CONCEPT OF CAPITAL STRUCTURE

The preceding chapter has been wrapped with the evolution and growth of Iron and Steel Industry in India. The present chapter aims at building up of a conceptual background of the study. As such, it contains the concept of capital, capital structure, cost of capital, financial leverage and optimal capital structure. It also deals with the capital structure theories, determinants of capital structure, analysis of capital structure of PEs and PvEs in general, study on debt-equity (D/E) ratio norms and recent studies on capital structure of PEs.

CONCEPT OF CAPITAL

Generally speaking, the term, 'capital' implies the source of income. In business terminology, it is taken to consist of resources used to generate income or profit. Resource refers to something, tangible or intangible, owned like assets or not, exchangeable or otherwise, but fully or partially controllable by the user. Plant, inventories, etc. are the examples of tangible, owned and exchangeable resources, while goodwill is an intangible resource, contracted skilled labour and leasehold properties are resources not owned, installed equipment and human/super capital created by job-oriented training are inexchangeable resources, again, human capital stands for a partially controllable resource of a
firm. In other words, capital is the produced means used for further production of wealth. However, the resources referred to above are designated as the real capital in the 'economics' sense as opposed to monetary claims on them, such as bonds and stocks. Real capital is created only when new plant or equipment is constructed or manufactured or greater inventories are accumulated or land is altered or human skill is developed and the like. Thus, the assets with which the business operations are carried on to generate income are known as real capital distinguished from financial capital, the monetary counterpart. To a businessman, total investment in physical properties and valuable intangibles as well, employed in business for a return is the capital; while to accountants, capital represents proprietorship — share capital plus reserves and surplus, i.e., the net worth in case of joint stock company, capital account and current account in case of partnership firm and capital account in case of sole proprietorship firm, i.e., only ownership fund is referred to as capital by the accountants; whereas in legal documents, capital refers to the stated par value of the firm's capital stock. However, the real capital signifies the 'asset' concept, while financial capital connotes the 'fund' concept. In our work, by the term 'capital' we propose to adhere to the 'fund' concept whereby fund includes both equity and debt used to acquire real capital to generate income. In fact, the real capital and financial capital are the two sides of the same coin. Of course, the financial capital, not
committed to assets and not pressed into service, is passive capital. The capital may be of different types. But, basically it is of two kinds — internal and external. Internal capital refers to the funds like retained earnings consisting of reserves & surplus, provisions, proposed dividend and bonus share capital mostly belonging to the owners of the business, while external capital denotes the funds like share capital, debenture, intercorporate loan, institutional loan, bank loan, public deposit, etc. that emanate from outside the business. External capital may, again, be subdivided into ownership capital and creditorship capital. Share capital belongs to the former group, while the rest form, the latter group. Further, the former is recognised as the variable risk-bearing as well as dearer fund, while the latter is identified as fixed risk-bearing and cheaper fund. However, preference share capital as such, poses a problem. It's a hybrid security. It contains the features of both ownership capital and creditorship capital. It is ownership capital inasmuch as the return payable goes by the name of dividend and is not tax deductible and the firm has no compulsory financial obligation towards service charges, i.e., it involves no financial risk. It takes after creditorship capital in the sense that its rate of return is prefixed, it enjoys priority over equity both in respect of payment of dividend and return of capital, and it also offers leverage benefits. To measure the effect on earnings per share (EPS), it should be included in debt but if leverage is taken for a measure of financial risk, its
inclusion in debt is questionable because it does not give birth to risk equally with debt. Pertinently, Bombay Stock Exchange Official Directory and Barges studies favour to include it into debt, while ESRF, RBI and ICICI studies like to include it into equity and Pandey has used it in both the ways. Weston and Brigham also suggest its inclusion into equity from creditors' stand-point and in the debt from the equityholders' view-point. We, however, opt to include it in debt in our sample companies in view of the situation that SAIL has no such capital at all and TISCO, having such element in the capital structure, does not bother so much about financial risk as about the leverage benefits.

From the stand-point of variability of cost of the capital, it appears that some are fixed cost-bearing, such as preference share capital and debt, while some are variable cost-bearing like equity share capital and retained earnings. Not only that, owing to the variations in the degree of risk-bearing, debt fund is cheaper than preference capital which, again, is cheaper than equity capital. The cost of debt is further reduced due to its tax deductibility. Here lies the secret of optimal capital structure of a firm and this warrants the need for making an optimal capital structure to minimise cost of capital and maximise value of the firm. Incidentally, capital may also be grouped into long-term and short-term categories in accordance with its maturity. Of course, some are keen on adding medium-term with the above
classification. Funds, required to be liquidated within one accounting period, in between one and five years, after five years are known as short-term, medium-term and long-term capital respectively in India. However, this classification is not treated as a water-tight compartment.

Before taking up optimal capital structure, it seems consistent to deal with the concept of capital structure, cost of capital and financial leverage.

**CONCEPT OF CAPITAL STRUCTURE**

Capital, as indicated earlier, is composed of one or more elements, the formation of which conceives the idea of capital structure. Structure is a scientific term. It is used in chemistry to denote the formation of atoms in a molecule. Therefore, capital structure may be defined as a mix or mess of different types of capital raised from different sources to minimise cost of capital and maximise value of the firm. However, capital structure basically represents the proportionate relationship between the different forms of financing. In other words, it denotes the pattern or make-up or design or arrangement or composition or ratio of various organs of capital. Traditionally, it is distinguished from financial structure which refers to the entire 'capital and liabilities' side of the balance sheet, thus, indicating the means by which the total assets of the business are financed, while capital structure traditionally includes the
long-term sources only. Accordingly, latter is a part of the former. But with the passage of time, new ideas have emerged and, as a result, the difference is not maintained so rigidly. Some experts are inclined to include short-term loans along with long-term funds, while some others intend to mingle capital structure totally with financial structure by including trade credits too. However, some experts still hold the traditional view of capital structure. We are in favour of inclusion of short-term loans along with long-term funds as the former carry some interest and involve leverage effect — return and risk, form a part of fixed assets in many cases and assume character of long-term funds through the continuity of their flow into the business, at least to the extent below which their amount never falls. But the inclusion of trade credits merely on the plea of their prior claim over the owners during liquidation finds no justification as liquidation of a firm is an extreme situation. It follows, again, from the above discussion that capital and capital structure are not equivalent. The former refers to the whole volume and quantity, while the latter purports the pattern and quality.

However, capital structure may be of two types — simple and complex. It is simple when it is composed of only equity source including retained earnings. But as soon as a firm uses debt finance with equity, it turns complex. Simple capital structure is common to all new firms, at least in
the Pves. As a firm grows, it feels the necessity for more and more funds on the one hand and it secures goodwill and confidence to collect debt fund on the other. Then, the debt fund permeates into the capital structure which, as a result, gets transformed into a complex one.

**CONCEPT OF COST OF CAPITAL**

The cost of capital, as indicated earlier, is an important concept in formulating a firm's capital structure, provided the latter affects the former. Being one of the basic corner-stones of the theory of financial management, in recent years it has received a considerable attention. Accordingly, two major schools of thought having basic difference on the relevance of this concept, discussed later on, have emerged. Therefore, it is essential to form an idea about the cost of capital.

Cost of capital, in absolute terms, refers to the difference between what is received from and what is paid to the capital supplier. More candidly, it is the minimum rate of return required by the capital supplier, Government or private, for his parting with the fund which, when employed in the production process, is consumed and recovered by rotation involving a 'time-lag' between each consumption and recovery. As 'time-lag' is a must to recover the employed financial capital degenerated into cost, viz., material, wage, etc., capital supplier gets deprived of the possession of the
fund. Naturally, he claims a minimum rate of return. Needless to mention that the cost of capital is also ascribed to each unit of production. However, different experts defined cost of capital in different languages. According to Gordon, 'The cost of capital for a firm refers to a discount rate with the property that an investment with a rate of profit above or below this rate will raise or lower the value of the firm', while Hampton asserts, 'it is not really a cost as such, rather it is a required return on new capital project that may be available to the firm — the minimum rate required to be earned on a new capital project to keep the value of the firm unaffected' and Durand states that the formulation of a working definition of capital cost necessitates reformulating a good deal of basic and generally accepted economic theory. Apart from the above operational definitions, in economic terms it refers to borrowing or lending rate. However, it is the weighted average of the cost of each type of capital whereby weight of each type of capital indicates the ratio of the market value of the securities representing that source of capital to the market value of all the securities issued by the firm. As such, sale of assets is also regarded as a source of funds. Therefore, each source has a cost of its own, whether explicit or implicit. The cost of each source is known as specific cost. When such specific costs are combined, it is called composite or combined or overall or weighted cost of capital or simply cost of capital. The explicit cost of any source is the discount rate that
equates the present value of the net cash inflows with the present value of expected cash outflows in the form of interest, dividend, repayment of principal and given by the formula:

\[ I_0 = \frac{C_1}{(1+K)^1} + \ldots + \frac{C_n}{(1+K)^n} \]

Where, \( I_0 \) = amount of fund invested or cash inflows at time 0, i.e., initial investment, \( C_1 + \ldots + C_n \) = total expected cash outflows and \( K \) = discount rate appropriate for the risk involved. Thus,

1. cost of debt = \( \frac{C_i}{I} (1-t) \), where \( C \) = interest (assuming debt as a perpetual feature of the business), \( I \) = net proceeds from the issue, \( t \) = tax rate. Incidentally, interest is tax deductible, hence its cost is further reduced by the tax rate;

2. cost of preference capital = \( \frac{C'_i}{I} \), where, \( C'_i \) = preference dividend, \( I \) = net proceeds from the issue;

3. cost of equity share capital = \( \frac{E}{I} or \frac{D}{I} + g \), where, \( E \) = earnings on equity, \( D \) = equity dividend, \( I \) = net proceeds from the issue, \( g \) = growth rate of \( E \) or \( D \), as per case;

4. cost of retained earnings is identically equal to that of equity capital when it is assumed that these are invested in the firm itself. It may be measured in the same way as equity share capital. But if it is assumed that the shareholders would have invested the dividend on receipt, its cost would have to be adjusted by the marginal tax rate of the
shareholders and the floatation cost as well. However, it refers to implicit or opportunity cost. Mere costing of specific sources would not do, as debt financing not only adversely affects firm's potential of using debt in future by way of proportionately lowering its equity base, but also enhances cost of equity by creating risk to shareholders and equity financing enlarges its potential for debt financing. Because of this inter-connection between the methods of financing and their costs, weighted average cost of capital would stand one in good stead. It may be arrived at by the following formula:

\[ K_0 = K_e \cdot \frac{S}{V} + K_d \cdot \frac{D}{V}, \]

where \( K_0 = \) weighted average cost of capital, \( S = \) market value of equity capital, \( D = \) market value of debt, \( V = \) value of the firm, \( K_e = \) Cost of equity, \( K_d = \) Cost of debt.

**CONCEPT OF FINANCIAL LEVERAGE AND TRADING ON EQUITY**

The use of fixed cost sources of funds like debt and preference capital is described as use of financial leverage and is generally considered to be synonym of the term 'trading on equity'. Use of debt fund in the capital structure formulation means the use of financial leverage which signifies the ability of a firm to use fixed financial charges to magnify the effects of changes in earnings before interest and tax (EBIT) on the firm's EPS. Therefore, it is related to the effects of changes in EBIT on the EPS. In fact, the basic idea in employing the financial leverage is that the
owners of a firm can enjoy a higher rate of return on their capital than that earned by the firm on its total capital by using fixed cost sources of funds, provided the rate of fixed cost is less than the overall rate of return on the firms' total capital. Again, leverage benefits accelerate further as a result of rise in the D/E ratio and/or the EBIT. Benefits accruing from the rise in the former is called 'trading on the equity' or 'balance-sheet leverage' and gain arising out of rise in the latter is perceived to be 'leverage' or 'income-statement leverage'. Although the primary motive behind the use of leverage is to magnify EPS or ROE, the eventual target behind its use is to enhance market value of the firm and minimise the cost of capital. The other incidental gains, emerging from its use, are that it helps (i) maintaining flexibility in the capital structure, (ii) preventing dilution in control, (iii) having funds suitably when the economy is at its lowest ebb and the firm has no adequate retained earnings at its disposal. Hence, a trading firm has an inherent right to borrow even without written authority in the memorandum of association.

But debt financing is not an unmixed blessing. In unfavourable conditions, i.e., when the EBIT starts falling, it starts working in the opposite direction, i.e., it also magnifies the loss to equityholders. Its presence in the capital structure of the firm results in a commitment to pay fixed cost of capital and part or whole of principal which
causes return on equity to be more variable and increases the probability of risk of ruin or insolvency in case of failure to pay fixed commitments. Moreover, increased use of leverage increases financial risk even under favourable conditions. This, in turn, increases cost of capital, $K_o$. Higher D/E ratio has a negative correlation with profitability. Hence, capital structure decision has an important bearing on the profitability and survival of the firm. As it may make or mar the object of firm's value maximisation and the profitability, its judicious use is profoundly contemplated and is a must — hence the question of a balanced capital structure does arise.

**OPTIMAL CAPITAL STRUCTURE**

A capital structure is designated as optimal when it results in the minimisation of cost of capital, $K_o$, implying firm's value maximisation in terms of share price, $V$. Capital structure decision influences 'return and risk perception' of the investors at the margin who, in turn, determine the share price. Greater the return perception, the greater is the price of share and the lower is the $K_o$. Again, greater the risk perception, the lower is the share price and the greater is the $K_o$. In other words, as long as return perception exceeds the risk perception, it increases share price and decreases $K_o$ and vice versa. A trade-off between the two takes its own course eventually. This trade-off point
represents the lowest Ko and the highest $V^{39}$ which is the result of a certain D/E ratio which, in turn, is identified as the optimum capital structure for a firm. In fact, a firm's value is a function of an earnings stream and the Ko used to discount it. Therefore, prima facie, the leverage is increased as long as it goes to add to EPS or ROE without increasing financial risk. At this very moment, one thing must be borne in mind that an analysis of D/E ratio alone may be deceiving. An analysis of the magnitude and ability of cash flows relative to fixed charges is extremely important in determining capital structure of a firm.\(^40\)

Indeed, capital mix decision-making is a very crucial task due to variability in, and variations of, work-environment. Neither a single capital structure can be an optimal capital structure for a firm for ever, nor can there be a universally applicable model capital structure. Thus, an optimal capital structure varies from case to case, from time to time. Notwithstanding such complexities, each firm in the Pves always strives its level best for maintaining its D/E mix at an optimum level. However, capital structure affects the value of the firm by exerting its influence more on cost of capital than on EPS.\(^41\) But some experts contend and opine that cost of capital is not governed by capital structure. Therefore, it is necessary to have an idea about the capital structure theories put up in the following pages.
CAPITAL STRUCTURE THEORIES

There are different opinions, as pointed out, as to the influence of capital mix on cost of capital and, in turn, on value of the firm. On the one hand, traditional approach, for a long time, has been convincingly contending that value of the firm and/or cost of capital are affected by the changes in capital mix. On the other hand, Modigliani and Miller logically assert that these are independent of capital structure. These two divergent views are the variations of the net income, NI, approach and net operating income, NOI, approach originally developed by Durand. The sum and substance of the approaches may be outlined in the following languages.

NI Approach

The essence of the NI approach is that the risk perception of the investors does not change with the use of debt. So, cost of equity, Ke, and that of debt, Ki, remain constant and the increased use of debt results in decreased Ko and increased market value of shares due to cheaper cost of debt. However, a critical point may be reached beyond which Ko may rise for increase in the Ke and Ki.

NOI Approach

NOI approach, on the other hand, assumes that Ko remains constant, i.e., it is indifferent to changes in D/E ratio
and Ke tends to rise with the increase of debt indicating risk perception of the equity investors at the margin. Ko does not rise for this as because this rise of Ke is just sufficient to offset the gain of cheaper source, debt. Thus, there is no single point or range where the capital mix is optimum. But it is possible that beyond a high level of leverage the Ki may rise. In such a case, the Ke will have to fall to keep Ko constant.

Traditional Approach

It is the most sophisticated version of the NI approach. It suggests that Ko is a function of capital mix. It can be reduced by the judicious mix of debt and equity. An optimum capital mix exists for each firm. It is held by the traditionalists that debt fund is cheaper than equity fund and Ko will fall with the use of leverage. To the traditional position, the manner in which the Ko reacts to changes in capital mix can be divided into three stages:

1. Ke remains constant or rises slightly with debt for the added financial risk. But it does not rise fast enough to offset the benefits of low cost debt. At this stage Ki remains constant or rises negligibly. Consequently, Ko begins to fall.

2. Once the firm has reached a certain degree of leverage, increases in it have a negligible effect on Ko, because increase in Ke offsets the advantage of low cost debt.
Within the range of such debt level or at a specific point, the Ko will be minimum and V will be maximum.

iii. Beyond the acceptable limit of leverage Ko begins to rise with leverage. Because Ke rises by more than enough to offset the benefit of low cost debt and Ki may also rise as the creditors also may feel risk at this stage of excessive leverage. Thus, Ko is a function of leverage, i.e., first falling and after reaching a minimum point or range it would start rising. This point or range indicates the optimum capital mix of the firm.

M-M Hypothesis

It stands by NOI approach with its strong behavioural support. They argue, but for tax, Ko remains invariant to capital mix changes. As such, they assume that capital markets are perfect indicating a scope for free trading of securities, free borrowings without additional restriction, rational behaviour of the investors, no transaction cost; firms can be grouped into homogeneous risk classes implying that the shares of firms of homogeneous class would be perfect substitutes for one another; dividend payout ratio is 100 percent; investors have homogeneous expectations as to EBIT and there is no corporate tax (removed later).

Given the above assumptions, M-M argue that, for homogeneous firms, the total market value is given by capitalising the EBIT, NOI, by the rate Ko appropriate for that risk class.
That is, \( V = \frac{\text{EBIT}}{K_o} \). As EBIT is calculated before interest and \( K_o \) is equal to the capitalisation rate of a pure equity stream of its class, EBIT and \( K_o \) are independent of D/E mix. Hence, \( V \) is also constant.

Again, M-M argue that \( K_e \) is equal to a constant \( K_o \) plus a risk premium that depends on the degree of leverage, i.e., \( K_e = K_o + \text{Risk Premium} \). The premium for financial risk is equal to the gap between pure equity capitalisation rate, \( K_o \), and cost of debt, \( K_i \), times the D/E mix, i.e., \( K_e = K_o + (K_o - K_i) \) (D/E). In short, the firm's \( K_e \) rises in a manner to offset exactly the gains of low cost debt. As leverage increases, \( K_e \) also increases. It implies a linear relationship between \( K_e \) and D/E ratio. Thus, though \( K_i \) is less than \( K_e \), use of leverage will neither reduce \( K_o \) nor raise \( V \). They argue that in the event of variation of \( K_o \) or \( V \), if any, between homogeneous firms, arbitrage process ensues. The shares of overvalued (levered) firm are sold out, and that of undervalued (unlevered) firm are purchased by the investors. The process continues until \( K_o \) or \( V \) of the two firms equate with each other.

However, M-M postulations are not unanimously accepted and the major objections raised against them are that transaction costs do exist; personal leverage cannot be the exact substitute of corporate leverage, personal leverage poses extra risk, in the event of liquidation of a levered firm, all investors lose to the extent of investment in shares.
only, but if one engages in arbitrage transactions there is the possibility of losing not only the holdings in the unlevered firm but he will also be liable to return the amount of his personal loan; the debt capacity and ability to procure debt must vary from an individual to a company; institutional restrictions may withstand arbitrage process, institutional investors who hold the lion's share of the capital market are debared from engaging in 'homemade' leverage; the corporate tax exists to help reduce Ko.

With the introduction of corporate tax M-M change their position and agree that Ko or V is a function of D/E ratio or leverage, as interest is a tax deductible expense. Levered firm will have a higher value and it is higher by an amount equal to debt multiplied by the tax rate. In a world of corporate taxes the Ko goes on declining and V goes on rising with the rise of leverage, they opine. Of course, being embarrassed, they do concede that a firm should adopt a 'target debt ratio' so as not to violate limits of leverage imposed by creditors. M-M, thus, offered full-fledged behavioural support to NOI approach by assuming, inter-alia, the absence of corporate tax in 1958 and later in 1963 they coincide totally with NI approach assuming the presence of corporate tax.

It may, candidly, be noted that even after allowing for tax effect the Ko declines with increase in leverage. However, on the background of these theoretical postulations, some
empirical studies for optimal capital mix were undertaken. Nevertheless, Brigham observes⁵¹, 'Although a great deal of empirical work has been done on the exact relationships among leverage, value and cost of capital, it has not produced definitive results; while the research has established that there are benefits to be had from going zero to some positive level of debt or from extremely high debt-equity ratio to a somewhat more moderate amount of debt, the research has not been able to pin-point the optimal amount of debt. So, establishing the target capital structure remains a matter of informed judgement' and the word optimum should be replaced by the term appropriate.

PEs AND ITS CAPITAL STRUCTURE

Here it would be pertinent to have a discussion on the nature of capital mix of PEs. It may be called up that a PVE happens to start with a simple capital mix following the principle of corporation finance. But, as time rolls on, its capital mix turns complex either for the dearth of internal resources to combat the expansion programme or with a view to trading on equity under favourable condition or for fear of Government interference or takeover on the plea of its making monopoly profits, should the firm go in for financing out of retentions or in hand to keep the control of the firm undiluted or in order to maintain flexibility in the capital mix of the firm or with the object of minimising Ko
and maximising V. But do these considerations apply in case of PEs making capital structures complex? Certainly not. Of course, paucity of retained earnings may compel debt financing instead of equity financing in many cases as the former involves less stringent procedures than the latter. In the context of financing of PEs, doubts have been expressed as to whether the considerations of capital mix applying to PPEs hold good in case of PEs on the basis that: Government is usually the sole supplier of equity as well as loan capital and it bags all - dividend, interest and tax simultaneously; cost of equity and debt is considered to be the same. For the same reason that Government is both the owner and creditor, the question of trading on equity does not arise and is meaningless. On the contrary, there is not yet a clear-cut Government policy statement as to the objective and obligations of the PEs. Very often the operational management of the PEs are enjoined and made to pay more heed to the social considerations such as creation of employment opportunities, distribution of goods and services at low prices, export promotion, import substitution, regional development and so on. Thus, profit goals in terms of return on capital employed are forced to be relegated to the secondary consideration in case of PEs. Hence, the question of trading on equity or maximisation of EPS is absolutely self-contradictory. Again, fear of Government intervention, loss of control is prevalent in such companies by dint of section 617 of Joint Stock Companies Act, 1956 which requires that Govt.
must hold more than fifty per cent of the paid-up share capital of such companies. Besides, the question of keeping the financial risk at minimum while utilising leverage is also absurd on account of the same reason that Government is the owner and the creditor at the same time of the PEs. Lack of fear of such risk is also evident from the fact that Government introduced the norm of D/E ratio as 1:1 in 1961, to be followed by each PE from its very inception unless there were exceptional reasons to the contrary, but it failed to introduce till April 1970, any systematic cash flow analysis to be undertaken for deciding the desirability of having equal amount of debt and equity in the PEs' financing. Moreover, Central Government Companies are allowed to capitalise the interest on loan due during the period of construction to the extent provisions are made for this purpose in the approved project report. Apart from that, interest holidays are sanctioned in many cases. For instance, HSL borrowed from the Government Rs.300 crores free of interest. All these are done on social considerations. In this way, the question of financial risk as such, also stands meaningless. Again, firm's value is a function of earnings stream and Ko used to discount it. But, if the said earnings stream is intentionally kept reduced on the ground of social good, as has been pointed out, the need for minimising Ko loses all its bearing. In such circumstances, it is quite irrational and inconsistent to believe that the policy to have complex capital mix in PEs, has been the outcome of any aim of minimising Ko or maximising
V or EPS, particularly when it is believed that the rationale for a wholly owned state enterprise cannot be sought in terms of return on capital employed in the sense, the term is applied to the PvEs.\(^6^0\)

Therefore, the introduction of complex capital mix in PEs since inception is most possibly due to Government's desire to show true economic cost by levying appropriate interest charges which, it goes without saying, is a charge against profit; to debar the internal management of the PEs from having easy money for, and time in, making profit, i.e., to have a check on its efficiency; to maintain uniformity in the capital mix of all PEs, which, mention may be made, could have also been maintained without making it complex; to facilitate frequent supply of fund as supply of Government finance in the form of loan concerns less paraphernalias. Incidentally, Government considered the Ki to be equal to Ke. Therefore, the complex nature of capital mix of PEs is neither due to an attempt to bring about optimality in the capital mix, nor can it be assumed to be prompted by the consideration of expediency in financial management usually noticed in PvEs.

As a sequel to Government's obsessive decision of introduction of D/E ratio as 1:1 from the very commencement of PEs to maintain uniformity or for any other reason enumerated above and in absence of any specific provision in the articles of association of the Government Company with respect
to the nature of source of initial capital\textsuperscript{62}, many of the Central Government Companies like BHEL, HAL, IOCL, etc., have been provided with loan capital ab initio in contravention of generally accepted principle of corporation finance\textsuperscript{63}. Obviously, it would react dreadfully, particularly in cases where the debt capacity for want of earning capacity, due to long gestation period, stands in the way of servicing debt charges. Part of excessive accumulated interest would have to be forgone or capitalised. The capitalisation of interest which is not a generally accepted accounting principle\textsuperscript{64} will not only overstate profit or understate loss of the company but will go to inflate its capital mix artificially also. Such an effect on D/E ratio can neither be attributed to internal management, nor is this an outcome of free managerial activities aiming at an optimal capital mix. Thus, the capital mix of PEs, which have turned complex as a result of Government decision, can hardly bring forth any further benefit to PEs. Rather, it will enhance the burden of PEs. Particularly, the payment of interest on loan capital would in the long run act upon the financial health and overall performance of the PEs. Total amount of interest may happen to contribute conspicuously to the negative net operating results of the firm and may lead to cash losses even. That is why, even a circular issued in 1968 admits that the loan component of capital has a direct bearing on the profitability and it intends that this fact should be taken into account in the preparation of feasibility studies and DPR, so that right D/E ratio may be decided for the project\textsuperscript{65}.
Cost of Capital vis-a-vis Capital Structure of PEs

As the Government Companies employ people's money, it naturally involves social cost. Besides, the 'time lag', in the process of consumption and recovery of financial capital, the mother of cost of capital, cannot be done away with in case of PEs also. Hence, it appears illogical to underestimate the role of cost of capital in the capital mix of PEs. But it can neither be gainsaid nor can it be overstated that there are some bars in the way of minimising and equalising marginally the unit cost of capital and the scope for minimising Ko is all together absent, as because its internal management is kept cypher. It has nothing to do with the designing of its own capital mix, a prey to Government policy and guidelines. So, it cannot regulate Ko. The calculation of Ko of PEs poses a problem for a number of reasons: (a) The securities of Government Companies are not usually allowed to be traded in the market. Pertinently, only in a few cases, such as the shares of Fertilizer and Chemicals (Travancore) Ltd., Cochin Refineries Ltd., Scooter India Ltd. and debentures of HMT Ltd. are allowed to be quoted in the National Stock Exchanges. (b) The companies are usually of loss making character. (c) Even if profit is earned, it is either too poor to allow the declaration of dividend or dividend is not declared at all to retain the earnings. For instance, at the end of March 1987, out of 154 running Central Government Companies, only 70 could make net profit after tax, again,
out of 70 companies only 42 declared dividend. (d) There are many cases where, as stated earlier, the companies fail to pay interest. (e) Interest rates are, again, not uniform. Frequent revision of interest rate, capitalisation, excuse, moratorium, interest holidays, etc., are common features of interest on PE-loan. (f) The growth rate of dividend is also unascertainable. In view of the above, the question of obtaining an optimal capital mix remains obscured in case of a PE, as the process of minimisation of Ko cannot easily be followed or worked out. But it does not necessarily mean that Ko is non-existent or indeterminable here.

In case, soft loans or interest holidays or moratorium on interest payment or low interest rate is granted to a PE on social consideration, calculation of cost of capital is not totally impossible. It will simply lower the cost, in case low rate of interest is charged. If interest holidays are granted, it will make the loan capital costless, so far as explicit cost is concerned. Therefore, cost of debt of a PE is ascertainable though it may amount to low cost or nil cost. Absence of profit or dividend, again, matters a little. This will result in nil cost, so far as explicit cost of equity is concerned. This problem may be overcome by substitution method also. The dividend declared or profit earned by a similar PE can be substituted for dividend or profit of the PE concerned. The same process may be resorted to surmount the difficulty arising out of absence of growth rate.
To pacify the trouble of absence of market price, the technique of 'Accounting Valuation of Shares'\textsuperscript{73} may be utilised.

The reasons behind this situation are (i) absence of clear-cut clarity of objectives and financial obligations of PEs coupled with over-stress on non-commercial obligations of PEs, (ii) excessive zeal of some PEs like Bharat Heavy Plates and Vessels Ltd., Bharat Dynamics Ltd., etc., who earned profit but did not declare dividend during 1984-87\textsuperscript{74}. More interestingly, Indian Oil Blending Ltd. earned 82.5 per cent, 87.5 per cent and 137.5 per cent of equity during 1984-85, 1985-86 & 1986-87 respectively but paid dividend not exceeding 10 per cent which appears very low in view of the rate of its earning, (iii) absence of any possibility of the flight of any capital from such PEs arising out of persistent non-payment of dividend or payment of dividend at a lower rate because of holding of their equities by the Central Government.

Thus, it may be deduced that cost of capital of PEs can be worked out, whether it turns into a representative one or not. That PEs have cost of capital can by no means be denied. In some cases it may work out to be the true opportunity cost, while in many occasions it may not. Under such circumstances, optimisation of capital mix cannot be taken to have prevailed in the enunciation of the Government policy for uniform D/E ratio, especially in the absence of a scope for trading of securities of Government Companies in the market.
Relevancy of Capital Structure Decision in PEs

As the contextuality in case of PEs is essentially different, considerations of financial risk, cost of capital and the like may matter less but determination of capital mix of PEs should be guided to a great extent, by certain more pragmatic considerations like its far reaching impact on profitability, managerial zeal and efficiency, the cost-consciousness and image of the PEs. To reiterate, interest on debt is a charge against profit, while dividend on equity is an appropriation of profit. To the firm with poor net cash flow, low earning capacity and long gestation period, loan capital works out adversely. It not only adds to the charges on the profit during construction periods, but even thereafter, the cash outflows on account of interest may wipe off all or most of the profits also. On the one hand, it will bring down the profits of such PEs and on the other hand the payment of interest may affect their liquidity position. To the contrary, as the PEs, usually providing basic goods and services, can never be allowed to earn high profits on the ground that the Government has forgone its dividend in gestation period, loan financing finds favour even in gestation period. Another argument is that each PE should pay an opportunity cost of the resources used by it. To avoid an element of subsidy to the users of PE-products, there is a case for preferring debt to equity. Besides, debt financing makes the management serious. But equity makes it either calous or clever by creating an
impression of easy money or by leading to a tendency to falsify the performances by creating dubious reserves to show that it has been doing well, is not non-existent in India. Equity dividend which cannot be claimed as a right, can be avoided or provided at a reduced rate, as noted before. But equity financing has also a silver lining. It offers hidden subsidy to PEs and enables the management of the PEs to accumulate reserves which may help to improve its public image and financial strength as well.

As social obligations outweighs commercial obligations in case of PEs, the inability to earn enough to remunerate equity may not be as conspicuous as would be its failure to meet social obligation. Of course, PEs may avail themselves of subsidies even through loan capital if the rate of interest charged is kept lower or even nil for a short run. It is suggested by a former director of the Fertilizer Corporation of India that all capital after gestation should be treated as loan and return should be expected on the entire capital employed. We must admit the suggestion as sound as anything else, at least theoretically. Convertible or redeemable preference share capital being a hybrid component of capital may satisfy one and all. It will neither be a burden to the PE during its distress nor will it deprive the Government of dividend as and when the firm becomes viable. Besides, Government may secure better rate of return through preference capital than through debt finance.
Therefore, in view of respective merits and demerits of the components of capital from the standpoint of firm, its management and Government, a proper balance of different elements, keeping the social considerations, earning capacity, capital intensity, stage of operation, etc., in view, is badly solicited, but for which, the image of PEs must be ruptured and tarnished. Profitability, depressed by heavy interest burden, unnecessarily provides a room for criticism, as the public, press and parliament judge the efficiency of the PEs generally by the net profits they earn. Unsound financing decision, in addition to damage to the image of the PEs, acts upon cost-consciousness, efficiency-mindedness of the internal management of PEs.

That loan capital has a direct bearing on profitability, as may be recalled, has also been recognised by a Government circular in 1968. The Government, accordingly, decided in 1970 to reduce the interest burden of the PEs and the capital mixes of PEs were reorganised. The entire expenditure on townships was financed with equity. In some long gestation and difficult projects also, the Government revised its formula of D/E ratio of 1:1 and converted the loans into equity of Tannery and Footwear Corporation and Fertilizer Corporation of India Ltd. in 1981 and 1982 respectively. However, determination of a proper D/E ratio in case of PEs is as difficult as in the case of PvEs. Moreover, a blanket ratio for all industries or all firms in the same industry is
neither possible nor desirable. Even a single ratio for a single firm may not be conducive for a long time. With the change of work-environment, the ratio becomes obsolete. The experience of standing 1:1 ratio proved unrealistic and coal industry pleaded for its revision. The revision of the ratio towards a more realistic one had been under active consideration of the Government.

It follows from the above discussion that each Government Company should also be endowed with a judicious capital mix to conserve its profitability, prestige and, in turn, to ensure its survival and growth. As such, while designing the capital mix of PEs some special considerations which seem conspicuous to them ought to carry appropriate weight. Firstly, its aim and objective differ to a great extent from that of PvEs. Its primary objective is to render service and not to maximise profit. Hence, it has to carry on many activities either non-profitable or service-oriented. Again, most of the PEs involve long gestation period as they are of basic and capital intensive nature, which are characterised by low profitability. Moreover, on the same ground, it has to invest a lot, for township, roads, hospitals, schools, clubs, etc.—yielding no return, for the well-being of its employees. By the same token, it has to distribute goods at a very low or no profit margin, bring about regional balance of development, render basic services to the vast multitude of poverty-striken people, lay infrastructure to accelerate
economic growth by pulling out the down-trodden economy out of the problems of unemployment of human resources as rapidly as feasible. Secondly PEs, unlike PvEs, are under direct and constant influence of Government. Obviously, there is a heaven and hell difference between the requirements for funds of a PE and that of a PvE.

Under such a backdrop, it seems indispensable that initial funds of a PE are provided in such a manner as ensures enormous scope for its operational efficiency and flexibility on the one hand and enables the Government to bag profit, should there be any, on the other. This twin-objective can be well-secured then and then only if capital is supplied to the PEs either in the form of grants with necessary power of the Government to appropriate their profit, as and when it is earned or in the form of equity shares. Also, convertible or redeemable preference share capital, as mentioned earlier, may suit to a T. Followed this strategy, prima facie, the firm would be placed in a comfortable position to secure capital free of cost and its obligation in respect of servicing capital would depend on its earning capacity and inclination of the board of directors to pay dividend. Even if it seems unacceptable and debt financing is deemed fit, as stated before, interest holidays, at least in the initial years is strongly recommended or the service charge on loan may be kept at a very low level at least in the short-run to impart desired degree of flexibility in the operation.
Alternatively, gestation grants should cover investments in township, land, building, etc.; equity should meet the charges on electric installation, water arrangements and such other infrastructural needs; loans should encompass plant and equipment required. In this direction, it is emphatically advocated that PEs are created out of the tax payers' money whose reward lies first in the creation of the PEs themselves and subsequently in its contribution to the development of the national economy. To assert, it is further argued that since PEs are established not only to secure commercial returns but also to contribute to new and necessary establishments essential for the nation's economic development, these firms must be given the adequate scope for establishing themselves even at the cost of considerable shortcomings, if it is so required. For working capital requirements in the operating and expansion stages, if the internal resources fall short, finances from Government and/or bank credit may be availed of, depending upon the Government policy in this direction. In case of capital intensive PEs, particularly basic and key industries involving long gestation period, stage based in lieu of time and asset based financial planning specifying goals, policies and programmes for each stage appears to be more consistent. For expansion, self financing is badly needed. In a developing economy with a limited supply of funds and unlimited demand for the same, PEs cannot be allowed to depend on the Government for financing for all time to come. That PEs should not aim at profit making but
at serving public interest, the long-term finance objective, finds justification only in case of certain service-type firms, but is unlikely to be acceptable as a general policy, particularly in an underdeveloped country like India where the goal is to evolve an economy along socialist line. In such an economy the issue of public interest and profit has to be deliberately fitted to a given development perspective. The best public interest which a PE can serve is, therefore, to fulfil those financial obligations which are determined by current plan and perspectives. PEs in the development process of an economy may be both an ideological and practical necessity and the State, to sustain development efforts and promote growth of self-reliant economy, has to mobilise a large amount of savings. Viewed thus, profits by PEs, especially in underdeveloped or developing countries, are as necessary as desirable. So, the long-term financial objectives of the PEs may be better expressed in terms of attainable rate of profit or profitability. But a single principle can seldom do. The policy of retention will vary with the nature, extent, timing and stage of development of the firm. One cannot fight shy of the impediment in generating internal sources of the PEs of basic nature inviting long gestation lag where prices are required to be kept low on social, political and economic considerations. Generation of internal sources depends more on pricing policy of the Government than on operational efficiency of the PE. Of course, there is no excuse for operational inefficiency of PEs which have
still been in the red since inception under the guise of pricing policy. Hence, a high-powered expert committee should thoroughly probe into the inter-relationship between pricing, efficiency and subsidies to PEs. Price should also be fixed, so as to enable PEs to generate internal resources sufficient for replacements at least, if not for expansion. Though it is consistent that the PEs should be divested of heavy interest burden and ornamented with sufficient equity cushion to ensure its flexibility in operation, profitability and capacity to absorb the shocks of business cycle, simultaneously it is of immense importance that the PEs are not allowed to grow irresponsible towards investors. As such, to have an idea about what the community forgoes for non-declaration of dividend, it is, of course, recommendable that some rules and norms should be laid down and some way must be found out for introducing the concept of notional provision for dividend in the accounts of PEs somewhere else away from the balance sheet. Also a norm is to be evolved regarding the policy of company reserves, as many of the PEs have reserves without meeting the cost of capital leading to investment of non-payments of capital instead of reinvestment of reserves. As to the sources of fund which will be dealt with in detail in the next chapter, it may be stated that the Government should provide alone, in the absence of any suitable substitute, in any form like grant, equity, loan repayable and interest bearing or non-repayable and interest bearing or non-repayable and non-interest bearing and convertible or
redeemable preference shares or convertible cumulative preference shares at the most. In fact, in whatever form the fund is supplied, it should, in no case, be motivated solely by the ROI as it is not the sole criterion of the PEs. As regards D/E ratio, as mentioned earlier, no blanket rate can do as the PEs vary from one another in various ways and each PE varies from time to time with its work-situation. That is why, capital mix of PEs should be adapted, as nearly as possible, to its particular earning features, current and future needs, liquidity. Heavy capital intensive industries inviting long gestation period and characterised by low profitability like Iron and Steel, heavy engineering, fertilizer, cement, etc., should have a D/E ratio of 0:1. The CPU in its general review of PEs in 1973-74 noted from the Secretary, Ministry of Steel & Mines that heavy and continuous losses sustained by the unit eroded public confidence, that on an equity of ₹600 crores in HSL, i.e., SAIL, the Exchequer got back about ₹700 crores by way of interest and excise duty. Accordingly, the committee concluded that it had no doubt that the Government would take all aspects into account while reviewing the capital mix of PEs, particularly those which have a long gestation period and are serving basic developmental needs and are not allowed freedom of pricing policy. Ordinary commercial and industrial firms should have a D/E ratio of 1:4, while PEs with greater stability of earnings like public utilities may be decked with a D/E ratio of 3:2. The financing in 1:1 D/E ratio in general is sure to
jeopardise the firm's profitability. Incidentally, it may be mentioned that HSL involving 36 per cent of total investments in PEs had been provided with Rs.531.5 crores of debt and Rs.552 crores of equity resulting in a D/E ratio of 0.96:1 in 1967-68 when 10 promotional and developmental firms were also heavily burdened with a D/E ratio of 2.65:1 and in 1966-67, HEC had a D/E ratio of 3:1 - instead of 0:1 and in 1967-68, 54 ordinary commercial and industrial running firms excluding HSL had a D/E ratio of 6:5 in place of 1:4. In the year 1967-68 the average D/E ratio of PEs stood at 0.90:1'. Thus, the defective capital mix is one of the reasons of unhealthy state of the PEs including SAIL. A recent study also shows that during 1973-87 the D/E ratios were 52.63:47.37 in PEs in general and 0.66 in Steel, 0.73 in minerals and metals, 0.67 in petroleum, 0.73 in chemicals and pharmaceuticals, 0.95 in coal - the basic materials; while in capital goods the ratios were - 1.49 in heavy engineering, 1.14 in medium and light engineering, 1.34 in transportation equipment and in regard to consumer goods the ratios were - 1.36 in consumer goods other than textiles, 2.21 in textiles and 0.54 in agro-based goods. The study highlights further that out of the cognate groups, as stated above, petroleum and minerals & metals groups belonging to basic materials category and both having same position of D/E ratio as below 1:1 showed different financial performances. While petroleum group had been earning continuously attractive ROE of 19.3 per cent on an average, minerals and metals group had been
persistently in the red, its ROE was only 4.12 per cent on an average. Likewise, medium and light engineering and heavy engineering groups belonging to the same category of capital goods and having the same position of D/E ratio in between 1:1 and 2:1 also exhibited different average rates of return on equity as 8.19 per cent and 0.07 per cent respectively. This is obviously due to difference in the earning capacity of the different groups. It naturally follows from the above discussion that the enterprises having high earning capacity, lower capital intensity and minimum gestation lag can only go in for higher D/E ratio and vice versa. So, the nature of earnings in particular should be the guiding principle for determining the capital mix in case of any firm including PE but not the conventional, arbitrary and rigid policy of D/E ratio. Again, depending on the growth rate of earnings, the D/E ratio should tune with the time. Safety, comfort, convenience, health of a firm including PE rest on its capital mix which can be better compared to a machine with several gears. A financial engineer should make use of different types of securities in accordance with the needs of the situation, just as an engineer has to make use of gears of the machine for its successful running. It cannot be overrated that, while the factors stated so far claim special consideration in the formulation of capital mix of PEs, the other forces - external/environmental or internal/operational & financial features, are also no less important in case of PEs and PVEs as well. The external forces include conditions of
the economy and capital & money market, stage of economic
development, Government policies, etc., while internal forc­
es comprise industrial and legal characteristics, profitabi­
liity, age, size, growth rate, etc., of the firm. The capital
mix that ultimately evolves, particularly in case of PvEs, re­
presents a compromise between the pulls of the internal for­
ces of the firm on the one hand and external forces on the
other. While the external forces can at best provide an ex­
planation only of the general shifts in the pattern of cor­
porate finances in a given period of time leaving the diver­
sity that exists at any point of time in the capital mix of
firms working under the same external conditions unaccounted
for, the internal forces of the firms explain the said diver­
sities.

The nature of industry decides the length and technical
character of the production process, rate of technological
improvements, degree of vertical integration, durability of
product and income elasticity of demand, time-shape of opera­
tions and sales, and customs of trade & type of capital mix
of a firm - which together determine the asset structure and
nature of earnings of the firm governing its capital mix.
Larger the volume of fixed assets (in case of public utili­
ties, basic industries etc.), greater is the need for long­
term fund as well as D/E ratio. Again, greater earning capa­
city entails greater debt capacity.
Sometimes law of the land dictates the size of the firm.
Hence, the private limited companies are smaller than the
public limited companies resulting in which, in case of the former, the size of the fixed assets and long-term fund are smaller and that of the current assets, particularly receivables and short-term fund, as well as tendency to generate internal sources is greater. It leads to a lower D/E ratio of the former as against that of the latter.

As the size of a firm increases, its net worth to total assets and retained earnings to net worth or equity share capital are likely to increase. But the small firms may also have a higher proportion of net worth contributed mainly by equity share capital, as their capacity to borrow or earn is limited. It may even supersede the larger firms in regard to percentage of net worth to total asset, because the larger firms unlike the small ones can resort to borrowing in case they find any deficit due to inadequate surplus. The size of debt capital in larger firms may be greater than that in smaller firms as the former commands greater volume of fixed assets requiring more long-term funds which cannot be totally met by surplus alone. Besides, as indicated, such firms can easily borrow on the strength of sufficient mortgagable assets in possession. To sum up, larger the size of the firm, greater may be the D/E ratio.

The age of a firm determines its volume of internal sources/reserves. The older firms are likely to have greater reserves. It leads to relatively less reliance on long-term debt. Even if such firms feel to cull external fund by way of long-term or short-term debt, they can do it at ease due to the goodwill
acquired over a period of time. Usually, such firms borrow on less onerous terms to finance the relatively larger size of inventories and receivables.

Like age and size of a firm, profitability is also an important determinant of D/E ratio. Profitability determines the size of the surplus and eventually it reduces the portion of capital stock. Again, excessive surplus means less need for debt fund. Viewed from another side, greater profitability indicates greater debt capacity. Of course, volume of long-term debt of a firm depends mainly on its volume of fixed assets. However, ability to repay the debt of the firm is no less important. Again, this ability is a function of profitability rather earning capacity complemented by liquidity of a firm.

Business risk arising out of variability in demand & input prices and firm's capacity to adjust prices accordingly, the extent of fixed cost in the total cost-structure of the firm and financial risk due to use of financial leverage together constitute the total risk of a business. Therefore, greater the degree of business risk, lower would be the scope for D/E ratio and vice versa.

Again, greater the growth rate, the greater can be the D/E ratio. It is possible because the growing company, obviously, with greater earning potentiality and credit standing can enhance debt fund comfortably. Incidentally, reserves and surplus, as is required to be fully utilised either to finance fixed assets or to pay dividend on enhanced new
expansion-oriented capital, is likely to fall during the period of growth of the firm.

Monetary and fiscal policy determining the rate of interest and tax also has an impact on D/E ratio. Greater the rate of interest and tax, lower would be the D/E ratio.

There is no doubt that debt helps maintaining flexibility in the capital mix of a firm. Again, manoeuvrability also includes firm's debt capacity. So, a firm should not use its maximum debt capacity but keep available some unused capacity to raise funds in future when circumstances so require. Thus, the need for flexibility has a keen bearing on the capital mix of a firm.

Similarly, debt helps preventing loss of control. It does not necessarily mean that the use of debt beyond limit will be tolerable as it may lead to restrictions in the loan agreement, nomination of directors in the board and bankruptcy eventually. Hence, desirability of control is also a factor in designing the capital mix of a firm.

Management's attitude, governed by the age, experience, skill, prudence, temperaments, confidence, conservativeness, etc. of the members of the management, equally tells upon the D/E mix of a firm.

Market conditions may also exert its own influence. It may be favourable for this or that issue depending upon the nature of firm, security; general economic condition of the economy; etc.
In short, the factors as such, are not exhaustive. We may use various methods of analysis, none completely satisfactory in itself, but taken collectively, they would certainly furnish enough information to make a rational decision. In the conclusion, it may be stated that the combined effect of a host of forces like industrial and legal characteristics of the firm, its size, age, profitability, stability of income, market condition, liquidity, business risk, financial risk, growth rate, stage of operation, capital intensity, degree of competitiveness, operating efficiency, pricing policy, monetary and fiscal policy, opportunity cost of capital, use of innovative modes of financing, control, flexibility, marketability of security, management's attitude, leverage benefits, etc., of which only some have been discussed, governs the formulation of the capital mix of a firm, PE or PvE.

In case of PEs, due to differences in the contextuality, as has been clarified in detail, the earning capacity, capital intensity, stage of operation, pricing policy deserve special consideration. The whole question of D/E ratio must be kept under constant watch, review and discussion with experts in the full light of known facts, figures and difficulties of a particular firm. An operative design for grouping PEs into homogeneous categories unlike the present one in pursuance of the ARC's report, may be evolved on the basis of the gravity of each force telling upon each firm's capital mix. Finally, it may be stated that financial theory has
not yet developed to the point where data relative to these considerations are fed at one end of a computer and an ideal capital mix pops out at the other. Consequently, human judgement must be used to resolve the many-conflicting forces in laying plans for the types and ratio of funds to be sought.

A Comparative Study of Capital Mix of PEs and PvEs

In the preceding pages we have discussed about the relevancy and determinants of capital mix of PEs vis-a-vis PvEs. Now, it becomes pertinent to examine the capital mix of PEs and PvEs in India to study the nature and basic difference. Incidentally, it is well-noted by Dakshinmurthy and Prasad that there is a basic difference in the sources and methods of financing of PEs and PvEs. Again, it may be stated that the choice of sources is quite broad-based in case of PvEs as compared to PEs. Lion's share of the initial capital in case of the latter emanates from State Exchequer either in the form of grant or equity or loan involving various terms and conditions. Special development fund which is non-existent in India may also emerge as an initial source. Of course, some other sources like bonds, bank loan, institutional loan, intercorporate loan, public deposits, special development funds and internal funds (insignificant) are also being used to meet the subsequent needs of PEs. Yet, State Coffer plays the dominating role. But in case of PvEs State Coffer's contribution is negligible, if not nil, and PvEs procure funds mostly from public issue of securities.
like shares & debentures/bonds of different types and by utilizing bank loan, institutional loan, public deposits, etc., apart from retained earnings which provide significant share in subsequent stages in many cases. An examination of Table 2.1 may throw some light about the basic difference in the sources and methods of financing of PEs and PvEs.

### TABLE 2.1
CAPITAL MIX OF CENTRAL PEs AND 500 NON-GOVERNMENT NON-FINANCIAL LARGE PvEs DURING 1981-83

<table>
<thead>
<tr>
<th>Source</th>
<th>1981-82</th>
<th>1982-83</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PEs</td>
<td>PvEs</td>
</tr>
<tr>
<td>Equity Share Capital</td>
<td>10642 (46) 21233 (17)</td>
<td>13225 (45) 22689 (15)</td>
</tr>
<tr>
<td>Reserves and Surplus</td>
<td>3817 (16) 33824 (27)</td>
<td>5326 (18) 39393 (27)</td>
</tr>
<tr>
<td>Provisions</td>
<td>- (-) 7802 (6)</td>
<td>- (-) 8450 (6)</td>
</tr>
<tr>
<td>Loss</td>
<td>4064 (-17) - (-)</td>
<td>4643 (-16) - (-)</td>
</tr>
<tr>
<td>Net worth</td>
<td>10395 (45) 62859 (50)</td>
<td>13908 (47) 70532 (48)</td>
</tr>
<tr>
<td>Debt</td>
<td>12794 (55) 62537 (50)</td>
<td>15651 (53) 77000 (52)</td>
</tr>
<tr>
<td>D/E Ratio</td>
<td>1.23 0.99</td>
<td>1.13 1.09</td>
</tr>
<tr>
<td>Total Capital Employed</td>
<td>23189 (100) 125396 (100)</td>
<td>29559 (100) 147532 (100)</td>
</tr>
</tbody>
</table>

(Figures in parenthesis represent percentage to total)

**Source:**
(a) Lok Udyog, June 1985, p. 22 - for PEs
(b) RBI Bulletin, November 1984, pp. 817 & 821 - for PvEs — Results combined & computed.
On examination of Table 2.1 it transpires that during 1981-83 the respective average contributions in the total capital of PEs and PvEs of retained earnings (internal capital) were 0.5 per cent and 33 per cent, of equity paid-up capital were 45.5 per cent and 16 per cent, of debt were 54 per cent and 51 per cent. Thus, the significant role of external capital and internal capital in case of PEs and PvEs respectively is well-pronounced. The remarkable contribution of internal capital in PvEs reduced not only the share of equity paid-up capital but also that of debt capital, whereas the poor contribution of internal capital in PEs resulted in greater participation not only by the equity capital but by the debt fund also. Solid base of internal capital of PvEs is both the cause and effect of lower D/E ratio unlike that in PEs where the poor contribution of internal capital is the result but not the cause of higher D/E ratio which is a function of Government obsessive decision, as noted before. It may be noted that the D/E ratios of PEs and PvEs during 1981-83, on an average, were 1.18 and 1.04 respectively.

The nature of changes during the period in the capital mix of both the sectors may be reprojected through Table 2.2 for quick perusal.

It is crystal clear from Table 2.2 that during 1981-83 the percentage contribution of: (a) retained earnings of PEs advanced by 3 per cent and that of PvEs remained stationary; (b) equity capital of PEs dropped by 1 per cent, while that
### TABLE 2.2

**NATURE OF CHANGES IN THE CAPITAL MIX OF PEs & PvEs DURING 1981-83**

<table>
<thead>
<tr>
<th>Source</th>
<th>PEs</th>
<th>PvEs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981-82</td>
<td>1982-83</td>
<td>(+)-ve/%age to total</td>
</tr>
<tr>
<td>Retained Earnings</td>
<td>1</td>
<td>+2</td>
</tr>
<tr>
<td>Equity Share Capital</td>
<td>46</td>
<td>45</td>
</tr>
<tr>
<td>Debt</td>
<td>55</td>
<td>53</td>
</tr>
<tr>
<td>D/E Ratio</td>
<td>1.23</td>
<td>1.13</td>
</tr>
</tbody>
</table>

**Source**: Computed from Table 2.1

Of PvEs reduced by 2 per cent; (c) debt of PEs declined by 2 per cent and that of PvEs rose by 2 per cent; (d) resu-
tantly, D/E ratio of PEs declined by 0.1 and that of PvEs increased by 0.1; (e) that means, increase of retained earn-
ings by 3 per cent in PEs was neutralised by the decrease of equity capital by 1 per cent and of debt capital by 2 per cent. Again, in case of PvEs, the decrease of equity capital by 2 per cent was balanced by increase in debt capital by 2 per cent.

Lastly, it may be stated that the D/E ratio of PEs was not in commensurate with its earning capacity and it prejudi-
cially affected the profitability of PEs so as to reduce the
volume and share of retained earnings. In case of PvEs having solid equity cushion provided mainly by internal capital possessed an average D/E ratio of only 1.04 against the generally accepted norm of 2:1 even less than that (1.18) of PEs having relatively lower equity base which, again, is more or less totally provided by equity capital. Incidentally, several studies\(^2\) show that the D/E ratios in both the sectors have been experiencing upward trend. PvEs with greater debt capacity caused by less social obligation and higher earning capacity may raise its D/E ratio to reap the leverage benefits but there is no justification for raising the same to reduce profitability, image, etc., in case of PEs with lower debt/earning capacity due to social obligation, price policy, long gestation period, capital intensity and the like. Pertinently, the findings of recent studies on capital mix decision and on D/E ratio norms may be considered in the following lines.

**Observations in Studies on Capital Mix**

A study on 'capital mix decision in PEs' was conducted by Kazi-pet and Charry covering central PEs for 1973-87. The following are the observations\(^3\) of the study. (1) Equity played a dominant role in early years in the capital mix upto 1974-75. Since 1975-76 debt continuously dominated the equity. Such an observation had also been supported by the studies of Dr. Banerjee and Dr. Sarker - the study added. (2) Equity position dropped from 53.5 per cent to 48.7 per cent.
continually during the period of study. The average of equity contribution stood at 47.37 per cent during the period. (3) Role of reserves & surplus was insignificant upto 1979-80, thereafter, it showed an upward trend. Its movement was from 10.2 per cent to 18.1 per cent, the average proportion worked out to 12.36 per cent. (4) Despite increasing trend of retained earnings, equity as a whole and equity capital in particular, faced a diminishing trend. As a result, debt consisting of loans and bank credits showed an increasing trend. It increased from 46.5 per cent to 51.3 per cent during the period. On an average, debt shared 52.63 per cent of the total during the period of study. Most interestingly, D/E ratio was in the immediate vicinity of 1:1 norm. (5) Besides, D/E ratio was not in keeping with earning capacity of PEs, as stated before.

Dr. Banerjee shows in his studies that during 1983-88 the D/E ratio of PEs stood at 1.43, bank loan providing 24 per cent of the total debt fund and that during 1984-87, that of PvEs stood at only 1.18, bank loan sharing 43 per cent of the total debt fund. Thus, the instances of higher, rather improper, D/E ratio in case of PEs can be multiplied.

D/E RATIO NORMS

1. Until 13.6.61 there was no insistence on the maintenance of a particular D/E ratio in the Public Sector. On the aforesaid date the Government of India issued a circular advising the administrative ministries concerned with PEs to the
effect that unless there are exceptional reasons to the contrary, the debt-equity ratio should be 1:1\textsuperscript{95}.

2. It may be noted that various all India financial institutions observe as a rule, the debt-equity norm of 2:1 for financing firms belonging to the Private Sector with some relaxations depending on merits of the cases\textsuperscript{96}. Now-a-days, they use to follow D/E norm of 1.5:1 instead of 2:1, followed earlier. But Controller of Capital Issues used to provide his consent for capital issue when the D/E ratio did not exceed 2:1 and for large capital intensive projects higher ratio of 4:1 or even 6:1 was also allowed. The ARC\textsuperscript{97} observed in 1967 that it was inappropriate to prescribe a common D/E ratio of 1:1 for PEs and proper capital mix should be worked out in accordance with the categories of the PEs and that D/E ratio of a firm should not remain unalterably rigid for all time to come.

The CPU, again, recommended\textsuperscript{98} to the Government that the rigidity relating to the norm of D/E ratio should be avoided and that if the undertaking made out a strong case for relaxation, it should be conceded to. As stated earlier, a Government circular issued in 1968\textsuperscript{99} recognised the fact that loan component of the capital has a direct bearing on the profitability and it wanted this fact to be accounted for in the preparation of the feasibility studies and DPR so that the right D/E ratio may be decided for the project. The Government accordingly advised the PEs that there need be
no rigidity about the prescribed D/E norm of 1:1 and that each case should be considered on its merits. However, representations for relaxation of the D/E ratios beyond 2:1 were being received by the Government. Following the representations, the Government entrusted the Management Development Institute, New Delhi with the task of undertaking a detail study of the D/E ratio norms followed by different all India financial institutions, industries and others to make suitable recommendations in this direction. To comply with, the institute, under the guidance of B.K. Madan, undertook the study and reported making some suitable recommendations as under:

i. The general D/E norm should be used only as a broad guideline in designing the long-term capital mix of an undertaking.

ii. The rigidity in application of the norm should be avoided on the basis of merits of the cases.

iii. Capital intensive industries, high cost projects, etc., are to be given some relaxation in the designing of their D/E structure.

The Government Policy as such, has a conspicuous impact on capital mix of PEs in recent years by bringing D/E ratios of many PEs in the vicinity of 1:1.
To sum up the chapter, capital refers to resources, i.e., assets or the funds used to acquire such resources, invested in the business to generate income. The former denotes the real capital and the latter connotes the financial capital. The present study intends to adhere to the latter, i.e., the 'fund'-concept. Capital is a compound of a number of sources bearing different nature of risks & costs - fixed and variable. Capital mix refers to the composition of such sources and it differs from financial mix which encompasses all the items of the 'liabilities and capital side' of balance sheet, while capital mix usually includes a part thereof. Though there are different opinions as to the composition of capital mix, the present study opts to include short-term funds along with long-term ones in the capital mix which may be simple or complex. It is simple when it includes only equity - variable cost fund and it is complex when it includes both equity and debt, i.e., variable cost fund & fixed cost fund. Incidentally, capital costs because of inherent 'time-lag' in the process of production and cost of capital denotes the minimum rate of return required by the fund provider. In other words, it is the discounting rate that equates the present value of cash inflows with that of cash outflows in the form of interest, dividend etc. Lower the cost of capital, greater is the value of the firm represented in the share price. However, when a firm employs fixed cost fund, financial leverage like debt, preference capital in the total capital, it magnifies the effect of changes in EBIT on EPS.
provided the rate of fixed cost of capital is lower than the ROI of the firm and it also operates in opposite direction when EBIT starts falling - thus, it exposes the equityholders to financial risk - risk of variability in EPS and of ruin. Incidentally, preference share capital, a hybrid security, offers benefit but confers no risk and it is included in debt in the present study. Use of leverage, thus, involves financial risk and return perceived by the investors at the margin deciding the share price on the basis of such perception. When a firm goes on employing financial leverage, it associates the firm simultaneously with financial risk and return. A trade-off between such risk and return takes its own course and the point where such trade-off occurs indicates lowest cost of capital and highest value of the firm and the optimal D/E ratio. Of course, M-M, on the basis of some unrealistic assumptions refuted by critics, contend that cost of capital is independent of capital mix. However, we side with the traditional approach that cost of capital is affected by the capital mix of a firm. Thus, each PVE tries to maintain optimality in the D/E ratio, which is a crucial task as the work-environment is dynamic.

In case of PEs, capital mix is a function of Government policy and not of internal management of the PE. As such, PEs are required to adopt a D/E ratio of 1:1 since inception. The capital mix of PEs is made complex ab initio believably to maintain uniformity, to show true economic cost and to keep
a check on efficiency of internal management. It results in dreadful effect on the profitability of many PEs with less earning capacity. Doubts have been expressed as to optimality of PE-capital mix as Government is both owner and creditor of PEs resulting in absence of financial risk and return; as calculation of cost of capital involves troubles for absence of market price of securities, uniform and standard rate of interest charged to PEs, profit or dividend and growth rate of dividend; as cost of equity is, as considered by the Government, identical with cost of debt. But, PEs should also have judicious capital mix, admitted even by CPU, ARC and a Government circular in 1968 in view of its impact on profitability, image and operational flexibility, etc. Different studies show that the profitability of PEs have prejudicially been affected by higher D/E ratio which is sometimes greater than not only the norm of 1:1 but also that of PvEs. Again, the D/E ratio of PEs has notably been on the rise. The Government policy as such, has a substantial bearing on capital mix of PEs in recent years by bringing D/E ratios of many PEs in the vicinity of 1:1. However, the capital mix of PEs should be adapted as nearly as possible, to earning capacity, liquidity, capital intensity, stage of operation and pricing policy, etc., in view of its peculiar contextuality. No blanket ratio would do. An operative design for grouping PEs into homogeneous classes in pursuance of ARC's report may be evolved on the basis of the gravity of each force telling upon each PE's D/E mix. Capital
mix of PEs should contain such funds as may ensure flexi-
bility in its operation on the one hand and allow the Govern-

ment to harvest dividends in due course. As such, in initial

stage capital mix of PEs should contain Government grant,
equity, redeemable or convertible preference shares and in
later stages self-financing is highly desirable in view of
the economic condition of the country.

Now it becomes pertinent to deal with the sources of capital
in Indian corporate sector in further detail as sources of
capital are the very constituents of capital mix of a firm
and availability of finance coupled with securing of the
same from a proper source and in proper ratio is of prime
importance.
REFERENCES


11. ESRF Study on 'Top 300 Companies', New Delhi, 1970.


19. Ibid.


43. Pandey, I.M., op.cit., p.29.
44. Ibid., p.30.

45. Barges, A., op.cit., p.11.


Incidentally it may be noted that except in France and Senegal in none of the countries here PEs operate, exceptions from PEs have been laid in clear terms (vide K.S. Sastry - Model for Performance Evaluation of Public Enterprises - A Global Survey and Analysis. The Chartered Accountant, Institute of Chartered Accountant of India, 1989, p.622).

In the Second Report of the Committee to Review Policy for PEs under Chairmanship of Arjun Sengupta it has been suggested that a Memorandum of Understanding (MOU) should be arrived between Government in the Administrative Ministry and the PE-Management well before commencement of the financial year in respect of expected investment, production, capacity utilisation, dividend, profits etc. from each PE so that its performance may be evaluated on that basis after making due allowance for the failure or otherwise or the Ministry or Department to fulfil its part of the understanding (vide Report of the Committee to Review policy for Public Enterprises, June 1986, pp.8-18.

56. Government Circular No. 9(28)\(I\)/61 dated 13.6.61 as referred to in Circular No. 46/Adv/BPE/68/10 dated 12.9.68, compendium of BPE Circulars, BPE, New Delhi, p.63.


58. Ibid., PF.99.


61. Ibid., pp.1058-68.


68. **PE Survey, BPE, New Delhi, Vol.I, Table 2&4, pp.18,32.**


73. Chakraborty, S., Ibid.


77. Ibid.


89. Dakshinmurthy, P. and Prasad, G., op.cit.

90. Hansen, A., op.cit.


93. Ibid.


