables | 45 |
| | | Cash | 5 |
| | 105 | | 105 |

Current Ratio = 1.67 : 1

2. **Firm Opts for Bank Overdraft**

Balance Sheet as on March 31, 2007 (Amount in $ mn)

| Liabilities | | Assets | |
|---|---|---|---|
| Net worth | 45 | Fixed Assets | 30 |
| Long-term Debt | 15 | Inventory | 25 |
| Bank Borrowings | 36 | Receivables | 45 |
| Current Liabilities | 45 | Cash | 41 |
| | 141 | | 141 |

Current Ratio = $\frac{111}{81}$ = 1.37 : 1

3. **Firm utilizes additional cash to reduce its current liabilities by $30 mn and increase inventory by $6 mn. The post-utilization balance sheet will be as follows:**

**Balance Sheet as on March 31, 2007**

**(Amount in $ mn)**

| Liabilities | | Assets | |
|---|---|---|---|
| Net worth | 45 | Fixed Assets | 30 |
| Long-term Debt | 15 | Inventory | 31 |
| Current Liabilities | 15 | Factor Dues | 9 |
| | | Cash | 5 |
| | 75 | | 75 |

Current Ratio= $\frac{45}{15}$ = 3 : 1

3. **Firm utilizes additional cash to reduce its current liabilities by $30 mn and increase inventory by $6 mn. The post-utilization balance sheet will be as follows:**

**Balance Sheet as on March 31, 2007**

**(Amount in $ mn)**

| Liabilities | | Assets | |
|---|---|---|---|
| Net worth | 45 | Fixed Assets | 30 |
| Long-term Debt | 15 | Inventory | 31 |
| Bank Borrowings | 36 | Receivables | 45 |
| Current Liabilities | 15 | Cash | 5 |
| | 111 | | 111 |

Current Ratio = $\frac{81}{51}$ = 1.59 : 1

The table reveals the following:

1. Advance factoring *per se* does not alter the current ratio of the firm. This is because the arrangement does not result in the creation of a current liability. It simply rearranges the current assets by replacing receivables with cash and factor dues. Of course, the current ratio can be increased by utilizing the additional cash in the manner specified in the table. In fact, the current ratio can be increased to a maximum of 4.33 : 1 by utilizing the entire factor advance to reduce the current liabilities. At the other extreme, the firm can choose to keep the current ratio at 1.67 : 1 by not utilizing the additional cash or by utilizing it for increasing the investment in inventory.
2. The impact of bank overdraft on the current ratio of the firm is obvious. Prior to the utilization of cash in the manner specified, the current ratio was 1.37:1 which has been improved to 1.59 : 1 by utilizing a major portion of the additional cash to reduce the current liabilities. The reader can verify that the maximum current ratio of 1.67 : 1 can be reached by utilizing the entire bank overdraft to reduce the current liabilities.
3. Is factoring advantageous to firms which can afford to have a full fledged credit department? The answer is 'Yes' provided the factor can carry out the functions of the credit department more efficiently. For example, take the case of Walter E Hellers and Company, a Chicago based factoring organization. Its clientele include a number of large-scale manufacturers of synthetic-fibre carpets because the factor has a specialized knowledge of the payment patterns of a large cross-section of the customers of this industry and is able to carry out the functions of collection and credit protection more efficiently.

While, there are distinct advantages in factoring, the service carries a price. Therefore, a firm which has been managing its receivables in house must necessarily weigh the benefits against the costs before opting for the factoring arrangement. Illustration 2 explains the framework that can be employed for this purpose.

## Illustration 3

Innovative Factors, the subsidiary of Fair Bank offers the following fund-based facilities:

| | Facility | Recourse Factoring | Non-Recourse Factoring |
|---|---|---|---|
| A. | Discount Charge (payable upfront) | 19% p.a. | 19% p.a. |
| B. | Reserve | 20% | 20% |
| C. | Commission (payable upfront) | 1.5% | 3.5% |

The finance manager of Varun Textiles has recently approached Innovative Factors for factoring the receivables. After a careful analysis of the sales ledger of Varun Textiles, the Vice President (Operations) of Innovative Factors agrees for a guaranteed payment period of 60 days. The finance manager is not clear about the type of facility he should opt for and seeks your help in this regard. He provides you with the following additional information:

1. The firm sells on terms 2/10 net 60. On an average 40% of the customers pay on the tenth day and avail the discount; the remaining customers pay, on average, 90 days after the invoice date.
2. The bad debt losses amount to 1.5% of the sales turnover.
3. The sales executives are responsible for following up collections and they, on average, spend 20% of their time on collection efforts. A subjective (and conservative) assessment is that the firm can increase its annual sales by $20 mn if the sales executives are relieved from collection responsibilities. The gross margin on sales is 20% and the projected sales turnover for the following year (without considering the increase of $20 mn) is $240 mn.
4. By hiving off sales-ledger administration and credit monitoring, the firm can save administrative overheads to the tune of $1 mn per annum.
5. As of now, the firm has been financing its investment in receivables through a mix of bank finance and long-term funds in the ratio of 2:1. The effective rate of interest on bank finance is 18% p.a. and the cost of long-term funds is around 24% p.a. (pre-tax).

## Solution

The relevant costs associated with the in-house management of receivables and the alternative forms of factoring are listed below:

**Relevant Costs of In-house Management of Receivables**

| | | | |
|---|---|---|---|
| A. | Cash discount | = | $240 mn x 0.02 x 0.4 |
| | | = | $1.92 mn |
| | Average collection period | = | (10 x 0.4) + (90 x 0.6) |
| | | = | 58 days |
| | Cost of bank finance | = | $240 mnx 2/3 x 58/360 x 0.18 |
| | | = | $4.64 mn |
| | Cost of long-term funds | = | $240 mnx 1/3 x 58/360 x 0.24 |
| | | = | $3.09 mn |
| B. | Cost of funds invested in receivables | = | $7.73 mn |
| C. | Bad debt loss | = | $240 mnx 0.015 |
| | | = | $3.6 mn |
| D. | Contribution lost on foregone sales | = | $20 mn x 0.2 = $4 mn |
| E. | Avoidable costs of sales ledger administration and credit monitoring | = | $1 mn |

**Relevant Costs of Recourse Factoring**

| | | | |
|---|---|---|---|
| F. | Factoring commission | = | $260 mn x 0.015 = $3.9 mn |
| G. | Discount charge | = | $0.8 \times 260 \times 0.19 \times \frac{60}{360}$ |
| | | = | $6.59 mn |
| H. | Cost of long-term funds invested in receivables | = | $0.2 \times 260 \times 0.24 \times \frac{60}{360}$ |
| | | = | $2.08 mn |

**Relevant Costs of Non-Recourse Factoring**

I. Factoring commission = \$260 mn x 0.035
= \$9.1 mn

J. Discount charge = 0.8 x \$260 mn x 0.19 x 60/360
= \$6.59 mn

K. Cost of long-term funds invested in receivable = 0.2 x \$260 mn x 0.24 x 60/360
= \$2.08 mn

**Cost-Benefit Analysis of Recourse Factoring**

L. Benefits associated with recourse factoring = A + B + D + E = \$14.65 mn

M. Costs associated with recourse factoring = F + G + H = \$12.57 mn

N. Net Benefit = L – M = \$2.08 mn

**Cost-Benefit Analysis of Non-Recourse Factoring**

O. Benefits associated with non-recourse factoring = A + B + C + D + E = \$18.25 mn

P. Costs associated with non-recourse factoring = I + J + K = \$17.77 mn

Q. Net Benefit = O – P = \$0.48 mn

Since the net benefit associated with recourse factoring is higher than that of non-recourse factoring, the firm is advised to opt for recourse factoring.

## BENEFITS OF FACTORING

Factoring, a credit cum collection facility provides instant cash against credit sales. Improved cash flow leads to more profits and growth. While a Factor provides related financing and services only, a banker renders comprehensive financing.

However, factoring as a financial option against receivables scores over bank finance on many counts. We summarize below the benefits of factoring vis-á-vis bank finance as under:

**Table 5**

| S. No. | Area | Factors | Bank |
|---|---|---|---|
| 1. | Funding | Up to 80%<br>Normally 50% | |
| 2. | Availability of finance | Instant against each invoice akin to cash sales | Periodically (Monthly/ Fortnightly) No DP for intermediate invoice |
| 3. | Grace period | Up to 60 days for payment | Nil |
| 4. | Sanction Response time | Very Fast (Within 3-4 days) | Normal (Too many tiers 15 days – 3 months) |
| 5. | Delayed Payments | i. Finance continued up to grade period<br>ii. No over due interest up to grade period | i. Finance withdrawn on due date (DP reduced)<br>ii. OD interest charged for irregular amount |
| 6. | Collection | In Built (Collection Agents employed) | Not Done |

| S. No. | Area | Factors | Bank |
|---|---|---|---|
| 7. | Collection time | Very Fast (Branches/ Collection Agents advise payments by fax) | Takes time (Collection of Cheques) |
| 8. | Credit Period | Market related and flexible approach – up to 150 days | Generally, uniform – 50-90 days only. |
| 9. | Customer Evaluation | Customers evaluated and sublimits fixed (Indirect Credit Protection) | No such exercise |
| 10. | Follow-up of receivables | Closely followed-up | No such service |
| 11. | Computerization | Total | Partial (depends on Br.) |
| 12. | Receivables based services | Sales Ledger Administration, MIS Data furnished (Age wise break-up, over dues statement, etc. | No such services Financing alone done |
| 13. | Receivables of Associates | Selectively Factored | Not financed |
| 14. | Bifurcation of Limits | No Bifurcation like CC account | Higher limits are bifurcated to CC and Demand Loan |
| 15. | Submission of Returns | Stock/ Receivable statements, select monthly operational data, Financial Follow-up reports need not be submitted | Financial Follow-up Reports, etc., should be submitted |

We give below some of the other important benefits arising from factoring services to:

**Table 5**

| **Clients (units availing of factoring services)** Substantial funds up to 80% of factored. | **Customers (on whom invoices are drawn)** There is no need to accept any bills. Only invoices duly assigned for payment to the factor, are drawn. | **Banks** Factoring facility extended is within the Assessed bank finance to the clients. Over financing is thus guarded against. |
|---|---|---|
| Since the factor will be handling sales ledger administration, debt collection, etc. the promoter will be free to concentrate on production, marketing, etc. | Adequate credit period is given for payment of assigned debts. | Credit sales of clients are closest monitored by the Factor and the proceeds are routed the banks, through the clients.' |

## FORFAITING

Forfaiting is a form of trade financing undertaken to facilitate export transactions. The process of forfaiting thus has a lot of significance as it undertakes to solve the cash flow problems of the party taking the benefit of factoring. In a forfaiting transaction, the exporter surrenders his right for claiming the payment for services rendered or goods supplied to the importer in favor of the forfaiter. A deed is prepared stating the same and the exporter receives cash payment from the facilitator. All the transactions of forfaiting are performed with the support of a

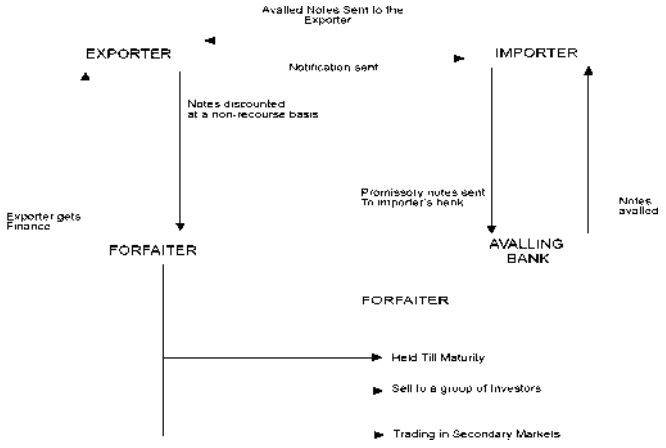
bank, which assumes the default risk possessed by the importer. The exporter before extending finance for a forfaiting transaction looks into several critical aspects of the underlying goods or commodity. For example, the bank would pay special attention towards the durability/perish ability nature of the goods, authentication of the product (date of manufacturing, product code, etc.), packaging arrangements and other precautions adopted during the stage of shipment etc. After these checks and verifications, the banker provides the exporter with the funds. In other words, the forfaiting transaction helps an exporter with instant cash and eliminates his cash flow problems.

Forfaiting is a relatively new concept. It is a specialized form of factoring, which is undertaken on export transactions on a non-recourse basis. This, however, does not mean that factoring and forfaiting are one and the same type of trade financing. First, let us have a detailed look at the mechanism of factoring before we discuss the differences between factoring and forfaiting.

## Operating Procedures Associated with Forfaiting

The major parties around whom, a transaction of Forfaiting revolves are: An exporter, an importer, a domestic bank, a foreign bank and a primary forfaiter. A primary forfaiter is a financial entity or an individual who does a contract of forfaiting with the exporter and sells the payments of the importer. There is also a secondary forfaiter too, who is a person or an intermediary who purchases the securities from the primary forfaiter and sells them in the secondary market. The act of the secondary forfaiter helps in the growth of the secondary market activities of the documents involved in a typical forfaiting transaction. The process of forfaiting gets underway the moment an exporter asks for quotations from the overseas buyer on the issues of price, delivery, interest structure, currency involved etc. Once the exporter is satisfied with the data received/quotation he approaches the Export Bank, furnishes the name of the overseas party, name of the country, description of the goods, order details, base price, payback period and the details of the export agency who will facilitate the transaction for the exporter. To make a complete transaction of forfaiting, the forfaiter asks for the details of the banker of the overseas importer. The overseas banker accepts and validates the documents of the transaction. This is known as the banker's co-acceptance. The Co-acceptance serves as a yardstick for the forfaiter as to the credit quality and the marketability of the instruments accepted. Export Bank then collects from the overseas forfaiting agencies the representative quotes on rates of discount, documentation charges and the commitment charges and informs the same to the exporter. If the terms are acceptable for the exporter, he requests the Export Bank to obtain a firm quote from the forfaiter. The exporter initiates a contract with the help of Export Bank with the overseas forfaiting agency. On execution of the deal, Export Bank issues a formal certificate to the party in domestic country. Subsequently, the exporter ships the goods as per the specification.

**Figure 4: Forfaiting**



With the shipment, the exporter's bank in the domestic country sends the relevant documents to the importer's bank. The importer's bank supplies them to the importer when the importer produces the avalized promissory notes to the bank. In this context let us discuss what avallization is all about. Bill of exchanges in forfaiting transactions are backed by the Co-acceptance of the banker of the foreign country, or in other words the banker of the importer. The Co-acceptance is also known as availization. After the submission of the documents they are sent to the exporter by the bank. The domestic exporter has to endorse the note with "Without Recourse" clause. Without recourse debt is a kind of debt instruments on which the right of recourse (or, reverting in case of a difficulty in collection back to the originator) has been surrendered by the buyer. These without recourse notes are sent back to the forfaiting agency by the Export Bank. On receipt of these papers the forfaiting agency, after verifying the signature of the avail releases payments at a discounted value in consultation with the Export Bank. The transaction is done through the nostro account of the exporter's bank in the country where the forfaiting agency is located. After the overseas bank receives the proceeds, it transfers them to the exporter. All these are performed at the instructions given by the Export Bank. Immediately after the inward remittance of the funds, the exporter is issued a Certificate of foreign inward remittance. On maturity of the Bills of Exchange or the Promissory notes, the forfaiting agency presents certain documents to the Co-acceptor for payments. The documents, which are presented at this time, are commercial contract between the foreign buyer and the domestic exporter, evidence of delivery of goods by the exporter to the overseas buyer, endorsement of debt instruments without recourse in favor of the forfaiter etc.

## Costs Involved in a Transaction of Forfaiting

A transaction of forfaiting involves different types of fees and charges. The fee charged by the forfaiter depends on the relationship with the exporter, volume of trade and above all the cost of funds of the forfaiter. The fees that come into play during a transaction of forfaiting fall into three broad categories.

- **Commitment Fees:** A commitment fee is payable to the forfaiter by the exporter in consideration of the commitment made by the forfaiter to execute a particular transaction of forfaiting at a particular discount rate and within a specific time. The commitment fees range between 0.5-1.5 per annum. It is always calculated on the unutilized amount of the forfaiting transaction. Irrespective of the execution of the export contract, the commitment fees are required to be paid.
- **Discount Fees:** It is the cost payable on the credit promised under the factoring deal for the total period of credit under consideration. It is payable by the exporter to the forfaiter. Instead of charging the same separately, the forfaiter deducts it from the amount it owes to the exporter against the promissory note or bills of exchange, as the case may be. Discount rate is arrived at based on the London Inter Bank Offered Rate (LIBOR) for the period under consideration. The forfaiter pays the exporter the money almost instantly, but it has to wait quite some time to recover the same from the importer. During the intervening period, the adverse movements in the international currency market may wipe out the profits of the forfaiter. So this also includes the possible loss/gain that can be expected due to changes in the exchange rates in the intervening period.
- **Documentation Fees:** Documentation fees are generally charged for transactions involving elaborate legal formalities and complexities and they may not be charged when the legal procedures and the documentation required are low.

## SUMMARY

- Factoring can be defined as the sale of book debts by a firm (client) to a financial intermediary (factor) on the understanding that the factor will pay for the debts purchased as and when they are collected or on the guaranteed payment date fixed in relation to the maturity dates of the debts purchased. So, the factor basically manages the collection of debts on behalf of the client and maintains the sales-ledger. For rendering these services, he charges a commission which is expressed as a percentage of the value of debts purchased.
- The factor often provides a pre-payment (advance payment) up to a specified percentage of the debts purchased and charges interest on the pre-payment for the period between the date of pre-payment to the date of collection or the guaranteed payment date. This arrangement is referred to as the advance factoring arrangement. If the factor provides credit protection to the client, the factor assumes the risk of bad debt loss – the arrangement is referred to as Non-recourse factoring. A factoring arrangement which provides the services of collection, sales-ledgering, finance and credit protection is referred to as Full factoring or Old line factoring.
- Factoring differs from bills discounting in the following respects: (i) In a bill discounting arrangement, the financial intermediary does not assume the responsibilities of sales-ledger administration and collection of debts which the factor does under the factoring arrangement. (ii) Unlike factoring, no notice of assignment is provided to the customers of the client under the bill discounting arrangement. (iii) The bill discounting arrangement is with recourse to the client whereas a factoring arrangement can be without recourse.
- The legal relationship between the factor and the client is governed by the provisions of the factoring agreement. Under this agreement, the client (i) warranties that the debts sold are valid, enforceable, undisputed and recoverable; (ii) undertakes to settle problems of dispute, damages and deductions in relation to the bills assigned to the factor; and (iii) provides copies of all relevant credit sales invoices along with proof of despatch to the factor. As between the factor and the customer, the legal status of the factor is that of an assignee. Once the notice of assignment is served to the customer, he is under a legal obligation to pay the factor.
- From the client's angle, factoring offers the following advantages: (i) Factoring reduces the uncertainty associated with collections thereby reducing the cash float and improving the velocity of current assets turnover ratio. (ii) Since the factor assumes the responsibility for collection and credit administration, the firm can sharply focus on market development. (iii) Unlike other forms of financing, advance factoring does not impair the current ratio of the firm. In fact, through a judicious use of the funds made available by the factor, the client can improve the current ratio. Although factoring offers a number of advantages, a firm which has been managing its receivables must necessarily do a cost-benefit analysis before resorting to factoring.
- While factoring has a large market to cater, there are some operational problems to be sorted out before factoring can graduate into the rapid growth stage. First there is a need for a credit information services that will provide reliable credit information on a large number of business firms. Without this service, the factor will find it extremely difficult to evaluate the credit quality of his client's receivable portfolio.
- Second, the funding norms applicable to factoring companies must be clearly spelt out and these companies must be placed on par with leasing and hire purchase companies in terms of the eligibility to raise debt. Finally, factoring transactions must be exempted from the levy of stamp duty (which is now applicable to assignment of any form of debt) so that the transaction costs are reduced.

# Appendix

## Table A.1

### Relationship Between Nominal and Effective Rates of Interest and Discount

| Effective rate / Interest | $i^{(2)}$ | $i^{(4)}$ | $i^{(12)}$ | $d$ | $d^{(2)}$ | $d^{(4)}$ | $d^{(12)}$ |
|---|---|---|---|---|---|---|---|
| 0.01 | 0.0100 | 0.0100 | 0.0100 | 0.0099 | 0.0099 | 0.0099 | 0.0099 |
| 0.02 | 0.0199 | 0.0199 | 0.0198 | 0.0196 | 0.0197 | 0.0198 | 0.0198 |
| 0.03 | 0.0298 | 0.0297 | 0.0296 | 0.0291 | 0.0293 | 0.0294 | 0.0295 |
| 0.04 | 0.0396 | 0.0394 | 0.0393 | 0.0385 | 0.0388 | 0.0390 | 0.0392 |
| 0.05 | 0.0494 | 0.0491 | 0.0489 | 0.0476 | 0.0482 | 0.0485 | 0.0487 |
| 0.06 | 0.0591 | 0.0587 | 0.0584 | 0.0566 | 0.0574 | 0.0578 | 0.0581 |
| 0.07 | 0.0688 | 0.0682 | 0.0678 | 0.0654 | 0.0665 | 0.0671 | 0.0675 |
| 0.08 | 0.0785 | 0.0777 | 0.0772 | 0.0741 | 0.0755 | 0.0762 | 0.0767 |
| 0.09 | 0.0881 | 0.0871 | 0.0865 | 0.0826 | 0.0843 | 0.0853 | 0.0859 |
| 0.10 | 0.0976 | 0.0965 | 0.0957 | 0.0909 | 0.0931 | 0.0942 | 0.0949 |
| 0.11 | 0.1071 | 0.1057 | 0.1048 | 0.0991 | 0.1017 | 0.1030 | 0.1039 |
| 0.12 | 0.1166 | 0.1149 | 0.1139 | 0.1071 | 0.1102 | 0.1117 | 0.1128 |
| 0.13 | 0.1260 | 0.1241 | 0.1228 | 0.1150 | 0.1186 | 0.1204 | 0.1216 |
| 0.14 | 0.1354 | 0.1332 | 0.1317 | 0.1228 | 0.1268 | 0.1289 | 0.1303 |
| 0.15 | 0.1448 | 0.1422 | 0.1406 | 0.1304 | 0.1350 | 0.1373 | 0.1390 |
| 0.16 | 0.1541 | 0.1512 | 0.1493 | 0.1379 | 0.1430 | 0.1457 | 0.1475 |
| 0.17 | 0.1633 | 0.1601 | 0.1580 | 0.1453 | 0.1510 | 0.1540 | 0.1560 |
| 0.18 | 0.1726 | 0.1690 | 0.1667 | 0.1525 | 0.1589 | 0.1621 | 0.1644 |
| 0.19 | 0.1817 | 0.1778 | 0.1752 | 0.1597 | 0.1666 | 0.1702 | 0.1727 |
| 0.20 | 0.1909 | 0.1865 | 0.1837 | 0.1667 | 0.1743 | 0.1782 | 0.1809 |
| 0.21 | 0.2000 | 0.1952 | 0.1921 | 0.1736 | 0.1818 | 0.1861 | 0.1891 |
| 0.22 | 0.2091 | 0.2039 | 0.2005 | 0.1803 | 0.1893 | 0.1940 | 0.1972 |
| 0.23 | 0.2181 | 0.2125 | 0.2088 | 0.1870 | 0.1967 | 0.2017 | 0.2052 |
| 0.24 | 0.2271 | 0.2210 | 0.2171 | 0.1935 | 0.2039 | 0.2094 | 0.2132 |
| 0.26 | 0.2450 | 0.2379 | 0.2334 | 0.2063 | 0.2183 | 0.2246 | 0.2289 |
| 0.28 | 0.2627 | 0.2546 | 0.2494 | 0.2188 | 0.2322 | 0.2394 | 0.2443 |
| 0.30 | 0.2804 | 0.2712 | 0.2653 | 0.2308 | 0.2459 | 0.2539 | 0.2595 |
| 0.32 | 0.2978 | 0.2875 | 0.2809 | 0.2424 | 0.2592 | 0.2682 | 0.2744 |
| 0.34 | 0.3152 | 0.3036 | 0.2963 | 0.2537 | 0.2723 | 0.2822 | 0.2891 |
| 0.36 | 0.3324 | 0.3196 | 0.3115 | 0.2647 | 0.2850 | 0.2960 | 0.3036 |
| 0.38 | 0.3495 | 0.3354 | 0.3264 | 0.2754 | 0.2975 | 0.3095 | 0.3178 |
| 0.40 | 0.3664 | 0.3510 | 0.3412 | 0.2857 | 0.3097 | 0.3227 | 0.3318 |

| interest \ i/effective rate | $i/i^{(2)}$ | $i/i^{(4)}$ | $i/i^{(12)}$ | $i/d^{(2)}$ | $i/d^{(4)}$ | $i/d^{(12)}$ |
|---|---|---|---|---|---|---|
| 0.01 | 1.0025 | 1.0037 | 1.0046 | 1.0075 | 1.0062 | 1.0054 |
| 0.02 | 1.0050 | 1.0075 | 1.0091 | 1.0150 | 1.0125 | 1.0108 |
| 0.03 | 1.0074 | 1.0112 | 1.0137 | 1.0224 | 1.0187 | 1.0162 |
| 0.04 | 1.0099 | 1.0149 | 1.0182 | 1.0299 | 1.0249 | 1.0215 |
| 0.05 | 1.0123 | 1.0186 | 1.0227 | 1.0373 | 1.0311 | 1.0269 |
| 0.06 | 1.0148 | 1.0222 | 1.0272 | 1.0448 | 1.0322 | 1.0372 |
| 0.07 | 1.0172 | 1.0259 | 1.0317 | 1.0522 | 1.0434 | 1.0375 |
| 0.08 | 1.0196 | 1.0295 | 1.0362 | 1.0596 | 1.0495 | 1.0428 |
| 0.09 | 1.0220 | 1.0331 | 1.0406 | 1.0670 | 1.0556 | 1.0481 |
| 0.10 | 1.0244 | 1.0368 | 1.0450 | 1.0744 | 1.0618 | 1.0534 |
| 0.11 | 1.0268 | 1.0404 | 1.0495 | 1.0818 | 1.0679 | 1.0586 |
| 0.12 | 1.0292 | 1.0439 | 1.0539 | 1.0892 | 1.0739 | 1.0639 |
| 0.13 | 1.0315 | 1.0475 | 1.0583 | 1.0965 | 1.0800 | 1.0691 |
| 0.14 | 1.0339 | 1.0511 | 1.0626 | 1.1039 | 1.0861 | 1.0743 |
| 0.15 | 1.0362 | 1.0546 | 1.0670 | 1.1112 | 1.0921 | 1.0795 |
| 0.16 | 1.0385 | 1.0581 | 1.0714 | 1.1185 | 1.0981 | 1.0847 |
| 0.17 | 1.0408 | 1.0617 | 1.0757 | 1.1258 | 1.1042 | 1.0899 |
| 0.18 | 1.0431 | 1.0652 | 1.0800 | 1.1331 | 1.1102 | 1.0950 |
| 0.19 | 1.0454 | 1.0687 | 1.0843 | 1.1404 | 1.1162 | 1.1002 |
| 0.20 | 1.0477 | 1.0722 | 1.0887 | 1.1477 | 1.1222 | 1.1053 |
| 0.21 | 1.0500 | 1.0756 | 1.0929 | 1.1550 | 1.1281 | 1.1104 |
| 0.22 | 1.0523 | 1.0791 | 1.0972 | 1.1623 | 1.1341 | 1.1155 |
| 0.23 | 1.0545 | 1.0825 | 1.1015 | 1.1695 | 1.1400 | 1.1206 |
| 0.24 | 1.0568 | 1.0860 | 1.1057 | 1.1768 | 1.1460 | 1.1257 |
| 0.26 | 1.0612 | 1.0928 | 1.1142 | 1.1912 | 1.1578 | 1.1359 |
| 0.28 | 1.0657 | 1.0996 | 1.1226 | 1.2057 | 1.1696 | 1.1460 |
| 0.30 | 1.0701 | 1.1064 | 1.1310 | 1.2201 | 1.1814 | 1.1560 |
| 0.32 | 1.0745 | 1.1131 | 1.1393 | 1.2345 | 1.1931 | 1.1660 |
| 0.34 | 1.0788 | 1.1197 | 1.1476 | 1.2488 | 1.2047 | 1.1759 |
| 0.36 | 1.0831 | 1.1264 | 1.1559 | 1.2631 | 1.2164 | 1.1859 |
| 0.38 | 1.0874 | 1.1330 | 1.1641 | 1.2774 | 1.2280 | 1.1957 |
| 0.40 | 1.0916 | 1.1395 | 1.1722 | 1.2916 | 1.2395 | 1.2055 |

## Table A.2 : Future Value Interest Factor

| n/i | 1% | 2% | 3% | 4% | 5% | 6% | 7% | 8% | 9% | 10% | 11% | 12% | 13% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| 1 | 1.010 | 1.020 | 1.030 | 1.040 | 1.050 | 1.060 | 1.070 | 1.080 | 1.090 | 1.100 | 1.110 | 1.120 | 1.130 |
| 2 | 1.020 | 1.040 | 1.061 | 1.082 | 1.102 | 1.124 | 1.145 | 1.166 | 1.188 | 1.210 | 1.232 | 1.254 | 1.277 |
| 3 | 1.030 | 1.061 | 1.093 | 1.125 | 1.158 | 1.191 | 1.225 | 1.260 | 1.295 | 1.331 | 1.368 | 1.405 | 1.443 |
| 4 | 1.041 | 1.082 | 1.126 | 1.170 | 1.216 | 1.262 | 1.311 | 1.360 | 1.412 | 1.464 | 1.518 | 1.574 | 1.630 |
| 5 | 1.051 | 1.104 | 1.159 | 1.217 | 1.276 | 1.338 | 1.403 | 1.469 | 1.539 | 1.611 | 1.685 | 1.762 | 1.842 |
| 6 | 1.062 | 1.126 | 1.194 | 1.265 | 1.340 | 1.419 | 1.501 | 1.587 | 1.677 | 1.772 | 1.870 | 1.974 | 2.082 |
| 7 | 1.072 | 1.149 | 1.230 | 1.316 | 1.407 | 1.504 | 1.606 | 1.714 | 1.828 | 1.949 | 2.076 | 2.211 | 2.353 |
| 8 | 1.083 | 1.172 | 1.267 | 1.369 | 1.477 | 1.594 | 1.718 | 1.851 | 1.993 | 2.144 | 2.305 | 2.476 | 2.658 |
| 9 | 1.094 | 1.195 | 1.305 | 1.423 | 1.551 | 1.689 | 1.838 | 1.999 | 2.172 | 2.358 | 2.558 | 2.773 | 3.004 |
| 10 | 1.105 | 1.219 | 1.344 | 1.480 | 1.629 | 1.791 | 1.967 | 2.159 | 2.367 | 2.594 | 2.839 | 3.106 | 3.395 |
| 11 | 1.116 | 1.243 | 1.384 | 1.539 | 1.710 | 1.898 | 2.105 | 2.332 | 2.580 | 2.853 | 3.152 | 3.479 | 3.836 |
| 12 | 1.127 | 1.268 | 1.426 | 1.601 | 1.796 | 2.012 | 2.252 | 2.518 | 2.813 | 3.138 | 3.498 | 3.896 | 4.335 |
| 13 | 1.138 | 1.294 | 1.469 | 1.665 | 1.886 | 2.133 | 2.410 | 2.720 | 3.066 | 3.452 | 3.883 | 4.363 | 4.898 |
| 14 | 1.149 | 1.319 | 1.513 | 1.732 | 1.980 | 2.261 | 2.579 | 2.937 | 3.342 | 3.797 | 4.310 | 4.887 | 5.535 |
| 15 | 1.161 | 1.346 | 1.558 | 1.801 | 2.097 | 2.397 | 2.759 | 3.172 | 3.642 | 4.177 | 4.785 | 5.474 | 6.254 |
| 16 | 1.173 | 1.373 | 1.605 | 1.873 | 2.183 | 2.540 | 2.952 | 3.426 | 3.970 | 4.595 | 5.311 | 6.130 | 7.067 |
| 17 | 1.184 | 1.400 | 1.653 | 1.948 | 2.292 | 2.693 | 3.159 | 3.700 | 4.328 | 5.054 | 5.895 | 6.866 | 7.986 |
| 18 | 1.196 | 1.428 | 1.702 | 2.026 | 2.407 | 2.854 | 3.380 | 3.996 | 4.717 | 5.560 | 6.544 | 7.690 | 9.024 |
| 19 | 1.208 | 1.457 | 1.754 | 2.107 | 2.527 | 3.026 | 3.617 | 4.316 | 5.142 | 6.116 | 7.263 | 8.613 | 10.197 |
| 20 | 1.220 | 1.486 | 1.806 | 2.191 | 2.653 | 3.207 | 3.870 | 4.661 | 5.604 | 6.728 | 8.062 | 9.646 | 11.523 |
| 25 | 1.282 | 1.641 | 2.094 | 2.666 | 3.386 | 4.292 | 5.427 | 6.848 | 8.623 | 10.835 | 13.585 | 17.000 | 21.231 |
| 30 | 1.348 | 1.811 | 2.427 | 3.243 | 4.322 | 5.743 | 7.612 | 10.063 | 13.268 | 17.449 | 22.892 | 29.960 | 39.116 |

| n/i | 14% | 15% | 16% | 17% | 18% | 19% | 20% | 24% | 28% | 32% | 36% | 40% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| 1 | 1.140 | 1.150 | 1.160 | 1.170 | 1.180 | 1.190 | 1.200 | 1.240 | 1.280 | 1.320 | 1.360 | 1.400 |
| 2 | 1.300 | 1.322 | 1.346 | 1.369 | 1.392 | 1.416 | 1.440 | 1.538 | 1.638 | 1.742 | 1.850 | 1.960 |
| 3 | 1.482 | 1.521 | 1.561 | 1.602 | 1.643 | 1.685 | 1.728 | 1.907 | 2.097 | 2.300 | 2.515 | 2.744 |
| 4 | 1.689 | 1.749 | 1.811 | 1.874 | 1.939 | 2.005 | 2.074 | 2.364 | 2.684 | 3.036 | 3.421 | 3.842 |
| 5 | 1.925 | 2.011 | 2.100 | 2.192 | 2.288 | 2.386 | 2.488 | 2.392 | 3.436 | 4.007 | 4.653 | 5.378 |
| 6 | 2.195 | 2.313 | 2.436 | 2.565 | 2.700 | 2.840 | 2.986 | 3.635 | 4.398 | 5.290 | 6.328 | 7.530 |
| 7 | 2.502 | 2.660 | 2.826 | 3.001 | 3.185 | 3.379 | 3.583 | 4.508 | 5.629 | 6.983 | 8.605 | 10.541 |
| 8 | 2.853 | 3.059 | 3.278 | 3.511 | 3.759 | 4.021 | 4.300 | 5.590 | 7.206 | 9.217 | 11.703 | 14.758 |
| 9 | 3.252 | 3.518 | 3.803 | 4.108 | 4.435 | 4.785 | 5.160 | 6.931 | 9.223 | 12.166 | 15.917 | 20.661 |
| 10 | 3.707 | 4.046 | 4.411 | 4.807 | 5.234 | 5.695 | 6.192 | 8.594 | 11.806 | 16.060 | 21.647 | 28.925 |
| 11 | 4.226 | 4.652 | 5.117 | 5.624 | 6.176 | 6.777 | 7.430 | 10.657 | 15.112 | 21.199 | 29.439 | 40.496 |
| 12 | 4.818 | 5.350 | 5.936 | 6.580 | 7.288 | 8.064 | 8.916 | 13.215 | 19.343 | 27.983 | 40.037 | 56.694 |
| 13 | 5.492 | 6.153 | 6.886 | 7.699 | 8.599 | 9.596 | 10.699 | 16.386 | 24.759 | 36.937 | 54.451 | 79.372 |
| 14 | 6.261 | 7.076 | 7.988 | 9.007 | 10.147 | 11.420 | 12.839 | 20.319 | 31.961 | 48.757 | 74.053 | 111.120 |
| 15 | 7.138 | 8.137 | 9.266 | 10.539 | 11.974 | 13.590 | 15.407 | 25.196 | 40.565 | 64.359 | 100.712 | 155.568 |
| 16 | 8.137 | 9.358 | 10.748 | 12.330 | 14.129 | 16.172 | 18.488 | 31.243 | 51.923 | 84.954 | 136.969 | 217.795 |
| 17 | 9.276 | 10.761 | 12.468 | 14.426 | 16.672 | 19.244 | 22.186 | 38.741 | 66.461 | 112.139 | 186.278 | 304.914 |
| 18 | 10.575 | 12.375 | 14.463 | 16.879 | 19.673 | 22.901 | 26.623 | 48.039 | 85.071 | 148.023 | 253.338 | 426.879 |
| 19 | 12.056 | 14.232 | 16.777 | 19.748 | 23.214 | 27.252 | 31.948 | 59.568 | 108.890 | 195.391 | 344.540 | 597.630 |
| 20 | 13.743 | 16.367 | 19.461 | 23.106 | 27.393 | 32.429 | 38.338 | 73.864 | 139.380 | 257.916 | 468.574 | 836.683 |
| 25 | 26.462 | 32.919 | 40.874 | 50.658 | 62.669 | 77.388 | 95.396 | 216.542 | 478.905 | 1033.590 | 2180.081 | 4499.880 |
| 30 | 50.950 | 66.212 | 85.850 | 111.065 | 143.371 | 184.675 | 237.376 | 634.820 | 1645.504 | 4142.075 | 10143.019 | 24201.432 |

## Table A.3 : Future Value Interest Factor for an Annuity

| Period n | 1% | 2% | 3% | 4% | 5% | 6% | 7% | 8% | 9% | 10% | 11% | 12% | 13% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| 2 | 2.010 | 2.020 | 2.030 | 2.040 | 2.050 | 2.060 | 2.070 | 2.080 | 2.090 | 2.100 | 2.110 | 2.120 | 2.130 |
| 3 | 3.030 | 3.060 | 3.091 | 3.122 | 3.152 | 3.184 | 3.215 | 3.246 | 3.278 | 3.310 | 3.342 | 3.374 | 3.407 |
| 4 | 4.060 | 4.122 | 4.184 | 4.246 | 4.310 | 4.375 | 4.440 | 4.506 | 4.573 | 4.641 | 4.710 | 4.779 | 4.850 |
| 5 | 5.101 | 5.204 | 5.309 | 5.416 | 5.526 | 5.637 | 5.751 | 5.867 | 5.985 | 6.105 | 6.228 | 6.353 | 6.480 |
| 6 | 6.152 | 6.308 | 6.468 | 6.633 | 6.802 | 6.975 | 7.153 | 7.336 | 7.523 | 7.716 | 7.913 | 8.115 | 8.323 |
| 7 | 7.214 | 7.434 | 7.662 | 7.898 | 8.142 | 8.394 | 8.654 | 8.923 | 9.200 | 9.487 | 9.783 | 10.089 | 10.405 |
| 8 | 8.286 | 8.583 | 8.892 | 9.214 | 9.549 | 9.897 | 10.260 | 10.637 | 11.028 | 11.436 | 11.859 | 12.300 | 12.757 |
| 9 | 9.369 | 9.755 | 10.159 | 10.583 | 11.027 | 11.491 | 11.978 | 12.488 | 13.021 | 13.579 | 14.164 | 14.776 | 15.416 |
| 10 | 10.462 | 10.950 | 11.464 | 12.006 | 12.578 | 13.181 | 13.816 | 14.487 | 15.193 | 15.937 | 16.722 | 17.549 | 18.420 |
| 11 | 11.567 | 12.169 | 12.808 | 13.486 | 14.207 | 14.972 | 15.784 | 16.645 | 17.560 | 18.531 | 19.561 | 20.655 | 21.814 |
| 12 | 12.683 | 13.412 | 14.192 | 15.026 | 15.917 | 16.870 | 17.888 | 18.977 | 21.141 | 21.384 | 22.713 | 24.133 | 25.650 |
| 13 | 13.809 | 14.680 | 15.618 | 16.627 | 17.713 | 18.882 | 20.141 | 21.495 | 22.953 | 24.523 | 26.212 | 28.029 | 29.985 |
| 14 | 14.947 | 15.974 | 17.086 | 18.292 | 19.599 | 21.015 | 22.550 | 24.215 | 26.019 | 27.975 | 30.095 | 32.393 | 34.883 |
| 15 | 16.097 | 17.293 | 18.599 | 20.024 | 21.579 | 23.276 | 25.129 | 27.152 | 29.361 | 31.772 | 34.405 | 37.280 | 40.417 |
| 16 | 17.258 | 18.639 | 20.157 | 21.825 | 23.657 | 25.673 | 27.888 | 30.324 | 33.003 | 35.950 | 39.190 | 42.753 | 46.672 |
| 17 | 18.430 | 20.012 | 21.762 | 23.698 | 25.840 | 28.213 | 30.840 | 33.750 | 36.974 | 40.545 | 44.501 | 48.884 | 53.739 |
| 18 | 19.615 | 21.412 | 23.414 | 25.645 | 28.132 | 30.906 | 33.999 | 37.450 | 41.301 | 45.599 | 50.396 | 55.750 | 61.725 |
| 19 | 20.811 | 22.841 | 25.117 | 27.671 | 30.539 | 33.760 | 37.379 | 41.446 | 46.018 | 51.159 | 56.939 | 63.440 | 70.749 |
| 20 | 22.019 | 24.297 | 26.870 | 29.778 | 33.066 | 36.786 | 40.995 | 45.762 | 51.160 | 57.275 | 64.203 | 72.052 | 80.947 |
| 25 | 28.243 | 32.030 | 36.459 | 41.646 | 47.727 | 54.865 | 63.249 | 73.106 | 84.701 | 98.347 | 114.413 | 133.334 | 155.620 |
| 30 | 34.785 | 40.568 | 47.575 | 56.805 | 66.439 | 79.058 | 94.461 | 113.283 | 136.308 | 164.494 | 199.021 | 241.333 | 293.199 |

| Period n | 14% | 15% | 16% | 17% | 18% | 19% | 20% | 24% | 28% | 32% | 36% | 40% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| 2 | 2.140 | 2.150 | 2.160 | 2.170 | 2.180 | 2.190 | 2.200 | 2.240 | 2.280 | 2.320 | 2.360 | 2.400 |
| 3 | 3.440 | 3.473 | 3.506 | 3.539 | 3.572 | 3.606 | 3.640 | 3.778 | 3.918 | 4.062 | 4.210 | 4.360 |
| 4 | 4.921 | 4.993 | 5.066 | 5.141 | 5.215 | 5.291 | 5.368 | 5.684 | 6.016 | 6.362 | 6.725 | 7.104 |
| 5 | 6.610 | 6.742 | 6.877 | 7.014 | 7.154 | 7.297 | 7.442 | 8.048 | 8.700 | 9.398 | 10.146 | 10.946 |
| 6 | 8.536 | 8.754 | 8.977 | 9.207 | 9.442 | 9.683 | 9.930 | 10.980 | 12.136 | 13.406 | 14.799 | 16.324 |
| 7 | 10.730 | 11.067 | 11.414 | 11.772 | 12.142 | 12.523 | 12.916 | 14.615 | 16.534 | 18.696 | 21.126 | 23.853 |
| 8 | 13.233 | 13.727 | 14.240 | 14.773 | 15.327 | 15.902 | 16.499 | 19.123 | 22.163 | 25.678 | 29.732 | 34.395 |
| 9 | 16.085 | 16.786 | 17.518 | 18.285 | 19.086 | 19.923 | 20.799 | 24.712 | 29.369 | 34.895 | 41.435 | 49.153 |
| 10 | 19.337 | 20.304 | 21.321 | 22.393 | 23.521 | 24.709 | 25.959 | 31.643 | 38.592 | 47.062 | 57.352 | 69.814 |
| 11 | 23.044 | 24.349 | 25.733 | 27.200 | 28.755 | 30.404 | 32.150 | 40.238 | 50.399 | 63.122 | 78.998 | 98.739 |
| 12 | 27.271 | 29.002 | 30.850 | 32.824 | 34.931 | 37.180 | 39.580 | 50.985 | 65.510 | 84.320 | 108.437 | 139.235 |
| 13 | 32.089 | 34.352 | 36.786 | 39.404 | 42.219 | 45.244 | 48.497 | 64.110 | 84.853 | 112.303 | 148.475 | 195.929 |
| 14 | 37.581 | 40.505 | 43.672 | 47.103 | 50.818 | 54.841 | 59.196 | 80.496 | 109.612 | 149.240 | 202.926 | 275.300 |
| 15 | 43.842 | 47.580 | 51.660 | 56.110 | 60.965 | 66.261 | 72.035 | 100.815 | 141.303 | 197.997 | 276.979 | 386.420 |
| 16 | 50.980 | 55.717 | 60.925 | 66.649 | 72.939 | 79.850 | 87.442 | 126.011 | 181.868 | 262.356 | 377.692 | 541.988 |
| 17 | 59.118 | 65.075 | 71.673 | 78.979 | 87.068 | 96.022 | 105.931 | 157.253 | 233.791 | 347.310 | 514.661 | 759.784 |
| 18 | 68.394 | 75.836 | 84.141 | 93.406 | 103.740 | 115.266 | 128.117 | 195.994 | 300.252 | 459.449 | 700.939 | 1064.697 |
| 19 | 78.969 | 88.212 | 98.603 | 110.285 | 123.414 | 138.166 | 154.740 | 244.033 | 385.323 | 607.472 | 954.277 | 1491.576 |
| 20 | 91.025 | 102.44 | 115.380 | 130.033 | 146.628 | 165.418 | 186.688 | 303.601 | 494.213 | 802.863 | 1298.817 | 2089.206 |
| 25 | 181.871 | 212.793 | 249.214 | 292.105 | 342.603 | 402.042 | 371.981 | 898.092 | 1706.803 | 3226.844 | 6053.004 | 11247.199 |
| 30 | 356.787 | 434.745 | 530.321 | 647.439 | 790.948 | 966.712 | 1181.882 | 2640.916 | 5873.231 | 12940.859 | 28172.276 | 60501.081 |

## Table A.4 : Present Value Interest Factor

| Period n | 1% | 2% | 3% | 4% | 5% | 6% | 7% | 8% | 9% | 10% | 11% | 12% | 13% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| 1 | 0.990 | 0.980 | 0.971 | 0.962 | 0.952 | 0.943 | 0.935 | 0.926 | 0.917 | 0.909 | 0.901 | 0.893 | 0.885 |
| 2 | 0.980 | 0.961 | 0.943 | 0.925 | 0.907 | 0.890 | 0.873 | 0.857 | 0.842 | 0.826 | 0.812 | 0.797 | 0.783 |
| 3 | 0.971 | 0.942 | 0.915 | 0.889 | 0.864 | 0.840 | 0.816 | 0.794 | 0.772 | 0.751 | 0.731 | 0.712 | 0.693 |
| 4 | 0.961 | 0.924 | 0.889 | 0.855 | 0.823 | 0.792 | 0.763 | 0.735 | 0.708 | 0.683 | 0.659 | 0.636 | 0.613 |
| 5 | 0.951 | 0.906 | 0.863 | 0.822 | 0.784 | 0.747 | 0.713 | 0.681 | 0.650 | 0.621 | 0.593 | 0.567 | 0.543 |
| 6 | 0.942 | 0.888 | 0.838 | 0.790 | 0.746 | 0.705 | 0.666 | 0.630 | 0.596 | 0.564 | 0.535 | 0.507 | 0.480 |
| 7 | 0.933 | 0.871 | 0.813 | 0.760 | 0.711 | 0.665 | 0.623 | 0.583 | 0.447 | 0.513 | 0.482 | 0.452 | 0.425 |
| 8 | 0.923 | 0.853 | 0.789 | 0.731 | 0.677 | 0.627 | 0.582 | 0.540 | 0.502 | 0.467 | 0.434 | 0.404 | 0.376 |
| 9 | 0.914 | 0.873 | 0.766 | 0.703 | 0.645 | 0.592 | 0.544 | 0.500 | 0.460 | 0.424 | 0.391 | 0.361 | 0.333 |
| 10 | 0.905 | 0.820 | 0.744 | 0.676 | 0.614 | 0.558 | 0.508 | 0.463 | 0.422 | 0.386 | 0.352 | 0.322 | 0.295 |
| 11 | 0.896 | 0.804 | 0.722 | 0.650 | 0.585 | 0.527 | 0.475 | 0.429 | 0.388 | 0.350 | 0.317 | 0.287 | 0.261 |
| 12 | 0.887 | 0.788 | 0.701 | 0.625 | 0.557 | 0.497 | 0.444 | 0.397 | 0.356 | 0.319 | 0.286 | 0.257 | 0.231 |
| 13 | 0.879 | 0.773 | 0.681 | 0.601 | 0.530 | 0.469 | 0.415 | 0.368 | 0.326 | 0.290 | 0.258 | 0.229 | 0.204 |
| 14 | 0.870 | 0.758 | 0.661 | 0.577 | 0.505 | 0.442 | 0.388 | 0.340 | 0.299 | 0.263 | 0.232 | 0.181 | 0.205 |
| 15 | 0.861 | 0.743 | 0.642 | 0.555 | 0.481 | 0.417 | 0.362 | 0.315 | 0.275 | 0.239 | 0.209 | 0.183 | 0.160 |
| 16 | 0.853 | 0.728 | 0.623 | 0.534 | 0.458 | 0.394 | 0.339 | 0.292 | 0.252 | 0.218 | 0.188 | 0.163 | 0.141 |
| 17 | 0.844 | 0.714 | 0.605 | 0.513 | 0.436 | 0.371 | 0.317 | 0.270 | 0.231 | 0.198 | 0.170 | 0.146 | 0.125 |
| 18 | 0.836 | 0.700 | 0.587 | 0.494 | 0.416 | 0.350 | 0.296 | 0.250 | 0.212 | 0.180 | 0.153 | 0.130 | 0.111 |
| 19 | 0.828 | 0.686 | 0.570 | 0.475 | 0.396 | 0.331 | 0.276 | 0.232 | 0.194 | 0.164 | 0.138 | 0.166 | 0.098 |
| 20 | 0.820 | 0.673 | 0.554 | 0.456 | 0.377 | 0.312 | 0.258 | 0.215 | 0.178 | 0.149 | 0.124 | 0.104 | 0.087 |
| 25 | 0.780 | 0.610 | 0.478 | 0.375 | 0.295 | 0.233 | 0.184 | 0.146 | 0.116 | 0.092 | 0.074 | 0.059 | 0.047 |
| 30 | 0.742 | 0.552 | 0.412 | 0.308 | 0.231 | 0.174 | 0.131 | 0.099 | 0.075 | 0.057 | 0.044 | 0.033 | 0.026 |

| Period n | 14% | 15% | 16% | 17% | 18% | 19% | 20% | 24% | 28% | 32% | 36% | 40% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| 1 | 0.877 | 0.870 | 0.862 | 0.855 | 0.847 | 0.840 | 0.833 | 0.806 | 0.781 | 0.758 | 0.735 | 0.714 |
| 2 | 0.769 | 0.756 | 0.743 | 0.731 | 0.718 | 0.706 | 0.694 | 0.650 | 0.610 | 0.574 | 0.541 | 0.510 |
| 3 | 0.675 | 0.658 | 0.641 | 0.624 | 0.609 | 0.593 | 0.579 | 0.524 | 0.477 | 0.435 | 0.398 | 0.364 |
| 4 | 0.592 | 0.572 | 0.552 | 0.534 | 0.516 | 0.499 | 0.482 | 0.423 | 0.373 | 0.329 | 0.292 | 0.260 |
| 5 | 0.519 | 0.497 | 0.476 | 0.456 | 0.437 | 0.419 | 0.402 | 0.341 | 0.291 | 0.250 | 0.215 | 0.186 |
| 6 | 0.456 | 0.432 | 0.410 | 0.390 | 0.370 | 0.352 | 0.335 | 0.275 | 0.227 | 0.189 | 0.158 | 0.133 |
| 7 | 0.400 | 0.376 | 0.354 | 0.333 | 0.314 | 0.296 | 0.279 | 0.222 | 0.178 | 0.143 | 0.116 | 0.095 |
| 8 | 0.351 | 0.327 | 0.305 | 0.285 | 0.266 | 0.249 | 0.233 | 0.179 | 0.139 | 0.108 | 0.085 | 0.068 |
| 9 | 0.308 | 0.284 | 0.263 | 0.243 | 0.226 | 0.209 | 0.194 | 0.144 | 0.108 | 0.082 | 0.063 | 0.048 |
| 10 | 0.270 | 0.247 | 0.227 | 0.208 | 0.191 | 0.176 | 0.162 | 0.116 | 0.085 | 0.062 | 0.046 | 0.035 |
| 11 | 0.237 | 0.215 | 0.195 | 0.178 | 0.162 | 0.148 | 0.135 | 0.094 | 0.066 | 0.047 | 0.034 | 0.025 |
| 12 | 0.208 | 0.187 | 0.168 | 0.152 | 0.137 | 0.124 | 0.112 | 0.076 | 0.052 | 0.036 | 0.025 | 0.018 |
| 13 | 0.182 | 0.163 | 0.145 | 0.130 | 0.116 | 0.104 | 0.093 | 0.061 | 0.040 | 0.027 | 0.018 | 0.013 |
| 14 | 0.160 | 0.141 | 0.125 | 0.111 | 0.099 | 0.088 | 0.078 | 0.049 | 0.032 | 0.021 | 0.014 | 0.009 |
| 15 | 0.140 | 0.123 | 0.108 | 0.095 | 0.084 | 0.074 | 0.065 | 0.040 | 0.025 | 0.016 | 0.010 | 0.006 |
| 16 | 0.123 | 0.107 | 0.093 | 0.081 | 0.071 | 0.062 | 0.054 | 0.032 | 0.019 | 0.012 | 0.005 | 0.007 |
| 17 | 0.108 | 0.093 | 0.080 | 0.069 | 0.060 | 0.052 | 0.045 | 0.026 | 0.015 | 0.009 | 0.005 | 0.003 |
| 18 | 0.095 | 0.081 | 0.069 | 0.059 | 0.051 | 0.044 | 0.038 | 0.021 | 0.012 | 0.007 | 0.004 | 0.002 |
| 19 | 0.083 | 0.070 | 0.060 | 0.051 | 0.043 | 0.037 | 0.031 | 0.017 | 0.009 | 0.005 | 0.003 | 0.002 |
| 20 | 0.073 | 0.061 | 0.051 | 0.043 | 0.037 | 0.031 | 0.026 | 0.014 | 0.007 | 0.004 | 0.002 | 0.001 |
| 25 | 0.038 | 0.030 | 0.024 | 0.020 | 0.016 | 0.013 | 0.010 | 0.005 | 0.002 | 0.001 | 0.000 | 0.000 |
| 30 | 0.020 | 0.015 | 0.012 | 0.009 | 0.007 | 0.005 | 0.004 | 0.002 | 0.001 | 0.000 | 0.000 | 0.000 |

## Table : A.5 : Present Value Interest Factor for an Annuity

| Period n | 1% | 2% | 3% | 4% | 5% | 6% | 7% | 8% | 9% | 10% | 11% | 12% | 13% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| 1 | 0.990 | 0.980 | 0.971 | 0.962 | 0.952 | 0.943 | 0.935 | 0.926 | 0.917 | 0.909 | 0.901 | 0.893 | 0.885 |
| 2 | 1.970 | 1.942 | 1.913 | 1.886 | 1.859 | 1.833 | 1.808 | 1.783 | 1.759 | 1.736 | 1.713 | 1.690 | 1.668 |
| 3 | 2.941 | 2.884 | 2.829 | 2.775 | 2.723 | 2.673 | 2.624 | 2.577 | 2.531 | 2.487 | 2.444 | 2.402 | 2.361 |
| 4 | 3.902 | 3.808 | 3.717 | 3.630 | 3.546 | 3.465 | 3.387 | 3.312 | 3.240 | 3.170 | 3.102 | 3.037 | 2.974 |
| 5 | 4.853 | 4.713 | 4.580 | 4.452 | 4.329 | 4.212 | 4.100 | 3.993 | 3.890 | 3.791 | 3.696 | 3.605 | 3.517 |
| 6 | 5.795 | 5.601 | 5.417 | 5.242 | 5.076 | 4.917 | 4.767 | 4.623 | 4.486 | 4.355 | 4.231 | 4.111 | 3.998 |
| 7 | 6.728 | 6.472 | 6.230 | 6.002 | 5.786 | 5.582 | 5.389 | 5.206 | 5.033 | 4.868 | 4.712 | 5.564 | 4.423 |
| 8 | 7.652 | 7.325 | 7.020 | 6.733 | 6.463 | 6.210 | 5.971 | 5.747 | 5.535 | 3.335 | 5.146 | 4.968 | 4.799 |
| 9 | 8.566 | 8.162 | 7.786 | 7.435 | 7.108 | 6.802 | 6.515 | 6.247 | 5.995 | 5.759 | 5.537 | 5.328 | 5.132 |
| 10 | 9.471 | 8.983 | 8.530 | 8.111 | 7.722 | 7.360 | 7.024 | 6.710 | 6.418 | 6.145 | 5.889 | 5.650 | 5.426 |
| 11 | 10.368 | 9.787 | 9.253 | 8.760 | 8.306 | 7.887 | 7.499 | 7.139 | 6.805 | 6.495 | 6.207 | 5.938 | 5.687 |
| 12 | 11.255 | 10.575 | 9.954 | 9.385 | 8.863 | 8.384 | 7.943 | 7.536 | 7.161 | 6.814 | 6.492 | 6.194 | 5.918 |
| 13 | 12.134 | 11.348 | 10.635 | 9.986 | 9.394 | 8.853 | 8.358 | 7.904 | 7.487 | 7.103 | 6.750 | 6.424 | 6.122 |
| 14 | 13.004 | 12.106 | 11.296 | 10.563 | 9.899 | 9.295 | 8.745 | 8.244 | 7.786 | 7.367 | 6.982 | 6.628 | 6.302 |
| 15 | 13.865 | 12.849 | 11.938 | 11.118 | 10.380 | 9.712 | 9.108 | 8.559 | 8.061 | 7.606 | 7.191 | 6.811 | 6.462 |
| 16 | 14.718 | 13.578 | 12.561 | 11.652 | 10.838 | 10.106 | 9.447 | 8.851 | 8.313 | 7.824 | 7.379 | 6.974 | 6.604 |
| 17 | 15.562 | 14.292 | 13.166 | 12.166 | 11.274 | 10.477 | 9.763 | 9.122 | 8.544 | 8.022 | 7.549 | 7.120 | 6.729 |
| 18 | 16.398 | 14.992 | 13.754 | 12.659 | 11.690 | 10.828 | 10.059 | 9.372 | 8.756 | 8.201 | 7.702 | 7.250 | 6.840 |
| 19 | 17.226 | 15.678 | 14.324 | 13.134 | 12.085 | 11.158 | 10.336 | 9.604 | 8.950 | 8.365 | 7.839 | 7.366 | 6.938 |
| 20 | 18.046 | 16.351 | 14.877 | 13.590 | 12.462 | 11.470 | 10.594 | 9.818 | 9.129 | 8.514 | 7.963 | 7.469 | 7.025 |
| 25 | 22.023 | 19.523 | 17.413 | 15.622 | 14.094 | 12.783 | 11.654 | 10.675 | 9.823 | 9.077 | 8.422 | 7.843 | 7.330 |
| 30 | 25.808 | 22.396 | 19.600 | 17.292 | 15.372 | 13.765 | 12.409 | 11.258 | 10.274 | 9.427 | 8.694 | 8.055 | 7.496 |

| Period n | 14% | 15% | 16% | 17% | 18% | 19% | 20% | 24% | 28% | 32% | 36% | 40% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| 1 | 0.877 | 0.870 | 0.862 | 0.855 | 0.847 | 0.840 | 0.833 | 0.806 | 0.781 | 0.758 | 0.735 | 0.714 |
| 2 | 1.647 | 1.626 | 1.605 | 1.585 | 1.566 | 1.547 | 1.528 | 1.457 | 1.392 | 1.331 | 1.276 | 1.224 |
| 3 | 2.322 | 2.283 | 2.246 | 2.210 | 2.174 | 2.140 | 2.106 | 1.981 | 1.868 | 1.766 | 1.673 | 1.589 |
| 4 | 2.914 | 5.855 | 2.798 | 2.743 | 2.690 | 2.639 | 2.589 | 2.404 | 2.241 | 2.096 | 1.966 | 1.849 |
| 5 | 3.433 | 3.352 | 3.274 | 3.199 | 3.127 | 3.058 | 2.991 | 2.745 | 2.532 | 2.345 | 2.181 | 2.035 |
| 6 | 3.889 | 3.784 | 3.685 | 3.589 | 3.498 | 3.410 | 3.326 | 3.020 | 2.759 | 2.534 | 2.339 | 2.168 |
| 7 | 4.288 | 4.160 | 4.039 | 3.922 | 3.812 | 3.706 | 3.605 | 3.242 | 2.937 | 2.677 | 2.455 | 2.263 |
| 8 | 4.639 | 4.487 | 4.344 | 4.207 | 4.078 | 3.954 | 3.837 | 3.421 | 3.076 | 2.786 | 2.540 | 2.113 |
| 9 | 4.946 | 4.772 | 4.607 | 4.451 | 4.303 | 4.163 | 4.031 | 3.566 | 3.184 | 2.868 | 2.603 | 2.379 |
| 10 | 5.216 | 5.019 | 4.833 | 4.659 | 4.494 | 4.339 | 4.192 | 3.682 | 3.269 | 2.930 | 2.649 | 2.414 |
| 11 | 5.453 | 5.234 | 5.029 | 4.836 | 4.656 | 4.486 | 4.327 | 3.776 | 3.335 | 2.978 | 2.683 | 2.438 |
| 12 | 5.660 | 5.421 | 5.197 | 4.988 | 4.793 | 4.611 | 4.439 | 3.851 | 3.387 | 3.013 | 2.708 | 2.456 |
| 13 | 5.842 | 5.583 | 5.342 | 5.118 | 4.910 | 4.715 | 4.533 | 3.912 | 3.427 | 3.040 | 2.727 | 2.469 |
| 14 | 6.002 | 5.724 | 5.468 | 5.229 | 5.008 | 4.802 | 4.611 | 3.962 | 3.459 | 3.061 | 2.740 | 2.478 |
| 15 | 6.142 | 5.847 | 5.575 | 5.324 | 5.092 | 4.876 | 4.675 | 4.001 | 3.483 | 3.076 | 2.750 | 2.484 |
| 16 | 6.265 | 5.954 | 5.668 | 5.405 | 5.162 | 4.938 | 4.730 | 4.033 | 3.503 | 3.088 | 2.757 | 2.489 |
| 17 | 6.373 | 6.047 | 5.749 | 5.475 | 5.222 | 4.990 | 4.775 | 4.059 | 3.518 | 3.097 | 2.763 | 2.492 |
| 18 | 6.467 | 6.128 | 5.818 | 5.534 | 5.273 | 5.033 | 4.812 | 4.080 | 3.529 | 3.104 | 2.767 | 2.494 |
| 19 | 6.550 | 6.198 | 5.877 | 4.584 | 5.316 | 5.070 | 4.843 | 4.097 | 3.539 | 3.109 | 2.770 | 2.496 |
| 20 | 6.623 | 6.259 | 5.929 | 5.628 | 5.353 | 5.101 | 4.870 | 4.110 | 3.546 | 3.113 | 2.772 | 2.497 |
| 25 | 6.687 | 5.973 | 5.973 | 5.766 | 5.384 | 5.195 | 4.891 | 4.121 | 3.551 | 3.116 | 2.773 | 2.499 |
| 30 | 6.743 | 6.359 | 6.011 | 5.829 | 5.410 | 5.235 | 4.909 | 4.130 | 3.556 | 3.118 | 2.775 | 2.500 |