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OCCASIONAL PUBLICATION
COST OF CAPITAL
(AN APPRAISAL OF CONCEPTS AND PRACTICE)

Guruprasad Murthy

In the corporate goal formulation process, maximisation of the economic welfare of shareholder is the predominant desideratum. Effective fulfillment of this goal will naturally depend on the wise Management of the 'SOURCES OF FINANCE (Funds) and USES OF FINANCE (Funds). A project absorbs funds, acquired from different sources, during the gestation period. The different sources through which funds are acquired in a corporate situation include, broadly categorising, 'Ownership Capital' and 'Creditorship Capital'. In order to ensure that the assets portfolio, qualitatively and quantitatively satisfies the corporate end objective of shareholders' wealth maximisation it is necessary to lay down quantified bench-mark which can be used as a fundamental standard of financial performance against which proposals for long term uses of funds* can be assayed. Thus, we need a performance norm which can be used as a cut-off point to separate projects which merits allocation of funds from those that do not deserve funds allocation. In this segregation of projects between the said categories it., to be ensured that deserving projects yield a 'result-resource' ratio (a percentage rate of return) which exceed the cost of the different source of finance absorbed by the project. As a starting point, therefore, there is a need to evolve suitable inputs which can make possible the computation of cost of capital (or cost of different sources of finance severally and jointly). And the cost of capital in turn is used as an input in arriving at the Minimum Acceptable Rate of Return which acts as a cut-off point to distinguish between deserving projects and undeserving projects.

The minimum acceptable rate of return represents the minimum expectations from proposals claiming use of funds. Thus, it is not difficult to trace the logical relationship between the cost of capital and the minimum acceptable rate of return. The latter will always be greater than or equal to the former and both shall be expressed in a percentage rate of return form. It should be further clear that the minimum acceptable rate of return should be set below the cost of capital.

It is, the purpose of this paper to
(a) identify the information and concepts relevant to compute the cost of capital and lay down the minimum acceptable rate of return;
(b) provide suitable measures to express the cost of capital and the minimum acceptable rate of return and
(c) ascertain the practices prevailing in India, regarding the computation and use of the cost of capital

COST OF CAPITAL DEFINED:

Bierman and Smidt have defined cost of capital "as a weighted average of the cost of each type of capital is the ratios of the market value of the securities" representing that source of capital to the market value of all the securities" issued by the company. "The cost of capital is that rate of return which the enterprise is expected to earn on its investments so as to maximise the economic welfare of the shareholders."
Thus, we can say that:
(a) the cost of capital requires information relating to the price tag attached to different sources of funds.
(b) the final expression of the cost of capital is in a percentage form. Hence the information provided as inputs to compute the cost of capital shall necessarily be expressed in a percentage form.
(c) the cost of the different sources of finance is eventually averaged and presented as a composite cost. Further, the proportion of each source of finance to the total sources is also taken cognisance of for purpose of weighting. Hence, we need information which aids 'WEIGHTING AND AVERAGING'.
(d) the computation of cost of capital can rely on market value of the different sources of finance. In the alternative, the book value can also be used. So, information relating to book value and market value of the different sources of finance will be required.

The computation of the cost of capital, therefore, required information relating source of finance, price-tags to be attached to each source of finance, proportion of each source of finance to the total sources, the book-value/market value of different sources of finance.

**SOURCES OF FINANCE**

Sources of finance, to reiterate, may be classified as 'Ownership Capital' and Creditorship Capital'.

Ownership capital includes:
(a) Equity share capital;
(b) Preference share capital;
(c) Retained earnings;
(d) Depreciation, Depletion and Amortisation.

Creditorship Capital Includes:

(a) Debentures;
(b) Institutional/Individual loans (term lending institutions and public deposits);
(c) Accounts/Bills payable.

In so far as this paper is concerned, the relevant source for discussion will be the long term sources of funds. The cost of short term sources of finance outside the scope of this paper.

**COST OF BORROWING OR DEBT:**

The cost of debt capital can be identified with the periodic servicing charge i.e. the 'INTEREST RATE'. Here we may distinguish between privately placed debts and publicity raised debts. In the event of debts being privately placed the cost of debt may be defined as the contracted rate of interest. However, the interest so obtained required adjustment for TAXES in as much as 'INTEREST' is a tax-deductible charge to income. Hence, the cost of capital in general and debt in particular has to be computed on an after tax basis. The influence of taxes must be considered.

* The term security includes common and preferred stocks and all interest bearing Liabilities, including notes payable. Beirman & Smidt, The Capital Budgeting Decisions P—144.
Thus, the relevant concept used to measure the cost of capital is the TAX ADJUSTED COST which may be algebraically defined as (1-t)i where t = marginal tax rate and i = interest cost of privately contracted debt. So, if the interest rate if 10 per cent per annum and the marginal tax rate equals 60% per annum the tax adjusted cost of debt defined as (1-t)i will result in a tax adjusted burden of (1.6)i .1 i.e., .04 or 4 per cent. The implied assumption in the above computation is that the entire interest cost (100 per cent of the interest paid) is allowed as a tax deductible item. This assumption is valid by and large although not in every case. Thus, in the case of public deposits, the central Budget of (1975-76) has disallowed for tax purposes 15 per cent of the interest paid on public deposits. In other words only 85 per cent of the interest paid on public deposits is allowed a tax deductible item. To quote the Finance Minister, in this budget speech of 1975-76, "The levy of a tax under Interest-Tax Act, 1974 on interest received by scheduled banks has had the effect of increasing on an average, the cost of borrowings from scheduled banks by about one per cent. The levy of this tax has, therefore, made the acceptance of deposits by non-banking non-financial companies of deposits by non-banking non-financial companies from the public all the more attractive, especially in the context of the selective credit control measures adopted by the Reserve Bank. Some corrective by way of a dis-incentive to borrowing from the public by these companies seems to be indicated so that credit planning according to the priorities laid down by the Government is not defeated. I propose, therefore that in computing the taxable income of non-banking non-financial companies, only 85 per cent of the interest paid by them on public deposits will be allowed as expenditure for tax purposes". The above proposal is now a legislative enactment under the Income Tax Act. Thus, in terms of S 40 (A) (8). "For and from the assessment year 1976-77, 15% of interest paid by non-banking non-financial companies on deposits received by them from the public will not be allowed in computing the total income subject to certain exceptions". In the event of the restriction of the fiscal relief to 85% of the interest paid on public deposits the formula for defining the tax adjusted cost is (1-t). 85i+015i

where t is defined as the marginal tax rate and i = interest cost. The 10 per cent interest cost burden which was diluted to 4 per cent by the formula (1-t)i, will now work out as follows:

\[ (1-t) \times .85i + .15i \]

\[ = (1-t) \times .85i + (.15 \times .19)i \]

\[ = (.4 \times .085) + (.15 \times .01) \]

\[ = .340 + .015 = .049 \text{ or } 4.9 \text{ per cent}. \]

The tax adjusted cost of debt is, therefore, functionally, related to the interest rate. The interest rate ceiling on convertible debentures is 13.5 per cent and the interest rate ceiling on non-convertible debentures is 15 per cent. Again, the interest rate ceiling on public deposits is 15 per cent.

Accordingly, the cost of each one of the said sources of debt will be different depending upon:
(a) Whether we use the formula
   \[(1-t) i + [(1-t) .85 i + .15 i]^{*}\]
(b) the interest rate and
(c) the relevant tax rate.

Now, insofar as debt which is publicly placed is concerned the concept of measuring the cost of capital is the same as the privately placed debt. However, the inputs used to influence the arithmetic of the amount of debt and the interest rate can vary. Hence, the computational modalities will undergo a change. For privately raised borrowings the contracted rate of interest is used. For debt which is publicity placed the market yield or the contracted rate can be made use of.

In the computation of the cost of debt, which is publicly placed quotations regarding the market price, would be used in addition to the coupon rate (contracted rate of interest) and the book value of the debt. Thus, if the company has raised debentures which may have a face value of Rs. 500,000 at the time of issue (say 1-1-1980) and the coupon rate (contracted interest rate) is 12 per cent per annum. Let us say, further that the debenture is being quoted at a market price of Rs. 120 per debenture with face value of Rs. 100.

The question now is which if the above pieces of information should be the relevant inputs to compute the tax adjusted cost of the debenture finance and further what is the tax adjusted cost of debenture interest—Thus, we can have either is (a) market rate concept or (b) coupon rate concept. If the market rate is used, the tax adjusted cost of debt will \((1-t) i\) with \(t = \text{yield (interest — market price per debenture)}\) is \((1-6) .1\) or \(.04\) (say 4 per cent).

However, if the coupon rate of 12 per cent is used the tax adjusted cost of debt would be \((1-6) i\) i.e., \((1-6) .12\) or \(.12\) \(x\) \(.4\) i.e., \(.048\) or 4.8 per cent. Thus, the tax adjusted cost of debt when the 'MARKET RATE' is used differs (is lower) from the tax adjusted cost of debt when the 'COUPON RATE' is used. The choice between the coupon rate and market rate is a question left to the attitudes of decision makers and to some extent the information evaluators. It is believed in some quarters that current cost should be used for current decisions, rather than historical data. The cost of debt is the current yields, prevailing at the time of calculations, instead of the contracted rate. The yield is preferred because the debt scrip may be quoted at a premium or discount. As Joel Dean opines that "The first step in finding the company's cost of capital is estimate for the relevant time period the market value of debt".\(^4\)

Therefore, the odds are very heavily placed against the use of the coupon rate. It may be prudent to use the market information, compute the yield and ascertain the tax adjusted cost of debt, in the manner presented above. But there is another point of view too. Given the tax adjusted cost of debt based on the 'Market Value' concept and 'Book Value' concept a question arises as to what is the end purpose served by the above referred tax adjusted cost of debt. There can be two purposes. One management can use it to ascertain the cost of borrowed funds to aid financial decision making. In such situations the relevant tax adjusted cost of debt is the 'Book Value/Coupon Rate' concept rather than the market value concept. This is

\(^*\) With effect from the assessment year 1986-87 the provision relating to disallowance of a portion of the interest paid by companies on their deposits is to be discontinued. (1986-87 budget papers Govt. of India)
because management are not concerned, really speaking, with the market value of the debt portfolio. They are interested in the periodic incidence of interest charges caused by the debt contracted over the life of the debt. And this incidence or liability to pay interest to the creditors is an independent function of the market value of the debt portfolio.

The second use of the cost of the debt is to aid individual investors who are holders of debt in terms of their respective personnel investment portfolios, to shift from one asset to another based on the investment opportunities. In this case, the relevant concept is the tax adjusted cost of debt based on the market value/yield. Because if alternative portfolios in the market can fetch a higher return than the yield from the debt portfolio, the investor question. Of course, the investor would naturally prefer the status quo if yield in alternative investment outlets do not compare well with the present yield. In fact, in such cases the phrase cost of capital is a misnomer. What we are talking about is the benefits of holdings on the debt in lieu of alternative assets. Because the interest on the debt is the income or benefit to the debt holder. And further the tax rate which is relevant is the tax rate of the individual/s concerned. Thus, if we adopt the above approach we can arrive at the followings possible conclusions:

1. for Corporate investment decisions which are likely to absorb debt capital as a source of finance the relevant concept to ascertain the cost of capital is the book-value and coupon rate; and

2. for investment portfolio decisions, where debt is one of the several alternative portfolios the yield concept will be the relevant and also the right kind of input.

**PREFERENCE SHARES**

Preference Shares, in accordance with Section 85 of the Companies Act are those shares which have a preferences over the equity shares with respect to repayment of capital and payment of dividends. The periodic consideration payable to the preference shareholders is labelled as 'DIVIDENDS'.

'Dividends' are appropriations charged to the Profit and loss Appropriation, Account unlike 'Debt' which is an expense debited to the Profit and Loss Account. So, the question of tax deductibility does not arise in the case of dividends. Further, insofar as preference shares are concerned the periodic dividends payable on preference share is regulated by Government directives. The directive, "The rate of dividend on preference share does not exceed the rate notified by the Central Government from time to time as applicable to such securities...." Further, in pursuance of sub-clause (ix) of Clause 5 of the Capital Issues exemption order 1969... the Government have increased with immediate effect the rate of dividend on preference shares to be issued under the authority of the said order as that rate which does not exceed 11 per cent per annum (12.9.1974). Again, on 6.11.1981 the Central Government increased with immediate effect the rate of dividend on preference shares from the existing 11 per cent to 13.5 per cent. And with effect from 19th May 1984, the ceiling on the dividends payable to preference shareholders is raised to 15 per cent.

4. Joel Dean, Capital Budgeting p. 45
Considering the salient features of the preference shares as mentioned above, an important input required to compute the cost of preference shares will be the rate of dividend stipulated at the time of the share issue. And the maximum rate, prescribed in the existing Government directive/s, is the ceiling on the dividends payable on preference shares as a source of capital. However, the choice between the ‘Coupon Rate’ and the ‘Yield’ (dividends per share — Market price per share) still remains. Since we have said earlier that the use of the marker information i.e., the ‘Yield’ is relatively more acceptable proposition the same fact holds true for preference share too. Now, given a preference share with a face value of Rs 100 and contracted dividend rate of 15 per cent per annum two points need be noted:

(a) if the coupon rate is used the cost of preference share capital is 15 per cent; and

(b) if the yield is used the cost of preference share capital will be dividends per share — market price per share or Rs. 15 — Rs. 90 i.e., 16.6 per cent (Assuming that the preference share of Rs. 100 face value is quoted below par at Rs. 90 (say))

XIII.6 COST OF SHAREHOLDERS EQUITY

It may not be of place to mention that the concepts concerning the cost of equity capital are rather mysterious, compared to the concepts relating to cost of debt and preference shares. As Joel Dean has aptly put it “The cost of equity capital presents more formidable estimating problems than cost of debt capital”. And again he says - estimates of debt cost can be made highly precise in comparison to the uncertainties of estimating costs of equity capital."

The cost of equity capital can be computed by—

(a) the dividend-yield method;

(b) the earning-price basis;

(c) the cash flow concept.

Dividend — Price Basis

The cost of equity capital is equal to the anticipated periodic return (dividends) by the equity shareholders.

Thus, the future dividends over a number of years can be related to the market price of the share to ascertain the cost of equity capital. This ratio of dividends per share divided by the market price per share is popularly known as the ‘YIELD’. The anticipated dividend is essentially an exercise in forecasting the share-holders expectations regarding the periodic returns on the shares held. And, invariably the forecast about the future performance of the share, with respect of dividends, will be made after taking cognisance of the historic data. As Beirman and Smidt say—

it is not unreasonable to assume that the stock-holder is in general basing his expectation or the future on the past.

Thus, when the anticipated dividend per share is constant, the cost of equity capital may be defined as —

5 Joel Dean, Capital Budgeting, p. 47 and p. 46
(Ke = D/P)

Where, Ke = cost of equity capital
D = dividends per share
P = market price per share

So, if D = Rs. 10 per share and market price per share is Rs. 150/- the cost of equity capital is (Rs. 10/ - Rs. 150) i.e., 6.6 per cent. The above formula holds true only if—

(a) the dividend per share is constant;
(b) the dividends are assumed to flow in for an indefinite number of years; and
(c) no bonus shares are issued.

It may be observed that if dividends paid, for some reasons zero, the cost of equity capital, according to the definition is ZERO. In the yield method, there is an underlying implication that as dividends tend to zero the cost of capital also tends to zero. Also, the above formula as it stands, ignores growth consideration.

But, the share holders along with the stock market sentiments, are likely to expect favourably changes in the dividend rates. Therefore, the above formula has to be modified to build in the anticipated growth component. The revised formula can be presented as follows:—

ke = D / P + G

Where, Ke = cost of equity capital
D = dividends per share
P = market price per share
G = anticipated annual percentages rate of increase in future dividends.

Assume that the current dividend is Rs. 12 per share whose face value is Rs. 100 and market value is Rs. 120. Also assume that the anticipated increase in the annual percentage dividend rate is 4.

Ke may then be computed as —

(12/120 + 4) per cent or 14 per cent.

If the yield basis is not acceptable as a measure of the cost of equity capital, the alternative is a slightly broader version. Thus, the cost of equity capital can be defined as the earnings per share divided by the market price per share.

OR

(ke = E/P)

Where, ke = cost of equity capital
E = earnings (profits after interest, taxes and dividends on preference share.
P = Market price per share.

The numerator represents the results expected by the shareholders from the shares, which may be based on the latest available historic data, or average past performance plus anticipated changes. The denominator shows the resources to be committed at market prices. The earning price ratio has the following characteristics:—
1. it influences the stock market prices of the shares;
2. the numerator shows the results expected by the shareholder;
3. the denominator indicates the sacrifice the shareholders is willing to make to continue to hold or to acquire the portfolio;
4. a low ratio indicates that the shareholder is willing to make a big sacrifice for a low return and vice-versa;
5. it is yardstick used in financial analysis and signals the attitude of the existing shareholders and potential investors.

There is a school of thought which believes that the cost of capital is not the earnings-price ratio but the incremental earnings before taxes required to sustain the market price of the share divided by the monetary investment in a project.

It is submitted in this regard that the above formula has not considered the cash flow aspect in dealing with the cost of equity capital. If the cash flow concept is introduced the formula to measure the cost of equity capital can be presented as follows:—

Profit after Interest taxes and dividends on preference shares + Current Depreciation
Shareholder's Equity + Accumulated Depreciation

in conclusion, we may say-------

(a) If the future is likely to resemble the past the earnings price ratio is not a ‘bad index’, of the cost of equity capital;
(b) If the future is bleak, an earnings price based on historic trends may be rather high resulting in an unduly strict standard with respect to the use of equity capital.
(c) If the past has been characterised by poor performance the earnings price ratio may be a rather loose standards to be allowed as a norm to justify the use of equity capital.

Joel Dean has vehemently criticised the practical utility of the “earnings-price”. He says—

“The most universally used measure of the cost of equity capital is the ratio of current prices to current earnings, which would seem to be irrelevant from either management’s or the market’s view point. Its implication about investor sophistication namely, that the market expects current conditions to continue indefinitely — is hard to accept.”

NOW. A COMPOSITE COST OF CAPITAL — WEIGHTED AVERAGE COST OF CAPITAL:

We have just discussed the cost of different sources of finance individually viz. debt, preference shares and equity shares. But the fact remains that we have not yet arrived at a single measure of the cost of capital. Suppose, the tax adjusted cost of debt is 8 per cent, the cost of preference shares 12 per cent and cost of equity capital 23 per cent. Are we justified in saying that the cost of capital is 45 per cent. The answer is ‘NO’.

6 Joel Dean, Capital Budgeting, p. 48.
In a live capital structure while we do encounter the different sources of finance, the proportion of each source to the total rupee value of the capital structure varies. Hence, the figures should be appropriately adjusted according to the relative importance of source vis-a-vis the total sources of finance. This adjustment for relative importance takes place by a process of WEIGHTING which attaches a weight to each source of finance in the capital structure. Thus, if we have three principal sources of finance viz. debt, preference shares and owners funds and use the following symbols.

KO = Composite cost of capital  
Ki = Cost of debt  
Kp = Cost of preference shares.  
Ke = Cost of shareholders equity.  
W1 = Proportion of debt capital to total capital.  
W2 = Proportion of preference share capital to total capital.  
W3 = Proportion of shareholders equity to total capital.

We can say that—

\[ W_1 + W_2 + W_3 = \text{or 100 per cent} \]

and \[ KO = KiW_1 + KpW_2 + KeW_3. \]

The Ko so arrived at is the **weighted average cost of capital** and is the sum of the products of the cost and weights identified against each source of finance. Accepting the above 'modus operandi', it may be noted that the rates used as price tags and weights employed to quantify relative proportion of each source of finance to the total, the cost of capital can be arrived at using HISTORIC DATA/MARKET DATA.

Given that the cost of debt = 8 per cent, cost of Preference Shares = 12 per cent and Cost of share-holders equity = 25. And further that \[ W_1 = 50\%; W_2 = 10\% \text{ and } W_3 = 40\% . \]

the weighted average cost of capital (KO)  
= \[ KiW_1 + KpW_2 + KeW_3 \]  
= \[ (.08 \times .5) + (.12 \times .10) + (.25 \times .40) \]  
= \[ .04 + .012 + .1000 \]  
= \[ 4\% + 1.2\% + 10\% \]  
= 15.2 per cent.

**Practices of Respondent Companies**

It is now proposed to present the practices of respondent companies relating to:

(a) Existence or otherwise of the idea of the ‘Cost of Capital’, and  
(b) Uses of Cost of Capital.

The concept of the cost of capital seem to be fairly well known, although not very popular, amongst the respondent companies in as much as while 72 per cent of the companies did calculate to cost of capital, 28 per cent (i.e., more than one fourth of the respondent companies) did not regularly use the cost of capital. However, including the two companies which calculated the cost of capital only for large projects and three companies which calculated the cost of capital rarely though, the total number of companies which make use of the idea of cost of capital comes to 41 (or 82 per cent of the respondent companies).
It is interesting to observe, from the comments of the companies using the concept of the cost of capital some redeeming features:

(a) Only ten companies made explicit mention about the use of the weighted average cost of capital, the others were silent rather than reticent.

(b) Only five companies made explicit mention of the tax implications and related adjustments in the computation of the cost of capital. Perhaps, the companies are reticent to disclose the use (sometimes misuse) of the tax advantages concomitant to different sources of finance.

(c) Companies did make use of short-term source of finance for long-term uses in flagrant violation of the nice text-book principles of financial management.

The Companies not using the cost of capital also had interesting comments to make. Thus,

(a) Surfeit of cash justified ignoring the cost of capital. The company is aware of the concept, but the financial position being comfortable, the scientific computation of cost of capital has not been attempted. The need just does not arise. The company had, on several occasions, cash balance of not less than a crore of rupees.

**TABLE 1**

<table>
<thead>
<tr>
<th>Number of Companies Using Cost of Capital</th>
<th>Nos. of Companies</th>
<th>% to 50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculate Cost of Capital</td>
<td>36</td>
<td>72</td>
</tr>
<tr>
<td>Calculate Rarely</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Calculate only for large Projects</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Do not calculate Cost of Capital</td>
<td>9</td>
<td>18</td>
</tr>
</tbody>
</table>

(b) Rigorous computations concerning cost of capital are done only for the personal satisfaction of individuals. To quote the company: Recommendation of the finance department of a particular mix of source of finance based on cost considerations are rarely accepted. Thus, rigorous financial analysis based on cost of finance is conducted for personal satisfaction of the individuals concerned.

(c) Only the source and mix of finance are considered because the Minimum acceptable rate is deemed to be much in excess of the cost of capital. Hence, it is generally taken for granted that the project will earn more than the cost of finance. In fact, it is approved only if this condition is met with a reasonable margin.

(d) Sources of finance are considered but the cost of finance is neither computed nor used. The sources of finance are considered to the extent of the leverage required and the extent of capital incentives available. The cost of finance is not directly used during the evaluation.

(e) Construction industry practice provides advanced from clients and other sources, hence, cost of finance does not bother the companies. The company commented as follows: “In construction industry, a

* Fifty companies responded to various question on “Cost of Capital” and its use in practice.
certain percentage of project cost is initially paid as an advance to the contractor, being the customers' (clients') initial investment in preliminary work. Advance is also secured from the project authorities for purchase of heavy machinery on hypothecation arrangements. This may be the guarantee by the bank and carry certain percentage of interest for working capital. The company depends on bank finance for purchase of machinery. In the case of the economy wanting to own machinery I.D.B.I. deferred payment facilities are used. However, the economics of alternate sources of finance are also worked out when tendering for a project, but the cost of capital, per se, is not computed."

(f) This is done by the Finance Division which consolidates the central, the central, regional and divisional proposals into total company proposals and then prepares a ways and means budget. This budget includes — funds generated, funds required, funds available for capital expenditure. In the case of deficit, it is met by Share Capital/Bonds, Term Loans, Overdrafts, Fixed Deposits and Short Term Borrowings. This also gives an idea of the corporate hurdle rate.

<table>
<thead>
<tr>
<th>TABLE 2</th>
<th>Use of Cost of Capital in Respondent Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nos. of Companies</td>
<td>% to 50</td>
</tr>
<tr>
<td>Measure economic-worthiness, project viability and calculate internal rate of return</td>
<td>29</td>
</tr>
<tr>
<td>Optimal use of Internal Resources</td>
<td>1</td>
</tr>
<tr>
<td>Select Lending Institutions</td>
<td>5</td>
</tr>
<tr>
<td>Debt servicing Potential</td>
<td>3</td>
</tr>
<tr>
<td>Capacity to Commit Funds</td>
<td>3</td>
</tr>
<tr>
<td>Did not calculate Cost of Capital</td>
<td>9</td>
</tr>
</tbody>
</table>

Given the cost of capital, a question which immediately arises is the use made of the cost of capital Table 2 presents the different purposes to which the cost of capital is put to in the respondent companies. The responses were revealing. 58 per cent of the respondent companies use the cost of capital to measure the project viability and capacity to offer a rate of comparable to the cost of capital. Of the 29 companies, not less than ten companies used the cost of capital as a starting point in the discounting process to arrive at the internal rate of return. Nine companies did not have anything to say because they just did not compute the cost of capital. However, the remaining 12 companies had some unique things to say relating to the use of cost of capital.

(1) One said that the cost of capital is used as an input to ensure optimal resource allocation between competing uses of funds.

(2) Three companies use the cost of capital as a target rate and the debt servicing potential of the project in assayed vis-a-vis the said target rate.
Five companies use the cost of capital to identify the cost of alternative sources of finance and select the cheapest source (individual/institutional) source of finance.

Three companies use the cost of capital as a benchmark against which the capacity to commit funds is measured. Given the cost of capital, two aspects are simultaneously taken care of:

(a) can the project cash flows sustain the obligations concomitant to the funds raised; and

(b) can the company afford to commit funds of a given amount by borrowing and incurring interest/amortisation obligations? Or should the company wait for super-normal situations where the situation of surfeit cash increase the capacity to commit funds and reduces, the obligations on accounts of interest/amortisation?

Another company said that they use the cost of capital to know the following:

(1) terms and conditions of finance;
(2) convertibility;
(3) rate of interest; and
(4) security required

The project viability is as sayed against the overall terms and conditions of the sources of finance. Companies which used the cost of capital to perform the routine function of arriving at the hurdle rate in assaying investment proposals said as follows:

(a) Identifying cost and benefits of the project. Sources and mix of finance determine the cost of finance. The cost of finance is used for comparison with the discounted cash flow rate of return.

(b) To assess project economic performance, in terms of liquidity and profitability.

(c) The weighted average cost of capital (after taxes) is used as a cut-off point to assess the project viability.

(d) The availability and cost of finance are usually the sole dictators as to whether the project is to be implemented or not. This is so because the other factors in project evaluation in a special environment like ours can usually be fairly accurately estimated and controlled. The control is often exercised not merely by the company but by the Central Government, too. Finance, however, is often not easily forthcoming and, therefore, constitutes the key factor.

**MINIMUM ACCEPTABLE RATE RETURN**

The earlier section has highlighted the concepts concerning cost of capital and also pointed out the prevailing practices regarding the computation and use of cost of capital. We are now set to identify the conceptual inputs required to arrive at the minimum acceptable rate of return which is defined as a rate which is greater than or equal to the cost of capital. So, the question arises, how to go about identifying the inputs required, given the cost of capital, to arrive at the minimum acceptable rate of return.

In arriving at the minimum acceptable rate of return, a company may wish,
in fact will invariably like, to distinguish between risky projects and not so risky projects. Projects which are risky are bound to require a threshold rate which is above those used for other projects regarded as not so risky or relatively less risky. The required rate of return on a turn et lathe is different from that of a newly initiated venture, say in Nigeria, or Vietnam.

Again, there are some companies which allow for gradation in hurdle rate. The gradation is functionally related, once again, to the risks. It is not difficult to find companies having at least two cut-off rates, one for the normal risk projects and another for the high risk projects. Some companies go a step further and grade risk as low (optimistic projects), high risk (pessimistic projects) and normal risk (routine projects). Again, if the company has to take cognisance of liquidity conservation as a part of the appraisal objective, the gradation of projects will be related to the cash generation potential of the project.

So, Projects having a long gestation period and consequent blocking of funds, will have to successfully surpass a higher (Stricter) cut-off point than projects enjoying quick disentanglement of liquid resources.

Contrarywise, if profitability is the guiding factor and liquidity not really important, the above guideline gets altered.

Projects having longer economic lives may encounter, relatively lower cut-off point than projects which are unstable with short economic lives, although both kinds of projects have to surpass the floor rate of return required on new projects.

Of course, the criteria used to lay down the cut-off point in general and multiple cut-off points in particular will vary from company to company depending upon the:

(a) objectives of investment decisions;
(b) techniques used to measure the economic worthiness of investment proposals; and
(c) economic conditions of the company.

Another popular strategy is to use any one or more of the following:
(a) The expected return from new projects;
(b) The actual return from ongoing projects;
(c) The actual return in the industry; and
(d) The target return from ongoing projects.

The expected return from new projects aims at assessing the expectations of management relating to the return on a new project. However, in the absence of a benchmark, the outcome is usually the product of managerial judgement. Due to the non-availability of a ‘norm’ to set the target return, the approach becomes a semantic illusion.

The actual return from existing investment: The actual return is the historic return involving the data in retrospect, while the assessment of a project’s performance relates to the future prospective returns. The computational methodology of the historic rate of return and prospective rate of return is entirely different. Hence, the built-in anomalies pose a serious threat to the tenability of the historic rate of return. The prospective rate of return itself tends to vary, depending on the assumptions made regarding to
inputs (outlays costs, and benefits). And, it is a notorious fact that the historic rate of return stemming from the accountant’s records also tends to be diverse, depending on the accounting policies.

Further, even if the historic rate and prospective rate are in fact comparable, this method itself would encounter formidable objections and practical implementation difficulties.

The next concept for establishing a cut-off point is actual return of the industry. Instead of using the actual return on the existing investments in the company the cut-off point is being linked with the historic performance of investments in an external situation, viz. the industry. Thus, we can have a variety of industries in an economy and a variety of hurdle rates. If a company has multi-product/multi-divisional business, each product/division can draw its own independent inspiration from the respective industry to arrive at the cut-off point. It may be noted that in this method, we are making an assumption that the retrospect performance is adequate as an input to establish performance norms for prospective projects. But the odds against the industry return are also rather heavy. First, it is a statistical index only. It does not show the hurdle rate with respect to investment opportunities. It speaks of average performance of a group of firms operating in the industry in question. However, a particular company is concerned with what funds are available to it and what investment opportunities it comes across. And it is a question of matching the demand for funds with the supply of funds. If demand for funds is greater than supply, and the latter is a serious constraint, some prospective proposals may have to be suspended if not totally rejected. Should demand be less than the supply of funds, the excess capital may go begging for want of effective suitable investment outlets. That is all that can happen. And in either case, the industry performance does not really matter. To quote Terborgh “A valid investment threshold must be found in the relation between the company’s own investment opportunities and its own financial availabilities. It is internally derived. Accordingly, it can be borrowed neither from other companies nor from the industry as a whole.”
Brief History of Stock Exchanges

Although the oldest stock market in the world to come into existence was the Amsterdam Stock Market in the beginning of the 17th Century, the backbone of this market was the shares of the United East India Company and West India Company formed to trade with India. These companies even used to pay at times dividend in Indian spices instead of in cash.

Trading in securities used to take place in India towards the close of the 18th Century. It was, however, the severe depression that followed the exciting period of boom during the American Civil War that led to the formation of The Stock Exchange, Bombay, in July, 1875 when a few native brokers resolved "upon forming in Bombay an association for protecting the character, status and interest of native share and stock brokers and of providing a hall or building for the use of the members of such Association". As elsewhere in the world, stockbrokers of Bombay also used to assemble under the trees to transact business. It was only in 1895 that the Exchange moved to its present premises on Dalal Street where the huge 28-storeyed building is presently located. Being the tallest building so far in Bombay, it may well prove to be the skyline for Bombay for decades to come.

The Bombay experiment was later followed by other industrial centres in the country and Stock Exchanges came to be established at Ahmedabad in 1894, at Calcutta in 1908, at Indore in 1930, at Kanpur and Nagpur in 1940, Hyderabad in 1944, at Delhi in 1947 and at Bangalore 1957.

Excepting in the erstwhile presidency of Bombay which had the Bombay Securities Contracts Control Act, 1925, in operation since the 1st January, 1926, under which the Bombay and Ahmedabad Stock Exchanges were recognised and the erstwhile princely state of Hyderabad which had the Hyderabad Securities Contracts Control Act, 1944, under which the Hyderabad Stock Exchange was recognised, Stock Exchanges in India remained unregulated till the 20th February, 1957, when the Central legislation viz., the Securities Contracts (Regulation) Act, 1956, came into force throughout the country. Prior to that, however, under the Defence of India Rule 94-C promulgated in 1943, Stock Exchanges throughout the Indian were prohibited from offering facilities for carry-over transactions and other than ready delivery transactions—ready delivery transactions being defined as those which had to be fulfilled by delivery and payment within seven days of the date of the contract.

Recognised Stock Exchanges

Under the Securities Contracts (Regulation) Act, there are twelve recognised Stock Exchanges located at Bombay, Calcutta, Delhi, Madras, Ahmedabad, Hyderabad, Bangalore, Indore, Cochin, Kanpur, Pune and Ludhiana. Stock Exchanges situated at the first seven centres enjoy permanent recognition while others have been conferred with temporary recognition for five years at a time. Three more recognised Stock Exchange at Rajkot, Jaipur and Gauhati are likely to be set up in the near future. A new