

DISCUSSION PAPER

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FINANCIAL APPRAISAL OF PUBLIC INFRASTRUCTURE
PROJECTS AND IMPLEMENTING INSTITUTIONS:
GUIDANCE FOR FINANCIAL INTERMEDIARIES

by

David C. Jones

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Water Supply and Urban Development Department
Operations Policy Staff
The World Bank

The views presented herein are those of the author(s), and they should not be interpreted as reflecting those of the World Bank.

David C. Jones is financial adviser for Water Supply and Urban Development at the World Bank. His entire career has been spent in various aspects of water supply, sanitation and urban financial management in the UK, in developing countries and at the Bank.

ABSTRACT

Increasingly, World Bank and other financing for projects is channelled through financial intermediaries. Examples of these range from government departments to more formal financial and/or banking institutions. These institutions then have the delegated responsibility to review and appraise projects and sub-projects on behalf of the international institutions. Furthermore, if the intermediary (or the intermediate financing system) is to continue to operate efficiently on its own, even after foreign financing ceases, it will need to develop and sustain an efficient appraisal capability. This paper offers suggestions on how this might be done, both with regard to projects and to project entities.

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A. FINANCIAL APPRAISAL - GENERAL

General Observations

1. Far too often, financial appraisal is limited mainly to revenue-generation, with a narrow focus upon pricing and taxation policies. The setting of tariffs and taxes is frequently directed only at covering immediate and short-term cash requirements, elicited from simplistic budgetary procedures. These, in turn, are based upon an uncritical and unconstrained view of current public service operations, together with the immediate budgetary impact of new projects coming into operation.
2. Political considerations are often paramount - usually directed at keeping prices down and postponing, for as long as possible, the time at which they should be increased. Of course, the setting of prices and local taxes at the lowest possible levels is usually perceived of as being in the best interest of consumers, at least in the short term. However, this benevolence is sometimes achieved only by the use of large subsidies from general public funds, creating a misallocation of resources. Frequently, also, low prices and charges are associated with poor service delivery, with little or no prospect of upgrading or expansion, because of a shortage of funds.
3. Consumers are almost always resistant to price and tax increases. However, this resistance can be greatly mitigated by perceptions of better service based on improved productivity. These improvements, in turn, will keep down costs and limit the extent of price and tax increases. Much more attention should, therefore, be given to a review of the financial performance and management of the project operating entities. In addition, there should be a complete appraisal of new development projects, with full regard to technical, operational, financial, economic and other implications. Good pricing and cost recovery policies and practices can then be related to more efficient service delivery institutions and to well designed and economically feasible projects.
4. Thus, the first purpose of this paper is to examine the process for appraising the financial management capability of service delivery institutions. Then, it goes on to deal with the appraisal of development projects. The underlying premise is that pricing and cost recovery practices should be examined within the much broader context of these overall assessments. Financial policy decisions can then be related to longer-term economic and financial requirements and implications.

B. APPRAISAL OF FINANCIAL MANAGEMENT CAPABILITY

Introduction

5. The appraisal of the financial management capability of a public utility or non-profit institution often comes about as a result of a request for, or a perceived need for, a substantial change in its manner and level of

operations. One example of such a change would be the possible expansion of operations through an externally-financed development project.

6. Such an appraisal is concerned with financial administration and with financial performance. Emphasis on financial administration is concerned with internal financial control, reporting capability and audit, both internal and external. Financial performance is concerned with financial viability, both of present operations and of potential future operations, including those of a development project. This review is often concerned with pricing policies and with other revenue-generating activity.

7. A sound system of accounting is a necessary pre-condition to the effective monitoring of performance. It is also a central feature in any well developed system of financial control. External financing organizations, such as the World Bank, will often expect to see the implementation of appropriate systems of accounting and auditing as a part of project preparation or implementation.

8. Although a proposed project investment may provide the incentive for the appraisal of financial management capability, such an appraisal is not directed towards the viability of the project itself. Instead it focuses upon the overall viability of the project entity. Thus, it is attempting to determine whether, and to what extent, the enterprise operates optimally at present and whether, with the added burden of the proposed project, it will be able to adapt itself to its new situation without undue financial and management stress.

The Administrative Environment

9. A prerequisite to the review of financial management is an examination of the administrative environment within which the entity operates. This necessitates a review of the organization of the sector and the role of various levels of government (national, state and local) in the affairs of the entity or enterprise. A crucial question is the extent to which the entity has the autonomy to operate free of governmental controls. Whilst some controls over public enterprises are necessary and almost inevitable, excessive controls can often be stifling of any management initiative.

10. It will be necessary to examine the legal basis under which the enterprise operates. Laws or regulations may prescribe its organization and management structure, the scope and limitations of its operations and its financial policies and controls. Among the key financial practices to be considered are the status and role of the chief financial officer, financial performance expectations, financial reporting requirements and audit. These legal requirements must be regarded as minimal. They are also bounds within which the entity must operate. An early judgment must be made as to whether the legal requirements allow sufficient flexibility, whilst imposing adequate controls, within which the entity may carry out in its intended expanded role or scale of operations. If not, steps should be taken promptly to initiate the necessary legal changes to permit such operations. It must be borne in mind that any proposed legal changes may be out of the hands of those most directly interested in the entity's operations. Whilst the need may be

obvious, legislators may find it lacking in urgency and even in conflict with what they consider more important concerns.

General Management

11. The next matter to consider is the general management of the entity. This examination will include a review of the powers and duties of the board and those of the general manager and the top management team. The management structure will be reviewed, with particular reference to the financial function. A special focus should be directed at the power and influence of the chief financial officer. Whilst he certainly should not become a law unto himself, it is a more common experience that nothing could be further from the truth.

12. Many organizations in the public sector are often notorious for their domination by either an all-powerful general administrator or a strong technical or engineering specialist. Thus, we sometimes find, in the former case, a set of detailed and irksome financial procedures, intended to substitute for good, high-level, well-trained and experienced financial management, which is often, indeed, missing altogether.

13. Where a technical specialist dominates, he sometimes perceives his role only as to build quickly or to run services effectively--but without regard to cost, funds availability or economic efficiency. The financial specialist is then perceived only as a source of funds, not really as part of the management process. Indeed, he is often considered a nuisance.

14. Key concerns, in the selection of top managers, are often salary administration and personnel management policies generally--leading to yet another stage in the investigative process. A frequently found impediment to efficient operation of public sector entities is chronic over-staffing, coupled with low pay. Yet often the opportunity to dismiss staff, or even to discipline them, is constrained by bureaucratic constraints, trade union power or even nepotism.

15. As well as looking at management and staffing structures, it is also important to determine the efficiency and effectiveness of individual staff, particularly managers. If key staff cannot perform, consideration should be given to their removal or transfer.

Operations

16. One more important item must be examined before narrowing down to the specialized financial matters--the physical operations of the entity and the provision and marketing of its products. What goods or services does it provide; to whom are they provided; how are they produced; what is the pattern and growth of demand; how are costs recovered; what opportunities exist for more efficient cost recovery; what new services or products are proposed or in demand; what are the important aspects and constraints with regard to construction, operation, maintenance, repair and replacement of physical facilities and equipment? Although many of these matters are not under the control of the financial management, they are so closely related to it as to

be essential features of any financial investigation. Sometimes, indeed, there is considerable merit in the financial investigator asking questions about technical or operational matters. The technical specialist, who might resent such interrogation from his professional peers, will sometimes seek to humor the financial specialist, even to show off, by answering seemingly stupid questions. In doing so, he may reveal matters which might otherwise never have been questioned, leading to further investigations, perhaps by a technical colleague of the financial investigator.

17. Examination of the structures and operations of the enterprise will lead naturally to an inquiry about how its properties are managed. Such an investigation can include "rent-or-buy" assessments; record-keeping; hazard insurance; land management policies and economic utilization of properties. Along the same lines should be a review of the management of stores, equipment and light plant and tools.

Financial Administration

18. At this point, it will be necessary to turn to the financial administration itself. It would be appropriate and desirable to find financial operations under a single manager--a director of finance. This title is used advisedly. The often used designations of chief accountant, accounts officer or revenue officer, for example, seem not to carry the sense of seniority and comprehensiveness which is necessary for such a position. The director of finance must be a key member of the top management team. He will have a number of very specific responsibilities, around which his department should be organized.

19. Perhaps one of the most important financial functions is revenue collection. This embraces taxing or charging policies, relations with taxpayers or customers, assessment measurement, record and collection of revenues, procedures for the follow-up of non-payment and the write-off of bad debts. Often, government involvement is considerable. On the one hand, it may control or authorize the setting of charges or taxes--on the other hand, it may be a principal beneficiary of services and yet often among the slowest and least responsive of debtors. This situation alone may seriously diminish the prospects of a public entity operating in a financially viable manner. Charges and taxes must, as far as is practicable, be difficult to evade and easy to collect. The customer or taxpayer must be treated with courtesy and fairness, with payment of obligations made as convenient and painless as possible. At the same time, remedies for non-payment should be firmly enforced, if only out of consideration for those against whom they are not needed.

20. In parallel with the collection of revenue comes its disbursement. This should, if possible, be handled by a completely separate unit of the finance department from that concerned with revenue collection. Expenditure, of course, does not usually begin within the finance department. It is normally concerned with disbursement of funds provided for in budgets, about which reference will be made later. The initiation for payment will often come from a department which is responsible for the work which the authority undertakes. A common initiation procedure for payments is the official order system and an investigation of financial management should be concerned as to

whether this system (and others fulfilling similar purposes) result in efficient and economical buying procedures and adequate controls over the outflow of funds. Some payments will, of course, arise from contracting procedures and tendering arrangements. These may, themselves, not be under the control of the finance department but will lead back into a review of the general management process. One of the most important contractual payments, of course, is that dealing with the employment of staff. Many of the records of staff activities will be maintained in the Personnel Department. However, the Finance Department will also need to keep vigorously updated all matters relating to staff which will affect the amounts which they are paid for their services. Arrangements would also have to be in place to ensure that the deductions which are made from staff payments for tax, pension funds and other matters are properly disposed of to their intended beneficiaries.

21. Where pension funds are in use, the management of these should also be a source of concern. However, it should be recognized that the generalist financial investigator is probably not well qualified to make detailed examinations of pension fund management. This will frequently require the services of an actuary.

22. Linking the processes of payment and receipt of money will be the function of cash or funds management. This should preferably be in a section of the finance department separate from either the collections or payments sections. Cash management will be concerned, among other things, with maintaining day-to-day cash resources to enable the entity to function. It will also be concerned with the management of long-term and short-term debt. Included in the process of debt management will be the timing of the raising and repayment of loans and the making of advance provision for contractual obligations to pay principal and interest on specific due dates.

Accounting, Reporting and Auditing

23. A central function within the finance department will be that of accountancy. Here it will be that the more senior and qualified personnel are likely to work. Their responsibilities will include the bringing together, codification and classification of receipts and payments of money; the recording of assets and liabilities; and preparation of various kinds of financial reports. A basic concern of the accountancy section will be to analyze and classify financial data in such a way that various kinds of reports needed for different purposes are all readily available from the financial data, with a minimum of further adjustment and preparation.

24. Among the reports which must be prepared are those for internal financial management--reports which will need to go to the finance director, to the general manager and to the board of the entity. Just as important, but often not quite so frequent or so urgent, is the preparation of the periodic financial statements through which the entity will report its overall activities to the outside world, to the public, to lenders and investors and to the government.

25. Depending upon the legal status and operations of the entity, a decision will be needed as to the form in which the annual financial statements will be prepared. As a generality, it is probably true that

revenue-earning enterprises will more appropriately produce accounts on commercial lines. Non-revenue-earning enterprises will tend to produce fund-orientated accounts but there is plenty of scope for compromise between these two systems and others, in the interest of meaningful financial reporting.

26. Hand-in-hand with the process of external financial reporting goes the question of external audit, because financial reports cannot become fully acceptable unless they are regarded by those who receive them as credible and authentic. When we consider who is best qualified to give such an assurance, we often run up against the vexed question of whether this should be an independent commercial auditor or a government auditor. Frequently, public enterprises and entities are required by law to have their accounts audited by public officials, such as an auditor-general. In other cases, a commercial type of audit is considered more appropriate. No matter who does the audit, it should be capable of being carried out with competence, efficiency and promptness, using auditing standards which are acceptable within the profession.

27. For public enterprises and entities, there is probably much more scope for cooperation and interrelationship between the commercial and governmental auditors than currently exists today in many places and this is something which the local accountancy profession should attempt to encourage and sustain.

28. Preparation of accounts for management purposes may well demand that there be a separate unit within the accountancy function dealing specifically with costing or cost accounting. Cost accounting is, in essence, a system of recording and classifying activities in such detail as is necessary to enable managers to make better decisions. This should be the guiding principle of cost-accounting systems. In other words, they should be user-orientated. However logical a system of classification, it seems pointless, beyond a certain stage, to continue with detailed analysis and allocation merely to produce an output in which no-one is interested. There is a corollary to this. The greater the detail of analysis, the more it will be necessary to arbitrarily allocate overheads of various kinds, sometimes to the point where the overheads become more significant than the prime costs to which they relate. This is obviously an area requiring a great deal of professional judgment, rather than the mere slavish following of detailed rules and regulations.

29. The complexities and interrelationships within a finance department can only be kept in context and looked at in their entirety if there is an efficient system of internal audit. The responsibility of an internal auditor is, among other things, to continuously appraise and review the systems of internal financial management and control to ensure that they bring about their intended purpose. Often in public enterprises, the internal auditor's role is seen mainly as confined to verification of receipts and payments. This seems wrong. Instead, such verification should be routinely carried out by those within the respective payments and receipts sections of the finance department. The internal audit section should, instead, be a lean and keen organization, reporting directly to the chief financial officer or to the chief executive upon various aspects of how the financial management system, as a whole, is performing, relative to its obligations.

Risk Management

30. Before leaving the subject of financial administration, attention should be given to the question of risk management within the organization. This was touched on briefly, earlier, with regard to the management of property but there are many other aspects of risk management which affect the financial activities of the entity. Risk management might be placed in two main categories. The first, as already indicated, is the protection of the entity's own properties. The second concerns the protection of the enterprise's financial position against claims by outside parties. The first risk is often dealt with by what is referred to as hazard insurance, covering as it does, damage resulting from such things as fire, storm and theft. The second risk is sometimes referred to as public liability obligations. Risk management and insurance management are not the same thing. Insurance is only one way by which risk management may be dealt with. First, the risks must be identified. Secondly, decisions must be taken as to how the risks might be minimized by appropriate management action. Then, a judgment must be made as to whether the risk, as modified, is acceptable to the entity and whether it would bear the risk from its own resources or through a system of insurance. Over-insurance can sometimes be just as costly as under-insurance, so the entity may well wish to receive specialized advice on the management of its various risks.

Financial Performance

31. We turn now from an evaluation of financial administration to that of financial performance. Since financial performance merely reflects the operations of the entity, it seems appropriate to examine the system whereby the entity plans, programs and budgets for this performance activity. While the budget is often a key document within a public enterprise, its preparation is often done in a way which leaves much to be desired. In formal terms, a budget may be described as the financial interpretation of a plan to put into effect the policies of management. Preparation of a meaningful budget, therefore, must go back to an assessment of the basic operational policies which management has (or should have) laid down for enterprise operations. Within the bounds of those policies, operating departments and technical specialists should have prepared plans and programs to carry on the operations within defined limits of resources. This will usually be translated into an operating or recurrent budget. In addition, the growth of operations as well as their sustenance will require plans and programs for capital investment in land, buildings, infrastructure, plant, machinery and equipment. These activities will usually result in a capital budget. It will be the responsibility of financially and economically trained staff, either in the finance department or in a separate budget department, to evaluate in detail and in total the various components of operating and capital budgets and the relationship between them. The financial implications of the programs and plans must be brought to the attention of the entity's management so that the operational policies and the financial implications of these may be brought into equilibrium.

32. Closely related to the planning and budget activity is the question of the entity's overall financial performance. A starting point for this is often a preparation of proforma financial statements and forecasts. For past

activity, these statements can usually be readily derived from the accounting information and financial statements themselves provided, of course, that these are up-to-date. Further financial forecasts will normally be based upon the plan, programs and budgets, taking account of operational policies particularly with regard to revenue generation. A review of past statements will give an indication of the extent to which the entity has met its past obligations with regard to its financial objectives. It may also indicate whether those financial objectives were realistic or whether, for the future, they should be modified. A key ingredient in the analysis is the establishment of the present financial position of the entity to determine whether this is a sound base from which to go forward into new and expanded activity. Future financial performance can, of course, even within well defined policies, be highly speculative. It is therefore appropriate to examine a number of possible scenarios, using sensitivity and risk analysis procedures to enable judgments to be made as to whether the entity will be able to operate within reasonable margins of safety.

33. For this purpose, a useful tool has most recently come into the hands of financial professionals. This, of course, is the electronic spread-sheet, used with microcomputers. Using this device, it becomes much easier than hitherto to test any number of operating scenarios to determine their financial implications.^{1/} Mention of computers draws attention to the fact that no analysis of financial management capability can be complete without a thorough review of the management information system as a whole and of the computer processes within which it may operate.

34. Not too long ago, for many enterprises, the accountancy system probably was the management information system or at least most of it. Now, with the increasing and less costly use of more sophisticated computerization, the accountancy system is seen as only one module in a total management information system dealing with financial, economic, technical and other data, in an increasingly integrated fashion.

Recommendations and Conclusions

35. The appraisal of financial management capability should obviously result in a series of recommendations. What should such recommendations concentrate on? An overriding concern would undoubtedly be that the entity will have a continuous supply of material, human and financial resources to sustain its intended level of operations. Within this overall concern, perhaps attention should be directed at four main concerns: motivation, organization, policies and skills.

36. No amount of good ideas for the improvement of an entity's operations are likely to succeed unless those concerned with implementing or supporting those ideas can be properly motivated to do so. Included in those to be

^{1/} Caution is appropriate. Spreadsheet systems, whilst excellent for analysis, are usually unsuitable to use for permanent database systems, such as for budgets or accounts. One reason is that the flexibility of spreadsheets makes it difficult to establish audit trails.

motivated are the entity's own staff, customers of the entity, the public at large and even the government, to the extent that it exercises control.

37. The appraisal would also be concerned with organization, both within the entity itself and also within the administrative and financial environment within which it operates. Among policies to be considered are those related to financial performance, accounting, pricing and financing of the enterprise—including a decision as to extent to which it should be financed by debt or equity. Among the means used to measure and monitor the effectiveness of financial policies will be appropriately designed accounting ratios.

38. Focus upon skills draws attention to needs for training, staff development and personnel policies. This, perhaps, comes full circle to motivation, for it is only through the employment of dedicated and well-motivated people that public entities will fulfill their intended objectives.

C. APPRAISAL OF DEVELOPMENT PROJECTS

Introduction

39. The appraisal of financial management capability is often a prerequisite to the appraisal of a development project. Such an appraisal demonstrates the limitations, as well as the strengths, of financial information systems and the need to relate these to other disciplines, typically engineering and economics.

40. In addition to being financially viable, a development project cannot usually be considered acceptable unless it is economically, technically and institutionally sound. It should be the least-cost feasible solution to the problem being solved and should expect to produce net economic and/or social benefits. It should also have a feasible and flexible financing plan, with adequate margins of safety.

41. Forecasting of probable results, though based upon available financial information, requires skill and judgment going beyond mere accounting. Thus, accounting represents only one input to the appraisal process, albeit an essential and important one. Furthermore, as the project is implemented, financial performance, measured through the accounting process, becomes an important feature of internal and external monitoring.

42. Whilst the appraisal of financial management capability can largely be carried out by financial and managerial specialists, it is almost impossible to appraise a development project without the assistance of engineers and others, whose practical skills lie in the evaluation of the technical and economic soundness of whatever is to be constructed.

The Technical Appraisal

43. It is not the purpose of this paper to go into detail about how technical specialists carry out their own professional functions with regard

to development projects. It is, however, necessary to understand broadly what they are responsible for, so that the financial professional can carry out his or her duties within the right context.

44. Among the range of skills required for the appraisal of development projects, as well as the engineering and technical, are financial, economic, managerial, legal and commercial skills. This does not necessarily mean that specialists in all these skills need individually be concerned with the appraisal but it does mean that the professionals that carry out the appraisal must have regard to all of the particular inputs referred to. A development project, almost by definition, usually results in the construction or acquisition of physical infrastructure (or other building or engineering structure) intended to provide additional capacity in meeting the service for which the entity is responsible. This additional capacity may be either to meet growth in demand for service or merely to replace existing capacity which is falling out of use, through deterioration, due to age or lack of repair and maintenance.

45. In examining the relationship between the technical specialist and financial specialist in the appraisal of physical development projects, it is to some extent unfortunate that the substantive work of the financial specialist can hardly begin until a considerable amount of technical work has been done by the engineer. This, however, can be turned to advantage. Whilst the engineer is concerning himself with the background to the physical project, this provides the time which the financial specialist will need, and hopefully use, to examine the management capability of the project entity, as a prerequisite to carrying out an appraisal of the project itself.

Assessment of Demand and Capacity

46. Among the first things the technical specialist must examine is the physical demand for the service provided, whether this be in numbers of passengers on a bus or railway system, numbers of kilowatt-hours of electricity or cubic meters of water. These, of course, relate to revenue-earning enterprises and are, as stated later, highly sensitive to the prices intended to be charged. Demand estimates based on purely physical requirements will not normally be a good guide to the sizing of projects.

47. Peak loads and average demands are both important. The estimated peak load determines the design size of the project if it is to meet every conceivable demand upon the system. How the peak is to be handled is dependent upon the operating characteristics of the service. For example, a railway may run more frequent or longer trains over the same track, up to its capacity. A water supply system may use service reservoirs to handle daily peaks, adding to the source of supply only for seasonal peaks. Electricity systems must usually provide for all peaks to be met from increases in generation capacity. However, since it is relatively easy and inexpensive to transport electricity over long distances, the use of a national (or regional) grid means that increased capacity is only needed for simultaneous peaks in the system as a whole. Otherwise, peaks in one part of the system can be compensated for by slack demand elsewhere.

48. Whilst the question of peak-loading is crucial to system design capacity, it is also of concern to the financial analysis. The peak load largely determines the system costs. Capital costs and related financing costs are almost entirely determined by the overall capacity. Operating costs also are strongly influenced by system size, though these are somewhat curtailed when the system is not operating at full capacity. Revenues, on the other hand, are largely a function of average demand and sales. Therefore, the greater the divergence between peak and average demand, in both quantity and time, the more is the excess capacity cost--to be borne by the average user of the service, thus increasing the unit charge. This can sometimes be mitigated by the use of differential peak-pricing systems but these are often somewhat impractical or expensive to operate.

49. Equally important is to establish demand for services of a non-revenue nature when dealing with roads, drains and other urban infrastructure improvements. Here again, designs are influenced by peak demands. Although revenues are not direct charges upon consumers it is important to appreciate that these revenues must still be raised--from limited tax resources. Whereas larger revenue-earning projects can often increase sales and therefore revenues, larger non-revenue-earning projects will usually mean a higher tax per head on a limited number of taxpayers.

Physical Structures

50. It is principally by engineering analysis that the physical demand for services will be related to the existing capacity to provide them and the incremental capacity needed to add to the existing supply. Normally, it will not be the appraising engineer's responsibility to carry out the detailed physical design of the project structures. Instead, he will become involved at a stage usually referred to as a feasibility stage. Engineers employed by the project entity itself, either as staff or consultants, will have prepared an analysis of the need for a particular type of development project, its size, its broad design parameters and the timetable for its implementation. The appraising engineer will examine these proposals with the authority's engineers to determine whether they are, indeed, feasible. An examination will be made of the technical soundness of the proposed construction and also of the plans for carrying out the construction in the most economical way.

51. Also to be examined are the capability and requirements for maintenance of the structures once they are completed and the need for the rehabilitation of other structures intended to operate in harmony with the proposed project.

Economic Evaluation

52. This physical appraisal is an important prerequisite, and is closely related to, economic evaluation of the project. It can be said almost categorically that however soundly constructed the project and however financially viable it is likely to be, the key determinant to going ahead with it is a satisfactorily economic and/or social cost benefit analysis. One of the first things to determine is that the project proposed represents the least cost and feasible solution to the problem attempted to be solved. It is

highly unlikely that there is only one sound technical solution to the problem. It is also not at all unlikely that the proposed solution does not necessarily represent the least economically costly way of solving the problem. The appraising engineer must therefore examine a number of feasible solutions, analyze the overall costs and the timing of such costs, to determine which of the solutions has the least present value in economic terms. Once the least-cost feasible solution has been determined, and this is not as easy as it sounds, the next step in the economic analysis is to determine, as far as possible, the economic rate of return likely to result from project implementation. This is often far from easy, for it frequently requires the assessment of benefits which are difficult to measure in monetary terms. Sometimes social benefits result from the project which are almost impossible to measure at all. Furthermore, the inter-relationship of costs, benefits and prices means that it is often difficult to operate on the basis that "all other things are equal."

53. The aim of the economic analysis, at least in theory, is to establish an economic rate of return which is perceived as in excess of the opportunity cost of capital which will be invested in the project. Put another way, an attempt is made to measure the return from the project against possible returns from other projects into which the capital might alternatively be invested. The implication that the economic analysis is somewhat theoretical should not, however, detract from its usefulness. To imagine that economic analysis can yield a single rate of return number to several decimal places is, indeed, illusory. It is, however, often perfectly reasonable to seek for a number adequate to within a range of one or two percent on either side, which will act as a focal point, derived from the quantification of all measurable data. Costs and benefits can then be tested for sensitivity and risk, both with regard to their amount and their timing. Furthermore, if all quantifiable benefits have been assessed, the non-quantifiable or social benefits of the project can be judged for their adequacy within much narrower limits. With many public utility projects, revenues from sales of the output from the project are likely to be used as surrogates for the benefits to the consumers. This sometimes leads to difficulties. The first one arises because often the existing service is being provided at sub-optimal prices, fixed far below the marginal cost of providing the service. With the advent of the new development project, the marginal cost is likely to be even higher, meaning that prices of services are almost certain to have to be raised. Thus, with such a wide disparity between the existing and likely future prices, the revenues used in an economic forecast can hardly be said to be based on observed willingness to pay by the consumer. They are based, instead, on an assumed willingness to pay, which is a far less rigorous concept. Depending upon demand elasticities also, any significant increases in price are likely to result in reductions in demand for the service which might, in turn, require a redesign or postponement of the investment project itself.

54. The prices assumed for the revenue calculations will be average prices, representing what every likely consumer is prepared to pay (at the margin) as a minimum. They take no account of the possible willingness to pay of individual consumers above the average price. Thus, no allowance is made for the so-called "consumers' surplus" and the economic analysis is based upon a minimum measure of benefits. However, from a financial viewpoint, this may not much matter. Unless the "consumers' surplus", or part of it, can be

captured by the entity through a system of differential prices, these additional economic benefits will not be translated into improved financial performance.

55. Finally, whereas the financial analysis will need to be done in current price terms to reflect funds requirements, economic analysis will normally be carried out in constant prices to eliminate the effect of inflation upon both costs and benefits in determining real or economic values.

The Cost Estimate and Financing Plan

56. The linking of the economic analysis to the physical evaluation of the project, to some extent, jumps ahead of some of the aspects of financial appraisal and analysis. A most important outcome from the technical analysis is the preparation of a cost estimate. This should be broken down by components and include adequate provision for technical contingencies and price escalation. Technical contingencies must be included, to allow for changes in physical construction which almost inevitably occur and are beyond the control of either the contractor or the project entity. The cost estimate should be divided into its foreign and local cost components and phased over the years of project implementation. The assessment of foreign exchange requirements is exceedingly important because one of the principal purposes of the cost estimate is its use as a basis for the development of a financing plan to cover the full cost of the project. Even if the full costs of the project can be covered from local currency sources, there is not necessarily any guarantee that these local funds can be exchanged for the necessary foreign currency to purchase goods and services from abroad. Then, the entity (or the government on its behalf) must turn to one of the foreign exchange lenders--either a foreign commercial bank or one of the international aid organizations.

57. The development of a financing plan can be done from two alternative perspectives. The first alternative is to regard the project as standing on its own and to develop a financing plan which meets the construction costs of this particular project. The other alternative is to regard the project as merely one component in the overall investment program of the project entity, at least for the period of project construction. In this case, the financing plan will be addressed to providing all of the funds necessary to meet the entire investment program of the entity, including the investment requirements of the project and any necessary increases in working capital. Intended sources of finance will have to be assessed, both with regard to their amount and the timing of their availability. The financing plan cannot be too tightly drawn but should leave adequate margins of safety. In addition, there should be a fall-back position, in case something should go seriously wrong with the cost or timing of project implementation or, indeed, with the availability of funding in the financing plan itself.

58. The first thing to consider, in the event of such an emergency, is whether additional funding can be made available from other sources. This additional funding may, of course, be more expensive than that considered originally or it may be more administratively irksome to obtain and linked with unpalatable or onerous conditions, not initially envisioned. This would be particularly true if the additional funding were to come from governmental

sources. If it was obvious that additional funding, at least on reasonable terms, would be unlikely, then a contingency plan would be necessary to facilitate the cutting-back or postponement of the project itself or perhaps of other less essential parts of the investment program. This is certainly not as easy as it sounds. After all, if a project has been finely designed as an integrated package, any reduction in its components is likely to make it, at least temporarily, sub-optimal to its intended purpose. Sometimes, however, hard choices must be made and there are no alternatives.

59. Sources of funds for a financing plan can include local and foreign borrowing, equity contributions or grants from governmental sources and sometimes contributions from customers or participating enterprises. One other important source can often be that of internally generated funds. These will only be available after the enterprise has covered all of its operation, maintenance and debt service requirements for its ongoing activities. They are highly sensitive to the prices currently being set (or intended to be set) for the sale of its products. In assessing the quality of the various sources of funds, one thing to be concerned about is the extent to which any or all of them are contractually fixed, even in the event of substantial cost over-runs. It is not uncommon, for example, for financing plans to be highly levered against a residual provider of funds. Often, this will be a government, already hard pressed to come up with a minimum contribution to match those of others. Suppose, for example, that ninety percent of project funding is in fixed contractual terms with the government undertaking to provide the remaining ten percent and to meet any cost over-runs. In these circumstances, even a modest ten percent increase in project cost would double the contribution of the government, creating a serious situation.

Financial Forecasts

60. Even if an apparently satisfactory package of funds can be put together to cover the full project cost, the analysis is not yet complete. The financing plan must still be examined for its effect upon the revenues of the project entity, particularly with regard to debt service. At this point, it becomes necessary for the financial analyst to prepare a complete set of financial statements and forecasts stretching into the future beyond the intended start-up date of the project and covering all financial aspects of the project entity, including that of the project itself. Forecasts of operating statements will need to have regard to revenues and expenditures. The expenditures will include operation, maintenance, repairs, administrative costs and (if a revenue-earning enterprise) depreciation.

61. Funds flow forecasts will also be necessary. These will include forecasts of internally generated funds derived from income statements. Provision for debt service will be needed, both for debt already current and also for debt expected to be incurred as a result of the future investment program. When the net internal sources of funds have been ascertained in this way and matched against investment requirements, it will be possible to determine the amount and timing of external financing needed. Indeed, a summary of the funds flow statement for the period of project construction or implementation can quite often be used as the financing plan itself.

62. For a revenue-earning enterprise, the expected revenues will, of course, result from charges to customers for goods and services provided. For a non-revenue-earning enterprise it will be necessary for additional costs, resulting from the project and other investment activity, to be covered from additional off-setting revenues, through the raising of additional taxes or from some other appropriate sources. To ensure that adequate revenues are available, both to cover operating costs and also to contribute towards investment, it will be necessary for the financial specialist to analyze, with the project entity, its revenue policies. This will include the examination of present and proposed prices or tax levels and also collection efficiencies. If existing policies and practices are unlikely to result in the necessary generation of funds, it will probably be important to get a commitment from the project entity to change these policies. This may sometimes be done as a condition precedent to financing the project or to going ahead with its construction or implementation.

63. Sometimes, as in the case of banking institutions, pricing policies will be directly concerned with interest rates. These, of course, are interlinked with the overall financial market of the country and in turn to its macro-economic policies. It is unlikely that the interest rate policies and practices of a single entity can be changed without reference to the financial sector as a whole. In this case, discussions with the Central Bank or the Ministry of Finance may prove to be inevitable. Discussions with government authorities may also be essential where pricing policies are subject to government controls.

Procurement of Goods and Services

64. Of particular importance to financial performance is the manner in which goods and services for the project are to be procured. Decisions will be necessary as to how much of the project, and which components, will be carried out by contractors and how much (if any) by the project entity's own staff. Unless there is a continuous and constant level of capital works, it probably makes sense to contract out most of the work. The employment of a large direct labor force causes somewhat the same problems as the meeting of peak demand, discussed earlier. The staff can only be fully and efficiently employed during peak construction periods. For the rest of the time, part of the force will remain under-utilized, which is costly.

65. Where contracts are used, their selection should be on the basis of competitive bidding. Where foreign exchange costs are involved, there is usually an advantage to making the bidding international. The overriding principle should be to get greatest value for money. Contracting procedures should, therefore, be examined to ensure that they operate to the maximum advantage of the enterprise.

Implementing Capacity

66. Finally, a review should be made of the overall managerial technical, administrative and financial capability of the project entity to undertake the project. This will include a review similar to that conducted for general financial management capability. The financial professional will also need to be concerned with whether there will be a satisfactory project accounting system which, in turn, will be properly audited.