



# Working Paper



**CAPITAL STRUCTURE DECISION-MAKING  
PROCESS IN DFIS: A CASE STUDY**

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IN DFIs : A CASE STUDY

ABSTRACT

The focus of the paper was on understanding the process of capital structure management of development finance institutions (DFIs) using the Industrial Credit and Investment Corporation of India as a case study. The results indicate that the development of the capital structure pattern of the ICICI has not been systematic. It is also shown that the capital structure of a DFI greatly influences its investment decisions. The recommendations made are : (a) to lift, at least, partially the restriction on lending rate of DFIs; (b) to convert the government loans to DFIs into equity; (c) DFIs should use the cost of capital concept to improve the quality of their appraisal procedure.

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## Capital Structure Decision-making Process In DFIs : A Case Study

The purpose of this paper is to understand the dynamics of the capital structure management of development finance institutions<sup>1</sup> (DFIs) by seeking answers to the following questions:

1. How do investors react the way DFIs make their capital structure decision? That is: How are debt-equity ratio and the cost of equity of DFIs related? Besides capital structure, what other factors could influence the cost of equity?
2. Given the external constraints and environment, what policy variables enter in DFIs' capital structure decision-making?

To answer these questions, we shall analyse data of one of the most successful and leading DFIs operating in a developing country; that is, the Industrial Credit and Investment Corporation of India (ICICI). The issue of the capital structure decision-making process has not been so far investigated in the specific context of DFIs. Most studies relating to the problem of capital structure concerning the non-finance enterprises are cross-section analyses. Such an approach can prove to be futile in the context of DFIs, in view of lack of a conceptual framework. Not only there is an absence of a coherent conceptual basis, but also there exists a problem of obtaining fairly consistent and complete data on DFIs. In view of these constraints, we have used a case study approach in the present article. Such an approach, however, has limitations for making broad generalizations. But the aim of the study is to get in-depth insight into the capital structure decision-making process of an institution considered as having had a fairly adequate and successful management throughout its long existence. The ICICI has been a training ground for managers of DFIs from a large number of less developed countries (LDCs) in Africa and Asia. In

addition, the ICICI, though maintaining its private character, has all the features of a public DFI, being heavily financed and supported by the Government of India and its agencies in numerous ways. Thus, a large part of analysis would provide insights for public DFIs as well.

The article has been divided into four parts. In the first part, we discuss the lenders' policies for DFIs' capital structure decision. Second part provides a framework for a DFI's capital structure policy. In the third part, we explain the process of the capital structure decision-making in practice through an analysis of the ICICI's data. The last part gives the policy implications of the DFIs' capital structure management process.

### FINANCING DFIs : LENDERS' POLICIES

Development finance institutions, also called development banks, get finance from a variety of sources. A private development bank may raise equity capital domestically and/or externally. The equity of a public development bank may be contributed by the government. Development banks - private or public - obtain external finance from a number of international suppliers of development finance. Because of a diversity of customs and operating rules of international lenders, they follow different lending policies with regard to development banks. Thus the financing policies of development banks are expected to be affected by the policies of lenders. These policies are examined below.

#### Lending Preferences

The international financing agencies make a distinction between public and private DFIs for lending purposes. For example, the International Finance Corporation (IFC) prefers to finance private DFIs. The maturity of the loan, the grace period, interest rates and other terms are generally determined differently

for public and private applicants. Such distinctions have important implications for a DFI's capital structure decision.

### Mode of Financing

There are two ways - debt and equity - in which the international lending agencies provide finance to development banks, in addition to giving interest-free grants sometimes. The nature of resources, debt or equity, available to a DFI, tends to affect its investment policy which, in turn, has an effect on the cost of its equity funds.

It is noteworthy that most international lending agencies do not take equity positions in the DFIs and other enterprises which they finance. Lending agencies which do not provide financial assistance in the form of equity participation include the World Bank, the Inter-American Development Bank, the Export Import Bank of the US and the European Investment Bank. However, realising the need for selective equity investment, the World Bank, created the International Finance Corporation for the purpose of participating in the equity of DFIs . The other institution which makes equity investments in DFIs is the Caisse Centrale de Cooperation Economique.

The international lender's choice of providing financial resources in the form of equity or debt depends on two factors: the statutory requirements and its own resources. From the point of a DFI, this choice is important for determining the relative emphasis that it should place on lending or equity investment. This is a crucial decision for DFIs, in view of the developing economies' environment of chronic inflation, recurring foreign exchange crises, heavy dependence on foreign resources and at best a narrow securities market.

## Terms and Conditions of Financing

International financing institutions follow different policies of interest rates and amortization. The interest rates charged differ from a negligible rate to equal to the market interest rate. Depending on whether interest rate and amortization schedule are closer to market conditions or not, a loan is classified as a hard or a soft loan. Soft loans carry on insignificant rate of interest, it generally comprises a small charge covering the lending agency's administrative expenses. Thus, the International Development Association (IDA) has been charging 3/4 percent to 1 percent on amounts utilized and outstanding in the borrower's loan account. Other usual terms of the IDA include a fifty-year maturity and a ten-year grace period.

The terms of hard loans are closely related to market conditions. The interest policy of the leading international agencies is the cost plus type. The World Bank loans are typical in this respect. The interest charged by the World Bank to DFIs comprises its borrowing cost plus a commission and a fraction representing overheads absorption. The amortization schedule is generally tied to the repayment of the sub-borrower's loan to DFIs.

It is significant that the interest rates charged at any given point in time are standard rates unrelated to the creditworthiness of the borrower. For example, the basis for the World Bank's interest rate is its cost of borrowing in the major international markets.

Irrespective of the interest rate policies of the major international agencies, it has been found that they insist on the interest rates on sub-loans (that is, loans by DFI's) to bear some relation to the structure of interest rates prevailing in the sub-borrower's country.

### Capital Structure Limitations Imposed by International Lenders

The capital mix - debt and equity - is an important financial decision for every enterprise as it affects investors' return, risk and control. Commercial enterprises are expected to weigh costs and benefits of various capital mixes before determining a 'balanced' or 'proper' capital structure. Depending on the characteristics and experiences of industries, industrial norms of capital structures have been developed. In the case of DFIs, the World Bank capital structure 'model' has received general acceptance over the past two or three decades. For obtaining the World Bank loan, certain debt-equity ratios require to be maintained. Another significant requirement of the World Bank is that the DFI financed by it should secure government loans generally subordinated to the World Bank loans - known as 'quasi-equity'. Government loans may sometimes be subordinate to equity capital as well. This is generally the case with the first government loan granted at the time of the DFI's inception. Thus, the first government loan (Rs.75 million) to the Industrial Credit and Investment Corporation of India Limited (ICICI) was interest-free and subordinate to both debt and equity. The debt-equity ratio of 3:1 computed by the World Bank includes the government loan in the equity (hence the subordinate government loan is called quasi-equity). The World Bank expects the government loan to be 1.5 to 2.0 times the DFI's equity. Thus, if a DFI's equity is 1.0 unit and the government grants it a loan of 1.5 units from other sources including the World Bank. Any DFI's capital structure, following the World Bank norm, will look as follows:

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Equity	1.0
Govt. Loan	1.5
Other Loans	<u>7.5</u>
	<u>10.0</u>

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It should be obvious that if the government loan is not subordinate to equity, the effective debt-equity ratio would be 9:1.

The DFI's capital structure undergoes changes with time. The first government loan would be subordinate to all loans and equity. The subsequent loans may, however, be subordinate only to loans and not to equity. Even the interest and maturity terms of government may not charge any interest on the initial loan and the maturity period may be very long, say, 30 to 40 years. Some interest may be charged on the subsequent loans and the maturity period may be short, as in the case of ICICI.

The World Bank capital structure model, with its emphasis on concessionary government loan, is quite advantageous to the DFI in its initial period; the DFI is able to cover its organisational and administrative expenses without incurring a loss. This model is followed by a majority of international lenders in financing DFIs. However, some major agencies, such as the Inter-American Development Bank, do not insist on any specific debt-equity ratio.

### CAPITAL STRUCTURE POLICY OF DFI

Like any other business enterprise, a DFI should lay down its financial policy in clear terms. While designing its financial policy, a DFI should seek answers to the following questions:

1. How much debt should a DFI incur in relation to owners' equity?
2. On what terms should the debt be acquired? How would these terms affect the overall acceptable debt level?

3. What should be its dividend policy and how should the retained earnings be appropriated?
4. What minimum interest spread should a DFI expect from its investment of funds? What is the cost of funds raised by the DFI?

Any enterprise, business or non-business, aims at serving the goals, monetary or otherwise, of its owners. Therefore, the financial policies of development banks should be directed towards the fulfilment of the owners' objectives. Development finance institutions, private or public, should aim at earning a reasonable return for the owners and enlarging their operations, to a large extent, out of funds generated internally and raised in the capital market. A profitable development bank will depend upon the concessional government funds to the minimum extent.

It is true that DFIs, particularly public DFIs, cannot exclusively or always be evaluated in terms of financial return. A number of their activities are not reflected in their financial statements. It is precisely for this reason that DFIs are able to get funds from government and other sources at non-market, concessional terms. However, as a DFI matures, it should develop the capability of maintaining the growth of its resources; only then will it have a significant impact on the development of the economy. As a policy, private development banks would like to minimise the extent of concessional government funds. For them, therefore, it becomes more important to earn reasonable return for shareholders and keep creditors satisfied in order to attract funds from private investors.

The most important aspect of the financial policy of a DFI relates to designing an appropriate capital structure. The amount of debt relative to equity affects the return and risk of owners as well as the attitude of creditors. A DFI, therefore,

should attempt to design a balanced capital structure - a debt-equity mix which satisfies both owners and creditors. If the capital structure is 'abnormal', the DFI will find it difficult to raise capital from the markets.

The owners of any enterprise are entitled to the residual earnings. Creditors get interest at fixed rates as determined under the loan agreement. Payment of interest on debt and repayment of principal is a legal obligation. The owners of a DFI (or any other enterprise) would prefer more debt as long as the cost of debt is less than the productivity of its capital. The excess of return on the DFI's total capital and the cost of its debt goes to the shareholders for no additional investment. Thus, debt magnifies the shareholders' return and this results in high increase in earnings per share.

Excessive debt results in financial risk, which both the shareholders and creditors want to avoid. Since payment of interest and repayment of principal is a legal obligation, higher level of debt in the capital structure increases the chances of insolvency. If the enterprise actually becomes insolvent, the costs to the shareholders and creditors could prove enormous. Because of this, shareholders and creditors prefer the debt to remain at a level where the solvency of the enterprises is not threatened. Thus, beyond a reasonable level of debt, the addition of debt in a DFI's capital structure increases the cost of equity at a faster rate.

it should be obvious that the decision about the appropriate level of debt would involve a trade-off between return and risk and a balance of the shareholders' and creditors' views. From a practical point of view, therefore, an assessment of a DFI's debt servicing capacity becomes important in determining a balanced capital structure.

The debt servicing capacity of any enterprise would depend on its cash flow ability. To take a conservative approach, therefore, an enterprise should estimate the behaviour of major determinants of cash flows during a recessionary period. In making this exercise the enterprise should depend on its past experience and experiences of similar companies during a business downturn. It should be admitted that it is very difficult to estimate the length and impact of recession on the company's various determinants of cash flows. But this is not an impossible exercise; it is necessary if the capital structure decision-making process has to go beyond rules of thumb and hunches.

A similar approach of determining the debt level should be followed in the case of a development finance institution. The DFI's cash flow should be forecast under adversity and the impact of different levels of debt with various terms and conditions should be seen. Two significant differences should, however, be noticed. First, unlike a business enterprise, the expenses of a DFI can be forecast with reasonable accuracy. The DFI's major concern will be determining the net default in a recessionary period. The DFI's loss from default would be less since it can cover cash by realising the securities during that period. Second, a DFI would generally borrow for periods longer than its lending. Under this situation, the chances are that it can generate a large cash flow surplus by making no new loans under normal operating conditions. This provides a significant margin of safety to the DFI; it would have more time to recover from the impact of recession and, therefore, can afford a higher debt-equity ratio. The following are some important aspects of a DFI's operations, which if performed diligently, could reduce its risks and thus improve its debt serving ability:

1. The major activity of a DFI is to finance projects. The projects should be effectively evaluated and followed-up subsequently.

For this, the DFI should employ staff which is professionally qualified in appraising projects.

2. A DFI should be cautious in selecting its clients. It would be taking lesser risks if it serves clients whose competence and credibility is proven and established. DFIs in developing countries, however, have to serve small and unproven businessmen for the industrial development of their economies. A DFI in such a situation should have an appropriate mix of established and unknown clients.
3. A DFI can reduce its risks by diversifying its investments. DFIs should avoid investing in few companies and few sectors of industry and economy. Investments of a DFI should be geographically well diversified.
4. A DFI may insist on adequate security for the safety of its investment. It should see that the security is realised at full value in adversity.

Since risks of operations have a great bearing on the debt servicing capacity of a DFI, it should continuously evaluate risks. The evaluation of risks is easier for a mature company which has adequate experience of financing projects, loans disbursement and loan repayment.

The important indicators of risks in the context of a DFI, for example, could be the default experience on loan interest and payment, price of the DFI's shares in the market, effectiveness of security and the magnitude of write-offs. The record of default on interest as well as principal payments relative on to total loan portfolio give some indication of the relative soundness of the portfolio. The

experience of the DFI's management over the years would give it an insight into the nature of defaults - temporary and permanent. This would help the management to make an estimate of loss under normal circumstances.

A DFI with long experience should consider the following four parameters with regard to its debt-equity mix:<sup>2</sup>

1. The percentage of payments of interest and principal due during a given period, but unpaid;
2. The percentage of the loan portfolio that, at any given time, is likely to be in permanent default;
3. The percentage of uncollectibles that is likely to be recovered as a result of security provisions;
4. The value of the equity portfolio relative to its cost.

The management of a DFI could determine the normal risk of operations if these factors could be determined under normal conditions. Cash flow determination, in practice, would thus become a problem of predicting the divergence of these parameters during a recession. Despite its difficulty, this exercise is necessary, if the capital structure decision has to be rational. The debt-equity policy of a DFI should be based on a systematic evaluation of the risks in its portfolio and of its cash flows.

### Leverage and the Cost of Equity of DFIs

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The lending decisions of the international agencies are not based on the financial structures of the DFIs; they are governed more by the overall economic conditions prevailing in the country in which the DFI operates. Thus, the financial risk, reflected by the level of debt, does not seem an important

consideration for fixing the interest rates on loans to DFIs. Furthermore, there is hardly any evidence to suggest that the DFI's capital structure determines the decision of the government than the problem of how the required capital is raised.

It is, thus, suggested that the level of debt is not significant in determining the cost of debt to DFIs. The present analysis is, therefore, confined to the effect of the degree of leverage on the cost of equity. It should, however, be appreciated that the cost of debt is an important component in estimating the overall cost of capital for a DFI for evaluating its investment decisions.

The computation of the cost of equity is a difficult task. In theory, the market value of equity is regarded as the present value of the expected benefits. The expected future benefits can be expressed either in terms of dividends or earnings. Accordingly, two models - the dividend model and the earnings model - are in vogue for measuring the cost of equity.

As per the simple dividend model, the cost of equity can be approximated by the expected dividend yield. The basic assumptions of this model are that only the dividend matters to the shareholders and that the market value of shares is a function of constant future dividend stream. However, in practice shareholders expect both dividend income and capital gains. In other words, they expect dividends to grow. If dividends are expected to grow at a constant rate,  $g$ , then the cost of equity can be ascertained by the following equation:

$$k_e = \frac{D}{P} + g$$

where  $k_e$  is the cost of equity,  $D/P$  is expected dividend yield and  $g$  is expected growth in dividend. This equation is based on the assumption that the market value of the share depends upon the expected dividend and capital gains.

According to the earnings model, the cost of equity is measured by the expected earnings yield (E/P). This model is based on the assumptions that the future earnings will grow at a constant rate and can be expressed as an average and that the market price of the share is determined by the expected earnings stream.

The dividend-growth model is theoretically more appropriate to use in the case of the growing firms. However, in our analysis, we have chosen to see the relationship between ICICI's debt-equity ratio and dividend and earnings yields. In the case of ICICI, it seems that dividends have been considered to be more important by shareholders than the capital appreciation. Over the period 1957-1985, ICICI's share value has grown only by an annual rate of about 2 percent.

Unlike the suppliers of loans, the equity shareholders have a direct interest in the manner in which a DFI raises funds. They are also interested in the overall prospects of the institution and return on their investment. From the shareholders' point of view therefore the questions to be answered are: Does the increasing level of debt affect the risk perception of equity shareholders? Are the operations of DFIs so different than that of other enterprises that they are willing to tolerate very high debt level? We hypothesise that debt level and the cost of equity are positively correlated: the cost of equity either remaining constant or increasing slowly in the early life of a DFI, when it has low level of debt, and then increasing at a faster rate later in its life as it becomes mature and uses increasing proportion of debt in its capital structure.

The logic for this kind of relationship is as follows: As a DFI starts using the moderate amount of debt early in its life, the increased earnings per share, without adding much to the shareholders' risk, results in higher market value for the DFI's share. As a consequence, the shareholders' required rate of return either remains constant or rises slightly with acceptable debt level. The market value reaches its maximum with leverage after several years of DFI's operation, it does not pay to the shareholders to increase debt beyond that level. The high leverage of course results in increased earnings per share, but the financial risk of shareholders increases much more than the increase in earnings per share. Besides the higher degree of financial risk, the overall risk of a DFI is increased when debt is added because of the highly fluctuating economic environment. The impact of the economic change sometimes is so severe that it is difficult for DFIs to remain solvent with the heaviest debt service charges. Thus, beyond a



reasonable level of debt, the addition of debt in the DFI's capital structure increases the cost of equity as a faster rate.

### DFI'S CAPITAL STRUCTURE DECISION IN PRACTICE : AN ANALYSIS OF THE ICICI'S DATA

#### Debt Equity Ratio

In this section, we shall analyse the impact of the capital structure changes on the ICICI's cost of equity. The data on the ICICI's debt-equity ratio are presented in Table 1 which shows a rapid increase in the ICICI's debt-equity ratio. It has increased from 1.45 in 1956 to 6.08 in 1965 to 11.14 in 1980 and to 11.19 in 1985 after rising to as high as 12.57 in 1985. It may be observed from Table 1 that for the first four years, the ICICI's debt-equity ratio was constant and between 1966 to 1974 it varied between a narrow range of 7.54 and 8.9. It was only after 1975 that debt-equity ratio came in the vicinity of 10. Between 1975 to 1980, the ratio ranged between 9.45 to 11.14. During 1981 to 1985, the ratio varied between 11.19 to 12.57.

The ICICI's leverage ratio is substantially out of line with the general pattern of debt in India. This comparison may not, however, be relevant since the nature of the ICICI's business is altogether different, and that the debt levels of DFIs are generally high. The debt level of the ICICI, however, compares reasonably well with other development finance institutions in India. For instance, the debt-equity ratio of the Industrial Finance Corporation of India (IFCI) in 1984-85 was 8.88. At least in one respect, however, there is a significant difference between the ICICI and other development finance institutions like the IFCI. The ICICI has grown in a private setting while other financial institutions have been functioning under the direct control and supervision of the government.

As regards the relationship between capital structure changes and the cost of equity, the analysis of the ICICI's data shows a positive relationship. There exists a strong positive relationship between leverage and earnings yield (correlation coefficient being +0.778); the relationship between leverage and dividend yield is also positive (correlation coefficient being +0.903). It may be observed that in 1960, when the debt-equity ratio reached to the level of 2:1 (approx.) , dividend yield experienced the highest increase (23 percent) over the entire period of the ICICI's existence. It may also be noticed that when debt-

equity ratio was around 4:1 in 1962, the generally established norm for DFIs, both the yield measures showed a decline. What is being suggested by these examples is that besides leverage, there could be other factors influencing the cost of equity.

### Effect of Changing Asset Mix

It will be appreciated that since DFIs deal in money, their asset structure would be significantly different from that of other enterprises. Asset structure can, therefore, be an important contributory factor to a DFI's level of risk, and thus, may influence its cost of equity. It can be seen from Table 1 that loan as a percentage of total assets has steadily increased to very high levels in the recent years. At the end of 1985, 81 percent of the ICICI's total assets was in the form of loans to industrial enterprises in contrast to 14 percent in 1956, 67 percent in 1965 or 77 percent in 1975. As a consequence of the increasing lending activity, the proportion of the liquid asset<sup>2</sup> has decreased significantly. Liquid assets as a proportion of total assets were 14 percent at the end of 1985. There is very significant negative correlation between these two ratios; the simple correlation coefficient being -0.997. The changing assets portfolio of the ICICI could be an important variable in the investors' evaluation of the risk. This can be verified by examining the relationship between loan as a percentage of total assets and the cost of equity. The simple correlation coefficient between earnings yield and loans to total assets is +0.610, while between dividend yield and loans to total assets is +0.790. This implies that as the proportion of loans increases in the ICICI's assets portfolio, making assets less liquid, investors perceive it as risky and as a consequence, they expect higher dividend/earnings yield (cost of equity). This finding has a great significance and concern to DFIs.

In the developing countries because of the non-availability of good scrips and ill-developed secondary markets, the only way of allocating funds for industrial development by DFIs is loans. If investors give an unfavourable weightage to the increasing volume of loans in the DFIs' asset portfolios, they would be in a dilemma. DFIs, therefore, may need to endeavour hard to look for opportunities of equity investment and create an environment for the development of secondary market. In context of the ICICI, however, it may be said that it should seriously think of changing its assets mix; it should make more equity investment since the Indian capital market is relatively well developed.

## Effect of Market Trends

The risk of perception of investors does not only depend on their evaluation of the internal characteristics of a company but also on the capital market trends. The unique risk of a security can be minimised (even completely eliminated) by having a well-diversified portfolio of securities, but the market-related risk is non-diversifiable.<sup>3</sup> The movements of a security in tandem with the market trends is an important determinant of the risk. In order to see the extent to which the ICICI's cost of equity behaves with the market trends we shall compare its dividend yield for all industries and for investment companies in India.

It is revealed that there does not exist a significant relationship between the ICICI'S dividend yield and dividend yield for all industries (correlation coefficient is -0.130). On the other hand, dividend yield for the ICICI and average dividend yield for investment companies are positively related in a significant manner (correlation coefficient being +0.803). However, there is a difficulty in interpreting this result. The ICICI is included in the sample of investment companies for computing the average dividend yield. Since the ICICI is very large as compared with any investment company, its inclusion in the sample may bias the result.

Let us examine the behaviour of the ICICI's dividend yield and share price in context of the movement in the Indian Stock Market. A perusal of yields in Table 2 and share price indices in Table 3 makes it clear that the ICICI's share price has shown a rising trend on an average and that its dividend yield (average 9.7 percent during 1957-85) has been generally higher than the all-industries average (6.0 percent) in India. There have been some significant exceptions to this general pattern. Until 1959, the ICICI's dividend yield has been lower than the average for all industries. In fact, the opposite could be expected during 1955-59 as these were the start up years of the ICICI, and that it has no evidence of demonstrated performance. One may search for explanation. It may perhaps be due to the fact that during these years the ICICI'S leverage was low. The interest-free and long-term character of the government's rupee advance was, thus, crucial for the success of the ICICI in its early years.<sup>4</sup> Another reason could be a very high initial expectation of investors. This seems to be justified on at least two grounds. First, the ICICI had the advantage of having been started with the active support of the Government of India and the

World Bank. In the beginning it was the single-most important institution for supplying the foreign currency loans channelled to it by the World Bank and other international agencies. Second, it was also the single most important institutional underwriter in India, particularly from 1955 to 1959. As such, it was expected to be very active on the stock exchanges. These two reasons, thus, could make the ICICI's shares highly attractive during those years. The plausibility of these arguments can be verified by extending them to later years' developments. From the year 1960 onwards, the ICICI ceased to be the dominating institutional underwriter as well as the supplier of the foreign currency loans. Other financial institutions, such as the IDBI and the IFCI, have started granting more and more foreign currency assistance and underwriting industrial securities. The Life Insurance Corporation of India (LIC) and the Unit Trust of India (UTI) have assumed the primary role of underwriting. As a consequence of the dilution of the ICICI's dominating position in these two spheres, its dividend yield started showing upward trend after 1960.

A comparison of the ICICI's share prices with the share prices of all industries and of investment companies provides interesting insights. It could be seen (Table 3) that except for the business downturns in 1964-65 and 1965-66, industrial production has been growing slowly and steadily. On the other hand, all-India share prices have been showing wide fluctuations. It is indicated that between 1963 and 1966 and 1968 when there was depression in the stock market and share prices of all industries and investment companies were falling, the ICICI's share prices were more or less constant. A similar kind of pattern could be seen during the depression years of 1971-72 and 1975-76 and some other periods of down-swing. As a consequence, the dividend yield of the ICICI during these periods was either lower than or closer to the dividend yield of investment companies. This consistency of behaviour of the ICICI's share price and therefore, dividend yield during the depressed stock market situations may not be without an explanation. One possible explanation could be that perhaps the ICICI's share is considered to be a safe investment. Thus, in a down-swing in the stock market, the ICICI's share may look to be a relatively attractive investment. Consequently, the price of its share in the depressed situation would either increase or decrease less than the average with the result that its dividend yield (costs of equity) would be equal to or lower than the average, other things being equal. In an active market, on the other hand, investors may be attracted to more speculative shares. Because of high price

rise of the shares when speculative mood sets in the stock market, the dividend yields of those shares will be low.

Our analysis in this section has been based upon the dividend yield. The conclusions, however, will remain the same if analysis is made on the basis of earnings yield. The ICICI's earnings yield fell during the down-turns of the Indian stock market and rose sharply during the recovery periods. This is consistent with the behaviour of the dividend yield.

On the basis of the above analysis, it may be concluded that the ICICI's dividend yield has generally been lower in depressed markets and higher in active market (in comparison with average yield of all-industries). Despite its cyclical movements, the ICICI's dividend yield has followed an increasing trend which cannot be entirely explained by market trends. It is, therefore, implied that internal factors, such as debt level and the asset structure are quite important factors in determining the ICICI's cost of equity than the external indicators of the stock markets.

### Statistical Analysis

A simple statistical analysis is performed in this section to quickly check the validity of the conclusions reached above. From our previous analysis it seems that the ICICI's dividend yield is influenced more by its internal characteristics - capital structure and asset structure - than by the external conditions of capital market.

The ICICI's dividend yield ( $y$ ) is statistically correlated to debt equity ratio ( $x_1$ ) and liquid asset to total assets ratio ( $x_2$ ). The simple correlation coefficients, as reported earlier, are as follows:

$$r_{yx_1} = +0.903$$

$$r_{yx_2} = +0.789$$

The correlation coefficients are significant at 1 percent level of significance. The correlation results clearly indicate that the increasing level of debt increases the risk perception of the investors and as a result, dividend yield increases. Same conclusion is obtained if earning yield is correlated with debt-equity ratio (the simple correlation coefficient is +0.778). It is also indicated that the assets portfolio has a significant influence on the shareholders' evaluation of riskness

of the development finance institution's share. The simple correlation coefficient between the ICICI's dividend yield and liquid assets to total assets ratio is -0.789. This implies that as the ICICI's portfolio shifts in favour of loans and as a result, the liquid assets shrink, shareholders expect more premium on their equity investment.

When we correlated debt-equity ratio and liquid assets to total assets ratio, the simple correlation coefficient was found to be -0.925. The implication seems that as the ICICI increases proportion of borrowings in its total funds, it tends to allocate its resources more in the form of loans; thus decreasing the share of liquid assets in its assets mix. (This is also corroborated by a significant positive correlation between debt-equity ratio and loans to total assets ratio; the simple correlation coefficient being +0.930).

Since dividend yield is positively correlated to both debt-equity ratio and loans to total assets ratio and also debt-equity ratio and loans to total assets are positively related in a significant manner, to clearly understand the underlying relationships, let us examine the partial correlation coefficient between dividend yield and debt-equity ratio holding loans to total assets ratio constant. The partial correlation coefficient is:

$$r_{yx_1} = +0.747$$

It is clear that the simple correlation coefficient between dividend yield and loans to total assets (+0.790) is smaller than that between dividend yield and debt-equity ratio (+0.903). This may imply that the relationship between these two variables is indirect. However, the partial correlation coefficient between dividend yield and debt-equity ratio (viz. +0.747) is substantially reduced, when loans to total assets ratio is held constant. This would, therefore, suggest that dividend yield is influenced by both leverage and level of loans or liquid assets, leverage having more direct effect.

### ICICI's Financing Decisions Precede Investment Decisions

It may be stated in view of the ICICI's experiences that unlike other enterprises, DFIs' financing decisions precede investment decisions. The ICICI first negotiates (keeping in view the expected demand on funds) borrowings from the international agencies and then allocates funds to various projects. Because of the developing nature of the stock markets in India and because of

the ICICI's main source of funds being borrowings, the ICICI may prefer to allocate its resources in the form of loans. DFIs' investment decisions are, thus, heavily dependent upon its source of finance.

The ICICI's operations have grown so large with significant impact on industrial development of India that the government would ensure its solvency. As such the ICICI's capital structure should be of relatively less importance to its investors in their evaluation of risk. The implication of the highly significant correlation coefficient between the ICICI's dividend yield and debt-equity ratio is that investors consider the ICICI's earnings to be of low quality because of heavy leverage. The ICICI's high EPS or return on owners equity is more a result of high debt-equity ratio than the improved performance.<sup>5</sup> Government of India may be committed to ensure the ICICI's solvency but it does not guarantee a return to shareholders. Further, risk is perceived by the shareholders on account of the changing assets structure. The increasing proportion of loans has the potential of lowering the return of the ICICI, since loans are granted at prime rate of interest without any possibility of capital appreciation. For example, the ICICI's return on its loan portfolio is half the return on its equity investment. As compared to other investment companies, the ICICI earns less on its total assets. The reason is that other investment companies invest less than half of the ICICI's loan investment in loans. The ICICI earns higher return on its equity than the investment companies because of very heavy reliance on leverage.

#### Analysis of the ICICI's Debt Policy

The cost of borrowing does not put any limit on borrowings by DFIs. The only outside constraint on the use of debt by DFIs may be the debt limits imposed (arbitrarily or otherwise) by the suppliers of development funds. Within the limits imposed by creditors, the level of debt of a DFI should depend on the effective demand for its resources within the country. It is believed that in a developing country the apparent demand for capital may be very high compared to the effective demand. A number of projects which get funded in the developing countries may not be acceptable risks if DFIs were to follow stringent lending norms. In spite of a gap between apparent demand and real demand, it is likely that DFIs in the developing countries could be inclined to use up their borrowing capacities. This is very difficult to prove, however. There is no easy way available to evaluate the quality of the portfolio of a DFI. In developing

economies where a number of industries operate under the government's protection, a great majority of marginal loans or equity investments may seem to be acceptable risks.

The above reasoning suggests that the capital structure decisions of DFIs may be made randomly, demand for capital being the governing factor. To examine the hypothesis that capital structure decisions of DFIs would not be systematic, we can analyse the pattern of debt-equity ratio of DFIs in relations to some critical management policy variables. DFIs' debt serving ability, reserves position, and liquidity of assets could perhaps influence their capital structure decision. We would thus relate the ICICI's debt-equity ratio to: (i) coverage ratio, (ii) dividend-payout and (iii) liquid assets to total assets ratio. If the capital structure decisions are systematically made by DFIs, a theoretical relationship should exist between these variables and that the growth pattern of debt-equity ratio should be systematic. It may be expected that debt-equity ratio would be positively correlated to coverage ratio and liquid assets to total assets ratio, while negatively related to dividend payout.

#### Debt Serving-ability and the Capital Structure Decision

A link between DFIs' capital mobilising and debt serving ability is expected. This is so because of the lending policies of the international suppliers of development funds. Generally, these institutions tie the repayments of their funds by DFIs to the amortisation of loans granted by them (DFIs) in their own countries. Thus, DFIs will be able to meet their debt commitments to suppliers of funds provided their borrowers are meeting their repayment schedules in time. The amount of cash flow generated, therefore, is crucial in this regard. If the capital structure decisions of DFIs are systematic, then there should exist a positive relationship between debt-equity ratio and debt serving ability of DFIs.

The debt-serving ability of a DFI may be measured by cash flow (before interest) divided by total debt charges. Since data on the timing and amount of the ICICI's debt repayments were not available, we used interest charges in the denominator of our ratio. The numerator of coverage ratio in Table 1 includes profit before interest, depreciation and taxes. This is a rough approximation of the cash flow. It should be noted that the assets portfolio of the ICICI includes both loans and equity investment; therefore, both are the determinants of cash flow.



It can be seen by examining the coverage ratio in Table 1 that the ICICI started paying interest from 1960. (In fact, in the beginning the ICICI had an interest free loan from the government of India). The coverage ratio has been continuously decreasing; it has decreased from 5.37 in 1960 to 1.29 in 1980, a drop of more than four times. On the other hand, debt-equity has been steadily increasing; it has increased from a level of 1.45 in 1956 to 1.93 in 1960 and further to 11.19 in 1985, a rise of about six times. The simple correlation coefficient between these ratios is -0.144. This is not different from zero, which is not in line with the predicted relationship. One may, thus, imply that the ICICI does not have a policy of determining its debt policy in accordance with its debt serving capacity. It may also be noted that the ICICI'S current coverage ratio is not very safe by most standards although it may be difficult to say what the acceptable coverage ratio should be.

#### Dividend-Payout and Capital Structure Decision

As a company introduces more debt in its capital structure, it is expected to strengthen its equity base. The ICICI has been retaining more and more of its earnings over the years. Its dividend-payout ratio has reduced from 0.81 in 1956 to 0.41 in 1980 and 0.23 in 1985. Dividend-payout when correlated to debt-equity ratio shows a negative relation; the simple correlation coefficient being -0.896. This relationship is consistent with that hypothesized. A more thorough investigation of the ICICI's dividend policy, however, makes the interpretation of the underlying relationship between debt-equity ratio and dividend payout difficult. The ICICI has followed a conservative dividend policy. Its earnings per share has increased at an average annual rate of about 12 percent while dividend per share has increased only by 6 percent over the past 30 years. The ICICI's earnings per share has shown a cyclical pattern (Table 2); as such the ICICI seemed to have increased dividend only when current levels of earnings were considered stable. This can be verified by applying Lintner's model.<sup>6</sup> As per the model, the major portion of dividend of a firm can be explained as follows:

$$DPS_t^* = rEPS_t \quad \dots(2)$$

and

$$DPS_t^* - DPS_{t-1} = a + c(DPS_t^* - DPS_{t-1}) + U_t \quad \dots(3)$$

where  $DPS_t^*$  is the firm's desired dividend payment per share,  $EPS_t$  is the earnings per share during period t, r is target payout, a is a constant relating to the dividend growth and c is the adjustment factor relating to the previous period's dividend and the new desired level of dividends where  $c < 1$ . From this, we infer that firms set their dividends in accordance with the level of current earnings and that the change in dividends over time do not correspond exactly with the changes in earnings in the immediate time period.

We can substitute Equation (2) into Equation (3) to construct an empirically testable model:

$$\begin{aligned} DPS_t - DPS_{t-1} &= a + c(rEPS_t - DPS_{t-1}) + U_t \\ DPS_t &= a + crEPS_t + (1 - c)DPS_{t-1} + U_t \\ DPS_t &= a + b_1EPS_t + b_2DPS_{t-1} + U_t \end{aligned} \quad \dots(4)$$

We obtain the following results when Equation (4) is estimated using the ICICI's data:

$$DPS_t = 0.966 + .0228 EPS_t + 0.889 DPS_{t-1},$$

(2.8)      (2.6)                      (17.1)

The figures in parentheses represent t-values. We can find out r (target payout) and c (adjustment factors) from these estimates. We know that  $b_1 = cr$  and  $b_2 = 1 - c$ . Thus,

$$\begin{aligned} cr &= .0228 \\ 1 - c &= 0.889 \\ \therefore c &= 1 - 0.889 = 0.111 \\ r &= .0228/0.111 = 0.21 \end{aligned}$$

Thus, we find that the ICICI has a low target payout and moves very slowly in increasing dividends with the upward movement in earnings.

It is, thus, not possible to say with accuracy whether the policy of declining dividend-payout was followed in response to the capital structure changes (that is, to strengthen equity base in view of increasing debt level). It could be deliberate dividend policy of not increasing dividend immediately in response to increase in earnings in order to be able to maintain dividend rate in the event of fall in earnings. The ICICI is, however, required to create a statutory reserve (10

percent of profits before tax and additional 25 percent of distributable profits) with a view to provide cushion to debt and equity holders. The ICICI has also been creating capital reserves and provisions against doubtful debts. To this extent, it could be said that the declining payout ratio is an intentional management policy to strengthen the ICICI's capital structure.

#### Assets Liquidity and Capital Structure Decision

As stated earlier, a shift in the ICICI's assets portfolio is visible. The liquid assets to total assets ratio has declined from 0.90 in 1955 to 0.14 in 1985. Debt-equity ratio and assets liquidity for the ICICI are negatively correlated (simple correlation coefficient is -0.925). It cannot be stated whether the ICICI's management should take into consideration the liquidity of its assets in designing its capital structure. It is, of course, clear from the behaviour of liquid assets to total assets ratio that the ICICI's management, for the time being, does not consider it of importance. It can be argued that the ICICI's management may view loans to be more liquid than equity investment in view of the low trading on the Indian stock exchanges. The ICICI data do not, however, lend support to this contention. Table 1 shows that the ICICI's securities have been selling either more than, or closer to, their book values in most of the years. These securities include debentures, preference shares and government securities which generally sell at below par. If account is taken of them, it may be found that the ICICI's equity investments are of market value. For example, on an overall basis, the ICICI'S quoted securities had market values higher than book values (1.5 times).

Our earlier analysis has shown that the ICICI's asset structure has its influence on its cost of equity via its relation with its capital structure. The declining liquidity of assets is adding to the risk perceived by investors. This may be due to the anticipated decline in the ICICI's returns from assets due to change in assets portfolio. It, thus, seems pertinent for the ICICI's management to pay attention to the underlying relationship between capital structure and the assets liquidity. As the proportion of debt increases in the ICICI's capital structure, the management must see that it is properly divided into loans and equity investments.

## POLICY IMPLICATIONS

The analysis in this paper indicates that the development of the capital structure pattern of the ICICI has not been systematic. The changing structure of the ICICI's certain characteristics seem to have not been considered by its management in mobilising its capital. The quality of the ICICI'S debt-serving ability is declining, yet it is augmenting its resources by way of borrowings. Similarly, the liquidity of its assets is declining with an adverse effect on its cost of equity. It is introducing more and more debt in its capital structure which is further deteriorating the quality of its assets portfolio. Although there is some evidence of a deliberate retention policy followed by the ICICI's management with a view to strengthen its capital structure, yet its being a function of cyclical nature of the ICICI's earnings cannot be ruled out. The ICICI's experience thus indicates that the capital structure decision-making process of the DFIs is random. More firm conclusion can be derived only when such studies are conducted for other DFIs in LDCs.

It is also indicated that the capital structure of a DFI greatly influences its investment decision. Obviously, a DFI's return on assets would be determined by its investment decision, or the mix of assets. Two factors are responsible for a DFI's preference for disbursing its financial assistance in the form of debt. First, because of inactive and undeveloped capital markets, equity investment is not attractive for the DFIs in the developing countries. Second, the bulk of a DFI's resources are in the form of debt. A DFI therefore prefers to provide financial assistance to enterprises in the form of debt. Another feature of the developing economies is that the interest rates are low and are regulated by the government. As a consequence, because a very high proportion of a DFI's funds is invested in the form of loans, it earns comparatively lower return on assets. The low return on the DFI's assets further accentuates the need for borrowed funds to maintain a reasonable return on its equity capital. Although the DFIs in the developing countries are generally government supported and their survival is not at stake, the high degree of leverage would adversely affect the quality of a their earnings.

One solution to the above mentioned problem is to lift, at least partially, the restriction on lending rate of DFIs. DFIs in the developing countries should be allowed to charge high interest rates commensurate with the project risk from those productive business projects which do not classify as infrastructural and

priority sector projects. This would result in relatively high cost of funds for business enterprises seeking financial assistance from DFIs. The business community would therefore resist the idea of lifting the restriction on interest rates. But if the restriction is lifted, entrepreneurs will have to compete for funds and as a result, the quality of management is expected to improve. Also, a great majority of marginal projects which survive because of the very favourable terms on loans obtained from DFIs would be eliminated.

The very high level of leverage in a DFI's capital structure can be brought down by converting government loans into equity. To further strengthen the DFI's capital structure, the amount of dividend on the government's equity should be retained automatically. The reaction of investors is not expected to be unfavourable since they do not discriminate between the government's equity and loan. The conversion of the government loan into equity could raise the problem of control in case of some private DFIs in developing countries. But government control of the DFIs' operations, directly or indirectly, is common in developing economies. The ICICI, for example, started as a private DFI, although it was substantially supported by the government. After bank nationalisation in India, the majority of ICICI's equity capital is held by government. However, it does not interfere in its activities.

It should be emphasised that the cost of capital is an important concept for DFIs. If the restriction on interest rates is lifted, the cost of capital concept becomes more important. The rate of interest charged by a DFI on its loans should be at least equal to the DFI's cost of funds. The use of a managerial tool such as the cost of capital would help to improve the quality of a DFI's appraisal procedure.

**TABLE 1**  
**ICICI's Data**

	Debt Equity Ratio	Liquid Assets to Total Assets	Loans to Total Assets	Coverage Ratio (PBIT to Interest)	Dividend Payout	Investments Market to Book Value
1956	1.45	0.90	0.14	-	0.81	1.00
1957	1.45	0.79	0.15	-	0.87	0.94
1958	1.48	0.76	0.16	-	0.79	1.04
1959	1.81	0.62	0.25	-	0.89	1.17
1960	1.93	0.59	0.32	5.37	0.76	1.17
1961	3.46	0.49	0.42	3.60	0.70	1.13
1962	3.76	0.43	0.52	2.15	0.70	1.03
1963	4.68	0.36	0.59	1.84	0.60	1.00
1964	6.20	0.30	0.65	1.74	0.54	0.97
1965	6.08	0.29	0.67	1.69	0.68	0.93
1967	8.90	0.27	0.69	1.57	0.48	0.95
1968	8.53	0.27	0.69	1.52	0.47	0.97
1969	8.62	0.29	0.66	1.53	0.42	1.04
1970	8.30	0.27	0.69	1.48	0.47	1.08
1971	7.66	0.24	0.71	1.46	0.56	1.05
1973	7.54	0.23	0.71	1.41	0.72	1.09
1974	7.82	0.20	0.74	1.36	0.61	1.03
1975	9.45	0.18	0.77	1.29	0.57	0.97
1976	10.46	0.18	0.77	1.33	0.52	0.98
1977	9.77	0.16	0.78	1.33	0.58	0.91
1978	10.00	0.16	0.78	1.30	0.53	0.99
1979	10.67	0.15	0.80	1.32	0.40	1.07
1980	11.14	0.15	0.80	1.29	0.41	1.18
1981	12.20	0.19	0.76	1.36	0.30	1.19
1982	12.57	0.17	0.81	1.38	0.23	1.13
1983	12.32	0.10	0.86	1.39	0.19	1.26
1984	11.47	0.10	0.85	1.32	0.29	1.18
1985	11.19	0.14	0.81	1.36	0.23	1.49

**Source:** Ratios are calculated from data available in the ICICI Annual Reports.

**Note:** In the calculation of ICICI's debt-equity ratio, reserves and provisions for doubtful debts are excluded.

**TABLE 2**  
**Data on Yields**

	Market price of ICICI's Shares	Earnings yield ICICI (%)	Dividend yield ICICI (%)	Dividend yield (All Industries)	Dividend yield (Investment Cos.)
1956	Rs78.00	5.6	4.5	5.0	6.0
1957	72.65	6.3	5.5	5.7	6.5
1958	75.50	6.7	5.3	6.9	7.3
1959	84.25	6.8	6.0	6.3	5.9
1960	78.00	9.6	7.4	5.3	6.2
1961	84.00	11.1	7.7	4.9	6.9
1962	87.00	10.7	7.5	4.7	6.7
1963	94.00	12.3	7.4	4.9	6.5
1964	94.75	14.6	7.9	4.9	6.5
1965	92.75	12.7	8.6	7.0	8.8
1966	93.00	19.0	9.7	8.1	9.3
1967	99.25	18.8	9.1	7.7	9.2
1968	98.25	19.7	8.2	8.2	9.1
1969	109.50	19.5	8.2	6.8	9.1
1970	116.50	19.3	8.6	5.8	8.2
1971	123.50	14.5	8.1	5.5	7.5
1972	117.63	16.1	8.5	6.5	8.4
1973	116.75	11.9	8.6	7.0	8.8
1974	103.75	15.7	9.6	5.6	8.7
1975	94.50	20.5	11.6	5.1	9.1
1976	97.00	23.7	12.4	5.4	8.0
1977	94.75	21.2	12.7	6.1	9.0
1978	103.50	21.8	11.6	6.5	11.7
1979	104.74	31.4	12.4	5.6	11.2
1980	107.50	29.1	12.1	5.8	12.1
1981	97.50	47.6	14.4	5.9	11.6
1982	100.50	69.2	16.0	5.5	10.3
1983	121.25	69.3	13.2	5.9	11.3
1984	149.25	36.5	10.7	5.2	9.8
1985	137.50	33.0	12.4	4.8	8.8

**Source:** ICICI's Annual Reports and the Bombay Stock Exchange Directory.

**Note:** Market Price of ICICI's share is average of high and low.

**TABLE 3**  
**Indices of Share Prices and Industrial Production**  
**(Bonus : 1970 =100)**

Year	Industrial Production	Share Price Indices		
		All Industries	Investment Cos.	ICICI
1956-57	43.4	67.9	N.A.	55.5
1957-58	45.0	67.0	95.2	61.1
1958-59	48.8	73.3	103.1	67.5
1959-60	53.1	82.9	112.2	63.1
1960-61	58.0	91.4	103.1	68.0
1961-62	63.5	98.1	103.1	70.5
1962-63	68.8	95.9	102.0	76.1
1963-64	74.8	89.3	95.2	76.8
1964-65	81.6	84.5	91.0	75.2
1965-66	81.0	75.3	82.7	75.3
1966-67	80.3	78.7	88.6	80.4
1967-68	85.5	75.3	87.9	76.8
1968-69	91.6	80.2	88.2	86.7
1969-70	96.0	90.9	97.3	94.3
1970-71	100.0	100.0	100.0	100.0
1971-72	105.8	95.1	87.2	95.3
1972-73	107.5	96.4	80.2	94.5
1973-74	109.7	114.6	81.2	83.4
1974-75	114.9	112.5	88.0	76.5
1975-76	127.1	97.3	87.4	78.6
1976-77	132.7	103.9	60.0	76.8
1977-78	141.8	107.4	65.1	83.8
1978-79	143.0	130.4	70.2	84.8
1979-80	144.0	143.5	72.9	87.1
1980-81	158.0	159.7	73.3	79.0
1981-82	165.1	191.7	80.0	81.4
1982-83	173.9	180.7	79.6	98.2
1983-84	186.4	198.0	94.5	120.8
1984-85	197.9	212.6	112.3	111.3

**Source:** Various issues of *Currency and Finance*, published by the Reserve Bank of India.



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