

# THE COST OF CAPITAL IN PROJECT FINANCING IN NIGERIA

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## Synopsis

The cost of funds in project financing is a very important instrument for a firm's management decision in many ways. In capital project planning and development, it is a key decision variable because it serves as a minimum acceptable benchmark for accepting to invest in a project. This paper discusses the concept of project financing, the sources of finance for capital projects, the financing mix (or structure) as well as the financial implications of project cost structures and the key risks inherent in financing capital projects. The paper also identifies the conceptual approaches to the cost of funds for capital projects. Our final thoughts for enhancing project financing availability at minimum cost include an understanding of the needs of financiers in developing an effective working relationship among entrepreneurs, lenders and investors with respect to risks such as those related to technology and market; Financiers should develop a better understanding of capital project technologies and their inherent risk profiles, and integrate this understanding into their project lending and investment criteria early enough; set up a suitable financial framework that ensures a proper mix of owner's equity with debt instruments and scale the Projects in terms of their related cost issues.

## Introduction

Project financing deals with the procurement of funds: It involves a process of raising fund; to finance expenditure on project or projects about which decisions have already been taken. This, by extension implies that financing a project will be concerned with the choice of ways or methods of financing as well as the sources of funds (NCEMA, 1991). Essentially, the study of the financial aspects of capital (or an investment) project should indicate the sources of supply of funds necessary for its execution and operation, and also describe the mechanism by which these resources would be directed towards fulfilling the project's stated objectives. It should be explained whether the resources are in actual fact, available from own sources, and to sufficiently ascertain whether a certain part of the resources will be obtained through credits (Odufalu, 2000).

The cost of funds in project financing is a very important instrument for a firm's management decision in many ways. In capital project planning and development, it is a key decision variable because it serves as a minimum acceptable rate of return for accepting to invest in a project (OECDJ 1968). Since the investment projects undertaken by a firm may differ in risk, each one of them WILL have its own unique cost of capital. The cost of capital for a project is defined by its risk, rather than the characteristics of the firm undertaking the project (Pandey; 2005).

Typically, it is assumed that neither the manufacturer (contractor, construction firm,) nor the project owner can self-finance the project nor are they able to secure finance using their non-project assets. Project financing represents a crucial enabler on the critical path to large-scale deployment of project technologies. Thus, the ability to attract an affordable combination of debt, equity, and other sources of funding for the project is a key to commercial success.

## Sources of Finance

Issues relating to short-term finance are not quite too complicated and the task and costs of raising the funds are not quite too onerous. We therefore, shift our focus away from short-term finance without downplaying their relevance. Two general long-term sources provide funds for capital projects: Internal sources and External sources. The internal sources include the undistributed profits, depreciation provisions and other reserves within the enterprise itself. The external sources may be either domestic or foreign. The domestic external sources include the capital market and the bank-. (Odufalu, 2000).

Foreign Sources include foreign equity finance and foreign loans. Foreign equity finance for industrial projects in developing countries takes different forms. At one extreme, a foreign firm in its

own name, or that of a subsidiary, may set up a project which it owns outright or in which it has a controlling interest. At the other extreme, it may consist of a purchase by a foreign investor of some shares in an enterprise that is largely owned by investors in the developing country. In-between these are several variations. For example, a joint venture in which a foreign firm invests substantial equity capital and industry-specialized experience, while local partner, either private investor, or the government, invests the balance of the capital and provides local information and connections.

Another source of foreign equity participation is the machinery supplier or the construction contractor, through invitation to bid for the supply of machinery or the construction of the project on the stipulation that bidding firms must subscribe to stock. Such bids are almost always higher than they would otherwise be, for such investments are considered risky and naturally the firms would want to protect themselves by raising prices (Otlufalu, 2000).

Foreign Private Loans involve Private foreign companies giving loans to help finance projects in developing countries, frequently in connection with equity participation rather than independently. If a foreign firm, usually in the same industry, wishes to establish a close and potentially growing relationship with a venture abroad, it is likely to make its investment largely in the form of equity capital so that it will have a say in the management and a share in the profits accruing from the project. However, it may wish to secure itself of a fixed return on the part of its investment. This can be achieved through granting loans in addition to equity participation. A firm's interest in equity or loan participation is likely to have something unique to offer in patents, processes, or formula based on long and specialized experience in the industry. It may be interested in the project simply as a means of safeguarding or increasing the market for the product.

Suppliers of machinery and services are the major sources of private loans to industrial projects. Many of such firms are prepared to give extended credits to foreign purchasers and usually the credits are financed by a government agency in order to encourage exports. Such credits are usually short-term, and this may harm the project rather than help it. Ordinarily, foreign banks are not generally an advisable source of independent loans, although they may participate in loans made by some other institutions like the World Bank, International Finance Corporation (IFC), International Development Association (IDA) and the African Development Bank (NCEMA, 1991).

### **Project financing Mix**

Project financing is asset-based financing. This means that the project lenders have recourse only to the underlying assets of the project. It typically involves both debt and equity, where the debt-to-equity ratio is a large component of the total upfront capital requirements. Debt is used when available and when it is the least expensive form of financing with equity still needed for creditworthiness. Most importantly, earnings from the project before interest, depreciation, and taxes must be able to generate a return to the equity investors, and pay for interest and principal on the debt, pay transaction costs associated with developing and structuring the project and pay operations and maintenance costs. Such payments are typically structured, where operations and maintenance costs have highest priority, than debt repayment, and return to equity investors (Goldman et al, 2005).

Successful project financing must provide a structure to manage and share risks in an optimal way that benefits all participants by allocating risks to those entities that are best able to manage them. Contractual agreements are the principal means of mitigating project-related risk. Today's project financing typically involves the creation of a stand-alone project company that is the legal owner of the project assets, and that has contractual agreements with other parties, such as purchasers of the products, suppliers, lenders, investors, regulatory entities, sponsors, operators, insurers, and firms that engineer, procure and construct the project (Goldman, et al, 2005). Traditionally, project financing has been focused on large-scale projects - typically worth some millions or billions of the Naira.

The puzzle is what is a reasonable relationship between debt and equity in a new industrial project? No rigid rule is known. Goldman et al (2005), posit that, in a country with an abundance of capital such as United States, where many firms have no long-term debt, a ratio of debt to equity of 1.3 is regarded as indicative of fairly heavily leveraged for an industrial company. Of course this standard cannot be expected of developing countries like Nigeria where capital is scarce. The acceptable ratio of debt to equity depends partly on the nature of the project and the apparent degree of risk associated with the project. If a project is sound and is not unduly risky, a debt-equity ratio of 1:1 may be acceptable. Occasionally, in developing countries, exceptionally safe projects are financed

on arrangements by which debt moderately exceeds equity, although even then a 2:1 debt-equity ratio would be regarded as about the limit by most prudent lenders (Parish, 1965).

### **Financial Implications of Project Cost Structure**

The financial analysis of projects involves the study of the financial transformation of the underlying technical cum physical output-input relationship of a project. It follows therefore that the cost structure must have financial implications. Costs have to be incurred first before production can take place. The level of costs must determine the level of funding - the higher the level of cost the higher the level of funding. Beyond that, the size and composition of the fixed costs and variable costs have implications for the method of financing. Cost over-runs are an academic feature of most projects. Suppose it turns out that costs have been grossly optimistically estimated, the project would then require additional funds to finance the extra or additional costs that have shown up. Further borrowing would be impossible if the project already has more than enough debt. This implies that high debt-equity ratio should be guarded against at the initial stages of the project's life.

In joint ventures, some of the items, of fixed cost may be supplied in the form of equity participation in order to reduce any debt burden. Similarly, the supply of raw materials has implications for the debt-equity ratio if provided through equity participation or loan. Managerial composition and selection may influence the readiness to obtain loans. A management team based on competence may instill greater confidence in the minds of prospective lenders than one based on family connections. The cost structure is simply one side of the coin while the source and method of financing is the other. Like the balance sheet, the level of one determines the level of the other, and the structure of one must have implications for the structure of the other. Capital projects present risk in terms of technology, creditworthiness, revenue security, and market competition risk in addition to other issues within the larger context of today's project financing challenges. These risks must be borne in mind when considering the project cost structure.

### **Cost of Capital in a Project**

Cost of Capital is the required return necessary to make a capital project (such as building a new factory, constructing a federal highway, or a bridge etc.) worthwhile. It will usually include the cost of debt and the cost of equity. The cost of capital determines how a firm or an organization raises money (through stock issue, or through borrowing, or through a mix of the two). It is the rate of return that an entity would receive if they had invested their money somewhere else with similar risk. Cost of capital therefore, is used as a financial standard for evaluating the return from investments in projects (Rogers, 2002). The cost of capital is the rate at which a firm obtains capital. Since there are different sources of capital, each with its own cost, for an investor, it is necessary that he obtain capital judiciously and from sources that lead to the least cost.

Different types of funds have different cost implications. Some types of funds available to a firm involve higher cost per unit of fund utilized (Manmohan, 2002). Therefore, the over all cost of funds to a firm depends to a larger extent on the financing mix adopted by the firm. The critical task is to select an optimum financing mix. of the grid. In this connection the optimal financing mix will be that mix of financing which has the least cost implication giving the financing constraints faced by the project. Such a combination would normally involve a combination of equity and debt sourced from Money and Capital Markets. The term 'cost of capital' has one major set back because it creates the erroneous impression that the cost of financing which is relevant, refers to only long-term funds. In reality, every type of funding, long-term or short-term, equity or debt has some cost implications. To capture this all inclusiveness, a more appropriate terminology should be the cost of funds (Okafor, 1983).

### **Conceptual Approaches to Cost of Funds**

There are four conceptual approaches to the definition of cost of funds. These are (i) Sourcing. cost of fund, (ii) usage cost of fund, (iii) The opportunity cost of funds, and (iv) weighted average cor. of funds. Sourcing Cost of Fund is the concept of cost of fund, which in most cases is not identified by authors and experts in determining the actual cost 'of funding for a company or a project. This refers to the cost incurred by a firm in the process of securing fund from any source whichever the type of instrument of financing is used. These may include stamp duties, proposals preparation,

transport cost, telephone cost and all other costs incurred in the process of raising the funds including legal fees. This implies that sourcing cost takes different forms depending on the type of fund sourced and the type of instrument applied. If however the funds are being received through public issues, the cost could involve a diversity of expenses, which could be quite enormous relative to the amount raised. Unlike the usage cost that normally involves' periodic payments, the sourcing cost is a once and for all outlay incurred at the initial stage of the investment.

#### Components of Sourcing Cost of Fund in Nigeria

The sources and the instruments of funds, which a company has, will determine the extent and type and amount of sourcing cost that the company will incur. For example, in raising fund from capital market through public offer, the sourcing cost of fund will fall into three major categories: (i) Payment to parties involved in the issue, (ii) Fees chargeable by control agencies, and (iii) Marketing costs. Parties involved are issuing houses (the primary intermediaries), underwriters, stockbrokers, trustees, registers etc. They play major roles in the issue and sale of securities especially in sales involving a public offer. The remuneration for each of these parties could take one of three forms: (a) a stipulated outright fee, (b) a fixed rate of the total consideration, (c) Combination of both (a) and (b)

#### Common Types of Fees among the Parties

| Parties Involved               | Nature of Cost                              |
|--------------------------------|---|
| (1) Issuing houses:            | Percentage of total consideration           |
| (2) Underwriters:              | Percentage of total consideration           |
| (3) Stock brokers to the issue | Outright fee or Percentage of consideration |
| (4) Solicitors to the company  | Outright fee                                |
| (5) Reporting Accountants      | Outright Ice                                |
| (6) Company Registrar          | Outright fee.                               |

Trustees are only useful for debt securities and their fees are trustee fees. Equities do not have trustees.

The two most important agencies involved in public offer of securities in Nigeria are: Securities and Exchange Commission (SEC) and the Nigerian Stock Exchange (NSE). Each of these two agencies charges fees for all public issues, SEC fees have two components: (a) fixed registration fees for any new issue, (b) a percentage of the total consideration for each security. It is therefore, a balloon type of payment. In the same way, NSE fee is a combination of (a) a fixed percentage of the total consideration charged as council fees, (b) listing fees for listing each security on the NSE. The listing fee is graduated. They are higher for first-tier quotation and lower for second-tier quotation. Government stamp duties are also graduated.

The last batch of sourcing cost comprises marketing cost and includes cost of printing prospectus; placing Advertisements (this takes almost all media - electronic, paper, etc.) Cost of packaging offers, Cost of creating market awareness and Cost of financing the various meetings especially the completion board meeting. Completion Board meeting is a very important stage of the security issue. It is a meeting where everybody involved in the offer comes to terms about the offer. It helps to sensitize the public about the offer and it can be quite expensive. The market cost also includes the cost of distribution including virtually all the Banks, etc.. They all receive commission thus making sourcing cost quite enormous. The problem here is if the sourcing cost of funds for a capital project were accepted, how would they be annualized? The total sourcing cost ultimately depends on the amount of funds raised. The higher the consideration, the higher the absolute amount of sourcing cost. However, from our own casual studies and interactions, experience shows that there is an inverse relationship between the total cost of an issue and the percentage rate of its total sourcing cost.

#### Usage Cost of Fund

The usage cost of fund is the rate of compensation accruable to the supplier of such funds. This is the cost (or what you pay) for using money. Every type of fund utilized by a firm carries an obligation. That is, to compensate the fund supplier for the right to use the fund supplier money over a

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period. The form of compensation depends on the type of fund supplied. The rate of compensation on the other hand depends on two main issues (i) the amount of funds and (ii) the tenure or duration of the funds.

Whatever the nature or rate, the compensation for each type of fund represents a return to the fund supplier but a cost to the fund user. This compensation cost is the usage cost of funds, which is normally expressed as a percentage of the nominal amount of funds supplied. In the case of debt instrument, the usage cost is usually stated in the Bond indenture. In this regard, it is necessary to distinguish between the nominal cost and the effective cost of an instrument. Nominal cost is the rate stated on the security. Effective cost (Implicit cost) may not be equal to the nominal cost especially in cases where the project attracts some tax rebates arising from the payment of interest charges. The implicit cost of any debt instrument is equal to the nominal cost (or interest charge) on that instrument adjusted by the tax savings, which arises from the interest paid on the debt obligation. Let  $i_{ed}$  = Implicit Cost of Debt,  $E_{cd}$  = Explicit cost of Debt, Then  $i_{ed} = E_{cd} (1 - t)$ ; Where  $t$  = tax rate.

### **Opportunity Cost**

This is the economic viewpoint of cost. This cost concept arises because a project owner, (sponsor or manager, contractor) is normally confronted with a number of competing opportunities all of which cannot be embarked upon at the same time because of financial constraints. When existing alternatives present themselves, the manager must be concerned and decide which of the opportunities should be exploited and which should not. This brings in the concept of lost opportunity (ies) arising out of some mutually exclusive options. The opportunity to earn income on the abandoned investment is lost and this becomes the opportunity cost of investing in the chosen field.

How can the best be determined among many opportunities cost? In sum, the opportunity cost to a firm is the expected rate of return on the most potentially attractive opportunity forgone by investing the money in a given field. Unlike the earlier two concepts, the opportunity cost does not involve in physical outflow of cash. It only merely involves a sacrifice resulting from the value of the abandoned potential returns. The firm may follow either a conservative or liberal dividend payout ratio. If dividend payout ratio were preferred to be liberal, then the firm would not have much of retained earnings left for future expansion (Rogers, 2002). Under such a situation, shareholders are expected to be prudent enough to reinvest the returns in securities so as to earn reasonable rate of returns on such investments. However, it should be considered that investing pattern of shareholders widely varies. Therefore, knowing the exact rate of return that the shareholders would earn on reinvesting is indeed difficult.

In case of conservative dividend pay out ratio, little cash outflow takes place. Therefore, retained earnings have no explicit cost of capital. But they have a definite opportunity cost. The opportunity cost of retained earnings is the rate of return, which the equity shareholder would have earned on these funds if they had been distributed as dividend funds at least equal to the rate that shareholders could earn on these funds to justify their retention.

### **Weighted Average Cost of Capital**

A firm may opt for various sources of funds. The cost of capital of such source is known as specific cost of capital and the combined costs of capital are known as overall or weighted average cost of capital. A firm may raise funds through various sources like banks and financial institutions, debentures, bonds; issue of shares or it may use its retained earnings. If a project uses only one instrument of financing, it will be easy to determine its cost of fund. It can simply be the cost of equity. However, more than one type of fund may be employed to finance a project each having a different cost structure. Which one is now the relevant cost? There must be a way of finding a common platform such that the cost of each element is recognized.

The weighted average cost of funds is represented by the composite cost embodying two key elements. It reflects the rate of individual elements of cost as well as the relative contribution of each element to total financing thus:

$$\text{WACF} = \sum_{i=1}^n r_i \text{ (cost of the } i^{\text{th}} \text{ element in the mix (i.e. } n \text{))}$$

### **bi = Relative contribution of i" clement to total financing**

From the foregoing analysis, it is clear that the weighted average cost of fund (WACF) is the most appropriate index of the cost of funds to a company. WACF should in theory, incorporate both the usage 'cost as well .as sourcing eost of funds'. A' **proper** mix of debt and equity is necessary for making investments. This approach to investment has certain inherent disadvantages. The firm cannot maintain a proper balance between debt and equity. It fails to consider relationships between specific costs. The various sources of capital arc related to each other. The firm's decision to use debt in a given period reduces its future borrowing capacity. As far as shareholders are concerned, they are benefits due to trading on equity as long as profits show a rising trend and at the same time, run at a high risk as debt holds priority of repayment over equity. As risk increases, the shareholders will require a higher rate of return to compensate for the increased risk. Similarly, the firm's decision to use equity capital would enlarge its potential for borrowings in the future.

Therefore, there should be a proper balance between debt and equity. This means that the financial structure and cost of capital (earlier explained) are closely interrelated. Whenever investment in any project is made, it is made under the assumption that the project involves minimal risk. However, the firm in general, and investment projects, in particular, arc always exposed to a variety of risks (Okafor, 1983). It is well known that forecasting cannot be done with any meticulous accuracy as it is based on future events that are uncertain, We have earlier highlighted some types of risks inherent in project financing. In sum, conceptualizing an idea of a project for investment for a business enterprise is a very exciting task but putting figures to the project is quite complicated.

### **Recommendations**

Our final thoughts for enhancing project financing availability at a minimum cost are that:

(i) Owners and Managers of projects must understand the most strenuous tests that investors will put them through before writing cheques. They would not get money from any investor - whether public or private - if they do not meet the investor's needs. Hence understanding the needs' of financiers is a required first step in developing a more effective working relationship among entrepreneurs, lenders and investors - especially with respect to risks such as those related to technology and markets.

(ii) Financiers can also benefit, and thereby help increase the yield on their investments and loan portfolios, if they develop a better understanding of capital project technologies and their inherent risk profiles, and if they integrate this understanding into their project lending and investment criteria early enough.

(iii) One of the most important problems of project development is setting up a suitable financial framework or arrangement that ensures a proper mix or blend of owner's equity with debt instruments. We advise that a project should have a mix or structure in which the owners supply substantially the larger part of the total cost of the project, including the cost of both fixed assets and net working capital. Projects that are little financed from owners' own capital are prone to a rising danger or potential threat to lenders. Should the project fail financially, the lenders would lose heavily and could do nothing to prevent disaster. We therefore, advocate that the owners should be heavily involved so that they will be committed to making the project a success. On the other hand, a project that is heavily debt financed is exposed to heavy burdens of interest charges and principal repayments that can jeopardize the project liquidity.

(iv) Projects should be scaled in terms of its related cost issues. With the small size of many projects, due diligence and transaction costs can make the cost of project financing prohibitive. These costs will drop over time as lenders become more familiar with the type of projects. They will also drop with the development of standardized documentation for project financing, after the initial expense of first developing the documentation, plus, in some cases it may also be possible to lower costs by bundling projects with dissimilar risk characteristic into a portfolio, in which the portfolio of projects would present a lower risk than any single project,

(v) The dangers of excessive debt are accentuated where a substantial part of the debt is of relatively short-term. A level of debt service, which might be comfortably supportable after a new project has become well established, might be enough to ruin the same project during its first few years. In general, industrial firms do not reach their profitability stride before the third to fifth year of

operations. Therefore, debt-service obligations during the first few years must be viewed with some caution. During the negotiations, a "grace period" during which the installment payments for the principal will not be due, must be secured. Alternatively, the sponsors of the project should ensure that loans are sufficiently long-term - over 5 years and preferably as much as ten, excluding an initial grace period of one to three years.

### **Conclusions**

(i) This presentation has shown that the cost of funds in project financing is a very important instrument for a firm's management decision in many ways. In capital project planning and development, it is a key decision variable because it serves as a minimum acceptable rate of return benchmark for accepting to invest in a project.

(ii) It is also a key element in management cost control efforts. It seeks to minimize total cost of funds. Management endeavours not only to control cost of factors (labour and capital), but also control its cost of funds.

(iii) Financial structure decisions require reliable estimates of the individual elements in the financial mix as well as WACF for different financial mixes open to the firm. Ultimately, the choice of a financial structure is guided by considerations of the WACF. In the limit, the financial structure, which minimizes the WACF, is claimed to be the optimal financial structure for the project.

(iv) The cost structure is simply one side of the coin while the source and method of financing; is the other. Like the balance sheet, the level of one determines the level of the other, and the structure of one must have implications for the structure of the other.

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