

3. FINANCIAL ANALYSIS AND APPRAISAL OF PROJECTS

3.1 INTRODUCTION

- 3.1.1 OM 500 and OM 600 (Knowledge Network Section 7.9) address project preparation and project appraisal respectively. While project preparation is the process that converts a project idea into a formal plan, the overall objective of appraising a project is for the Bank to satisfy itself as to (i) the project's technical, financial and economic viability against the background of national, sectoral and local needs for the investment; (ii) the economic and financial justification for the proposed output(s); (iii) project and/or entity sustainability; (iv) the extent of its contribution to human and technological advancement; and (v) governance aspects of the project. Financial analysis is important for understanding whether a project is financially viable and that the EA is financially sustainable and capable of bring the project to fruition.
- 3.1.2 Project investment is a series of processes aimed at foregoing short-term economic benefits from financial resources by investing them in land, buildings, equipment, and other capital assets to produce products, goods, and services directly or through investments in securities or direct loans to financial intermediaries with the objective of maximizing economic benefits over the life of the investment. Projects are managed by and implemented by Executing Agencies (EAs) and Implementing Agencies (IAs).
- 3.1.3 These Guidelines recognize that the analysis of projects should be carried out through an integrated approach including a through evaluation of the physical, economic, financial, stakeholder and risk aspects of each project in a single consistent framework or model. The assessment of the physical aspects of the project focuses on a determination of or identification of the least cost technical solution to the issue addressed by the project. The issue that the economic analysis is mainly focused on is the contribution of the project to the economy of the country concerned and the economic cost of producing the project goods or services. Within the integrated appraisal framework, the economic analysis is built directly upon the financial cash flows of the project. The economic treatment of project benefits is initially based by either the revenue generated by the project and/or its cost savings, consistent with the methodology for the financial evaluation of revenue or cost savings. Similarly, direct project costs form the basis of the input values for the economic evaluation of the project. Upon this base any externalities are measured and included in the economic analysis. In the stakeholder analysis the quest is to identify the primary stakeholders affected by the project. The decision-makers need to know the present value of net economic benefits created by the project, and the economic gain/loss realized by each stakeholder as a result of the project. Decisions regarding any differences between the distribution of net economic benefits and net financial benefits must be explained. Finally, the objective of the sensitivity and risk analysis is to identify the risks the project faces and address those mitigating measures, if any, which need to be instituted. Project managers can, to a certain extent, control some risk factors while others can only be addressed at the level of the EA and the government of the country concerned. There are also some factors that are totally exogenous forces that none of the country institutions can address.

- 3.1.4 These Guidelines holistically addresses project appraisal from a financial perspective. They integrate the financial analysis of the project within the overall financial framework and financial management of the Executing Agency (EA). The financial implications of the physical solution chosen are addressed in the financial evaluation of the project, while the net financial benefits of the project are subjected to sensitivity analysis and discussed in the appraisal report. Although the evaluation of the economic and stakeholder aspects of projects are included in the appraisal report, they are outside the scope of these Guidelines. These matters are addressed in the “Guidelines for Economic Analysis and Design of Bank Group Projects”.
- 3.1.5 Under the stewardship of Human Resources Department (CHRM), and the coordination of the Financial Management Department (FFMA), the Bank initiated the Showcase Project Initiative (SPI) as part of its ongoing efforts to improve project quality at entry by providing staff with the necessary tools to perform state-of-the art project appraisal. A team of consultants from Queen’s University assisted Bank staff in conducting enhanced project appraisals on four projects covering Power, Agriculture, Water, and Telecom sectors. These have become benchmark case studies for the Bank Group (Knowledge Management, section 7.14).
- 3.1.6 This section of the Guidelines is aimed at providing a financial analyst with a comprehensive view of the financial analysis and appraisal of investment projects, based on the Bank’s Operational Manual and related guidance documents. The rest of this Chapter is organized in the following eight sections:
- **3.2 – Investment Projects:** This section discusses potential revenue-earning and non-revenue-earning projects.
 - **3.3 – Appraisal Checklists:** Generic appraisal checklists are discussed in this section. The checklists provide sequential activities in financial analysis of projects.
 - **3.4 – Estimated Project Cost:** This section discusses the preparation of Project Cost Estimates.
 - **3.5 – Financing Plan:** This section discusses the identification of the financing plan for the project.
 - **3.6 – Project Financial Viability:** This section discusses the methods for determining the project’s financial viability. The need for financial analysts to identify and bring for discussion high-value financial policy issues related to financial viability and that require harmonization across donors are discussed here.
 - **3.7 – Economic and Financial Objectives:** This section discusses economic and financial objectives and policy goals associated with a project.
 - **3.8 – Preparing Financial Forecasts:** This section discusses the major decisions and assumptions, as well as presentation issues the financial analyst must consider in preparing financial forecasts.
 - **3.9 – Financial Covenants:** This section discusses the selection and applicability of financial performance indicators as covenants in the loan documents.

3.2 INVESTMENT PROJECTS

- 3.2.1 Through active participation in the Paris High level Forum, the Bank committed itself to base its overall support – country strategies, policy dialogue and development cooperation programmes – on RMC’s national development strategies and periodic reviews of progress in implementing these strategies (Knowledge Management, section 7.3). The Bank’s preparation of the Results-Based Country Strategy Paper (RBCSP)

allows it to clearly define its strategy in relation the applicable RMC's national development strategy. The Bank's RBCSP evolve from and build country systems, providing a framework for designing the strategy and implementation plans around specific measurable outcomes, building synergies between lending and non-lending activities and selectively leveraging opportunities to ensure the greatest impact of Bank Group interventions. Individual project proposals are considered by the Bank if they: (i) address key RMC developmental needs; (ii) meet the Bank's basic development and investment criteria; and (iii) are 'owned' by the borrower and stakeholders. Once project proposals received by the Bank go through a rigorous vetting procedure in line with the requirements of OM 340 they are included in a 3-year Rolling Lending Programme that is subject to Board approval.

- 3.2.2 The following two sections provide indicative lists of revenue-earning and non-revenue sectors, sub-sectors and projects covered in a typical 3-year Rolling Lending Programme. The lists exclude Technical Assistance and needs to be updated on an ongoing basis.

Revenue-Earning Projects

- 3.2.3 The following is a possible list of potential revenue-earning projects. Operations Complex Departments should ensure that financial expertise is made available for these projects, during project identification, preparation, appraisal and supervision: Electric Power, Flood Management, Grain Productivity, Irrigation, Micro-finance, Road Transport, Rural Electrification, Rural Finance, SME Development, Urban Development (e.g., water supply), Urban SME Business Development, Water Resources.

Non-Revenue-Earning Projects

- 3.2.4 The following is a possible list of potentially non-revenue-earning projects. Financial analysts' advice may be sought in relation to the cost-recovery and efficiency improvement aspects of projects in these categories. Importantly, financial management expertise is required during project supervision: Agriculture Extension, Basic Education, Civil Service Reform, Coastal Resources Management, Eco-tourism, Health Services, Inter-regional System Improvements, Natural Resources Management, Non-formal Education, Post-Secondary Education, Rural Infrastructure, Rural Poverty Reduction, Rural Productivity Enhancement, Social Sector Development, Urban Development (e.g., drainage), Urban Environment.

3.3 APPRAISAL CHECKLISTS

- 3.3.1 The Knowledge Management section 7.16 provides a generic checklists for the financial appraisal of: a non-revenue earning project; revenue-earning project; and financial intermediary institution. It, also, includes a checklist to review financial aspects of Appraisal Reports.
- 3.3.2 Bank financed non-revenue projects would be in the public sector. Revenue-earning projects may be in the public sector or in the private sector¹. Financial intermediaries range from large-scale apex institutions that support multiple FIs to specialised industrial and agricultural FIs and micro-finance organizations. Because of the unique financial

¹ These Guidelines are restricted to public sector operations. The private sector lending window of the Bank is governed by separate policies and guidelines.

characteristics of FIs a separate checklist is proposed. Projects are different in their objectives, their sectoral and institutional structure and management as well as their design and implementation. Consequently, care should be taken in the application of the checklists.

3.4 ESTIMATED PROJECT COST

Introduction

- 3.4.1 A key element of the Bank's due diligence is to require its staff to work with their counterparts in borrowers' agencies, particularly EAs, throughout the processes of project identification, preparation and appraisal. This is to ensure the Bank that all reasonable efforts have been made by the borrower to prepare meaningful forecasts of cash receipts and payments to support effective and timely project delivery. After the start of project implementation of non-revenue earning projects, the Bank continues to require updated forecasts to project completion to provide early warning of project problems so that corrective action may be taken. In the case of revenue-earning projects the financial analyst will agree with the EAs the period during which updated forecasts should be provided. The exact period will be at the discretion of the financial analyst and will normally not exceed a total of ten years ranging from three to five years following project completion. This period will be specified in the loan agreement.
- 3.4.2 During project preparation and appraisal, staff should carefully scrutinize the estimated cash receipts and cash payments for the project, but it remains the responsibility of the Bank's Task Manager to ensure that the project base costs are realistic. The word "staff" is emphasized to stress the fact that a financial analyst and the project engineer each have a responsibility, to not only scrutinize the cost estimates generally, but more particularly to ensure that the items which are included in the base cost are realistic. In addition, the financial analyst and the project engineer should ensure that related components and investments that are not included in the project cost estimate but may be of a potentially beneficial nature are omitted only for sound technical, financial and economic reasons.
- 3.4.3 The rest of this section discusses: the use of the Standard Project Cost Table (COSTAB²) computer model; the principal elements of cost estimates and how these are developed, including physical, price and risk contingencies and the disbursement profiles. In addition, outlines of a typical Project Cost Estimates Table and a Financing Plan are reviewed.

The Use of the COSTAB

- 3.4.4 Financial analysts may use the COSTAB computer model. COSTAB calculates physical and price contingencies, taxes and foreign exchange. It displays data in detailed costs tables, summary project cost tables, financing plans, procurement tables and loan allocation tables. It also converts financial costs to economic costs for economic analysis.

² COSTAB is a software developed to improve the efficiency and effectiveness of project work done by the World Bank and its borrowers. It helps project analysts organize and analyze data in the course of project preparation and appraisal (<http://www.worldbank.org/html/opr/costab/contents.html>).

3.4.5 The COSTAB software program can be downloaded from the following website: <http://www.worldbank.org/html/opr/costab/costab.html>.³

Project Cost Estimate

3.4.6 The Project Cost Estimate Table shows the total cost of a project and incorporates all elements in a manner that is both explicit and meaningful. It provides an understanding of the costs of the principal components as at the date of appraisal. Equally it provides information for project cost control during implementation by the borrower, the EA and the Bank.

3.4.7 The model of the Project Cost Estimates Table provided below is suitable for the main body of an Appraisal Report (AR). Each line item can be broken down to provide additional sub-line items. The COSTAB software provides a high degree of detail that can be tailored for the AR main text and for an annex thereto.

PROJECT COST ESTIMATE TABLE

COUNTRY: XXX					
PROJECT: Name of Project					
In (thousands)/(millions) of UA/Bank Lending Currency					
	Local Costs	% of Total	Foreign Costs	% of Total	Total
COMPONENTS ***					
Land	0.00	0	0.00	0	0.00
Capital Goods	0.00	0	0.00	0	0.00
Civil Works and Construction	0.00	0	0.00	0	0.00
Consulting Services	0.00	0	0.00	0	0.00
Training	0.00	0	0.00	0	0.00
Incremental Administrative Costs	0.00	0	0.00	0	0.00
Initial Working Capital	0.00	0	0.00	0	0.00
Base Cost as at (date)	0.00	0	0.00	0	0.00
Contingencies ***					
Physical	0.00	0	0.00	0	0.00
Price	0.00	0	0.00	0	0.00
Other (Identify)	0.00	0	0.00	0	0.00
SUB-TOTAL	0.00	0	0.00	0	0.00
Financing charges ***					
Interest during construction	0.00	0	0.00	0	0.00
Other	0.00	0	0.00	0	0.00
TOTAL PROJECT COST AND FINANCING REQUIRED	0.00	0	0.00	0	0.00
*** Footnotes to be used as necessary, particularly for contingency explanations					

³ The Information Methods and Management (CIMM) Department of the Bank is responsible for providing copies of the software, a user manual and user support services for the software.

Base Cost Estimate

Principle Components

- 3.4.8 The principal components that should be included in the base cost typically consist of local and foreign costs of (i) land and rights of way needed for implementation and incurred after the loan request was made, (ii) capital goods (including initial requirements of operational inputs, e.g. fertilizers), (iii) civil works and construction, (iv) consulting services, (v) training, (vi) incremental administrative costs (including cost of staffing and auditing to satisfy the Bank's requirements) incurred during implementation, (vii) initial working capital, and (viii) taxes and duties incurred on any of the above components. The cost of land, rights of way and taxes and duties are properly included in the base cost of a project even though the Bank does not finance these costs.
- 3.4.9 Normally an EA will have project designers (engineers, architects, agriculturalists, economists, etc.) who undertake a feasibility study to design the physical operational features of a project and ascertain the cost and the economic benefits of the project. These project designers may be staff of the EA or foreign and local consultants or a combination of the three. The cost of the feasibility study may be met from a technical assistance loan, or from the borrowers own resources. Normally the design cost will be incurred prior to project implementation, but there will be circumstances where the final design work is ongoing during implementation and may form part of the project cost.
- 3.4.10 Typically, base costs are estimated as part of the feasibility study and are refined to take into account any further engineering and other detailed preparation work that has taken place by the time of appraisal. With large, complex projects, or in cases where there is little record of recent procurement involving Bank projects in the country, the services of specialized cost estimating firms, or quantity surveyors, or the advice of contractors or manufacturers may be employed to confirm or modify base cost estimates. During appraisal, the estimates should be adjusted and updated to take account of any price changes in the period between their preparation and the base cost date specified in the AR.
- 3.4.11 The role of the appraisal mission's financial analyst may range from (i) satisfying him/herself that the methods, data and assumptions used in the determination of the project base cost are credible and justifiable, to (ii) assisting in the assembly of data provided by the designers in order to compile the cost estimate (OM 500). The base cost estimate assumes that the quality and quantity of works, goods and services as well as the prices of inputs and outputs relevant to the project have been developed as accurately as possible using, wherever feasible, known factors which will not change during implementation and that the project will be implemented precisely as planned. Contingency provisions provide for the possibility that the base cost estimate may not have accurately estimated the quantity or quality of goods and services needed or that the prices of those goods and services may change subsequent to the date of the cost estimate.
- 3.4.12 The Base Cost Estimate is the appraisal mission's best judgment of the estimated project cost as of a specified date. The Date of Base Cost Estimate should be specified in the AR and should not be earlier than six months prior to presentation of the loan proposal to the Board for approval. If the elapsed period prior to Board presentation is more than six months, the base costs should be revised by indexation for the time period elapsed up to a

maximum of 12 months from the date of the Base Cost Estimate. A reappraisal of costs should be made if the presentation of the loan to the Board is more than 12 months after the Date of Base Cost Estimate.

Retroactive Financing

3.4.13 As a general rule the Bank does not disburse funds for expenditures incurred and paid for by a borrower or recipient during or after appraisal but before a Bank loan agreement or a technical assistance agreement becomes effective. However, based on a prior agreement between the Bank and the borrower, a clause authorizing the financing of agreed expenditures incurred before the loan effectiveness date may be included in the loan agreement. This clause should indicate the amount of the retroactive financing, the category of expenditures concerned and the date from which the expenditures may be incurred. The financial analyst should ensure that any request specifying justification(s) by a borrower for retroactive financing is recorded in the Aide Memoire prepared during project identification, project preparation, and/or project appraisal, as well as in the related reports issued on return to Headquarters.

Contingencies

Introduction

3.4.14 The reliability of base cost estimates reflect the amount of detailed preparation work which has been undertaken before appraisal. For example, for a large reservoir, or a major roll-on/roll-off harbour facility, the detailed engineering may be completed before appraisal and the base cost estimate will have a correspondingly high degree of reliability. This, also, applies to projects involving purchases of equipment that is of standard design, in quantities that are precisely specified, for example, telecommunications expansion.

3.4.15 Some projects may be appraised when there is much less detailed information available about designs or quantities. In health care projects, for example, the exact locations and the designs of clinics may not be known at the time of appraisal. The base cost estimates in such cases may have been made by setting a target population to be served, allocating the building space per 1,000 residents according to local norms and estimating costs on a price per square meter basis obtained from actual costs of similar local clinics. Similarly in some sector loans and agricultural projects, slum upgrading projects, minor water and sanitation systems projects or highway improvement projects base costs may be estimated by extrapolation using unit prices derived from detailed designs and specifications for sample areas and facilities which are representative of the various project components. Such bases for estimating are acceptable to the Bank, provided the appraisal team is assured of the relevancy and currency of the data, and that, where necessary, appropriate contingencies are recognized.

3.4.16 Contingencies address the possibility that unanticipated costs may need to be incurred or that quantities required and/or prices may change between the specific date of the base cost estimate and the actual expenditures for those items when implementing the project. Contingency allowances should reflect the costs of probable physical and price changes arising from special risks that can reasonably be expected to increase the base cost estimate. However, contingencies cannot provide assurance against the effects of all possible adverse events or conditions.

- 3.4.17 Contingencies are an integral part of the expected total cost of a project as well as the financing plan and are normally necessary for all project items involving significant expenditures. Separate estimates should be made of physical contingencies and of price contingencies. Contingency allowances should be identified in the project cost tables and shown as individual line items in the project cost table separately from base cost estimates. For projects with several major components, it is generally desirable to present contingency estimates separately for each component as well as for the project as a whole. The text accompanying the cost tables should discuss the physical factors, price changes and risk factors expected to affect the project costs from the date of the base cost estimates to the completion of the project. Any special features relating to contingencies should be explained in the AR. Appraisal missions should confirm that: (i) the estimates produced for ARs specifically designate all physical and price contingencies as such; (ii) the amounts are reasonable; and (iii) no contingencies are included in the base cost estimates.
- 3.4.18 In the case of sector/sub-sector loans where physical targets have been broadly defined but the exact scope is not essential to the success of the project (e.g., installation of 500 serviced sites as part of a rolling program, or maintenance of rolling stock in railway workshops) only price contingencies should be included. The impact on such projects of any shortfall in the expected amounts of works, goods or services should be tested by sensitivity analysis.
- 3.4.19 In the case of technical assistance projects with well defined Terms of Reference and relatively short time duration and industrial development finance and agricultural credit projects – where the project is essentially a line of credit to help finance a program defined in financial terms and without specific physical content – contingency allowances should not be included.

Disbursement Profiles

- 3.4.20 The Bank has gained considerable experience with the capacity and capability of borrowers and their EAs in various sectors to adhere to construction schedules. Patterns of disbursements for loans to the same sector or borrower show that EAs rarely meet these schedules, and time and cost overruns are a consistent feature of many lending operations. Therefore the estimated project construction period should be influenced by past experience and should not vary greatly from the average for similar projects executed in the same sector in the same country.
- 3.4.21 To develop a realistic disbursement profile, the financial analyst should work with the Loan Disbursement department to obtain disbursement data for the country and sector in which the project under development is located. The most appropriate period would be about 12 years prior to the current fiscal year of the Bank. If shorter periods are used, both for the profile period and for the proposed disbursement period in the AR, a specific explanation of the factors that would enable achievement of shorter periods should be provided.
- 3.4.22 The adoption of realistic implementation and disbursement periods based on sector and country disbursement profiles should be reflected in the calculation of contingencies and the economic rate of return and financial internal rate of return calculations.

Physical Contingencies

- 3.4.23 Allowances for physical contingencies reflect expected increases in the base cost estimates of a project due to changes in quantities, methods and/or the period of implementation. Physical contingencies should be calculated on both foreign and local cost items, and expressed as percentages of the foreign and local base costs in the Project Cost Table. OM 600, Annex 3 provides extensive advice on the determination, calculation and application of physical contingencies to base prices. The Annex, also, advises on the methods of including price contingencies which should also be applied to physical contingencies, as well as the base costs.
- 3.4.24 The principal factors from which uncertainties arise in civil works and for which provisions for physical contingencies should be made are (i) the type of terrain where the project is to be constructed, particularly, (a) geologically difficult areas where slips and slides that are difficult to predict are frequent, (b) areas of thick marine clay deposits where the flooding potential is high and (c) areas subject to frequent earthquakes, (ii) the climatic conditions in the project area e.g. the likelihood of unusual rain that may cause flooding or strong windy conditions, (iii) difficult access to the site of the work because of long and poorly maintained roads or railroads which may be subject to destruction due to flooding, landslides, etc., (iv) the amount of field work which has been completed, particularly the degree of thoroughness of borings and sub-surface exploration as well as the location and testing of construction material sources (gravel, rock quarries, etc.). Some projects covering a large area or involving very long and deep excavations, such as tunnels, are so expensive or even impossible to explore thoroughly in advance that it may be prudent to assume some risks of encountering poor conditions, (v) the consultant's knowledge of local conditions of materials and labour costs, (vi) the degree of precision with which the quantity estimates have been prepared (vii) the possibility of design changes during construction and the addition of unforeseen items and (viii) the quality of contract supervision.
- 3.4.25 Some of the main factors that cause uncertainties with regard to material and equipment components are (i) the degree of precision with which quantity estimates of needed material and equipment, including necessary spare parts, have been prepared; (ii) the extent to which detailed specifications for material and equipment have been set; and (iii) the extent to which equipment is to be purchased *off-the-shelf* or on special order.
- 3.4.26 The extent to which the services can be accurately and fully defined in advance is a major factor causing uncertainties with respect to the provision of services. If the extent of service requirements can only be fully defined during the course of project implementation then a relatively large contingency allowance might be reasonable. An example is the case of site investigations for the design of a large command area irrigation scheme.
- 3.4.27 The Bank expects that physical contingencies would normally be between 5 to 10 per cent of base costs. Acceptable ranges of physical contingencies will vary from sector to sector as well as for the various components of a project. As an example, the contingency allowances for civil engineering works for power stations probably would be higher than those for the supply of materials or equipment for schools. When physical contingencies are relatively large, for example more than 10 to 15 per cent overall, consideration should be given to further refining basic designs and additional site investigations in order to reduce uncertainties before appraisal. Higher physical contingency provisions are,

however, often necessary to reflect an extraordinary uncertainty inherent in works where it is too costly, or impractical to further refine the quantity and cost estimates. Examples include: structural foundations in difficult soils; marine work; tunnelling; dam construction; construction of roads involving difficult soil conditions; pile driving; and rehabilitation of existing facilities. Inclusion of these higher physical contingencies must be fully justified in the AR.

- 3.4.28 In any event, if the physical contingencies exceed 5 per cent of the base cost estimates, justification should be made in the Aide Memoire and BTOR during project identification (OM 500) and in the AR (OM 600).

Price Contingencies

- 3.4.29 Price contingency allowances reflect forecast increases in project base costs and physical contingencies due to changes in unit costs/prices for the various project components/elements subsequent to the date of the base cost estimates. Price contingencies should be expressed as percentages of the base costs plus physical contingencies calculated separately for the local and foreign expenditures of the project. OM 600, Annex 3 provides extensive advice on the development and application of price contingencies and charges. The Country Economist is mandated with advising on inflation rates and foreign exchange factors that may have an impact on price contingencies.
- 3.4.30 Periodically, the Country Economist will provide suggested price escalation factors for internationally procured goods and services. Such price escalation factors should not be applied mechanically. If they are deemed to be inadequate or excessive more appropriate factors may be applied with the approval of the Director concerned. For local cost components, the expected price increases should be calculated in accordance with the inflation rate in the borrowing country. The Country Economist will periodically update suggested escalation factors to be applied for local cost estimates.
- 3.4.31 In determining the appropriate amount to be provided for price contingencies the following key factors should be considered (i) the commencement date for project expenditures and the total project implementation period (ii) in the absence of some rationale for modifying a Country Economist's suggested local price escalation factors (which should be explained in the BTOR at project identification and in the AR) the suggested escalation factors should be consistently applied to all projects in that country; (iii) the extent to which local or foreign prices for particular types of works, goods and services will follow general inflationary trends. For example, when a construction industry is overextended or depressed, price trends may exceed or be lower than the general movement of prices. Similarly, technological improvements in the production of some types of equipment have resulted in a much lower rate of price increase than general price trends and (iv) the extent to which a large project may have the effect of increasing the cost of local resources such as land, labour and raw materials more rapidly than the general price escalation.
- 3.4.32 Governmental procurement procedures that award only fixed price contracts even when construction will be ongoing for a number of years, or that set a ceiling on the allowable price adjustment should be ignored when preparing project costs for Bank financing. Bidders typically adjust for such practices by increasing their base cost bids and bidders total cost including their price contingencies is often not significantly different to the

unadjusted base project cost plus price escalation forecast by the Bank. Accordingly, in using estimates prepared by bidders in establishing the true base cost estimates, care should be taken to deduct any price contingencies implicitly included by the bidder as part of their base cost.

- 3.4.33 If, in the opinion of the financial analyst (and/or the mission) distortions may occur due to significant differences between domestic and foreign inflation rates and potential exchange rate adjustments the issues, where necessary, should be referred after discussion with the Country Economist to the concerned Director. This would apply in those countries that may be subject to frequent currency devaluations.
- 3.4.34 The allowance for price contingencies is to be calculated on total expenditures per year of implementation. The cumulative rate of price increase for a particular year is calculated by compounding the estimated rate of price rise in prior years and one half of the rate of price increase in the year of procurement⁴. This rate is applied to the base cost estimate for the applicable expenditures. In the following example: (i) procurement is assumed to commence one year after date of Base Cost Estimate, (ii) years two to six are implementation years and (iii) compound interest tables are used to calculate the increase for the years prior to procurement before adding 50 per cent of the escalation factor in the year of expenditure. Where special circumstances support a different rate of price escalation for specific items the price contingency for those item must be calculated separately.

Example: Calculation of Price Contingencies for Project Appraisal and Financial Projections

Year	Base Cost + Physical Contingencies in Project Cost Table	Rate of Inflation from Date of Base Cost Estimate	Calculation	Inflation adjusted Base Cost + Physical Contingencies	Increase due to Inflation
1	0.00	7%	Year for negotiations, Board approval signing, etc	0.00	0.00
2	50	7%	$50 \times (1 + 0.07) \times (1 + 0.035)$	55.37	5.37
3	100	7.5%	$100 \times (1 + 0.07) \times (1 + 0.07) \times (1 + 0.0375)$	118.78	18.78
4	200	8%	$200 \times (1 + 0.07) \times (1 + 0.07) \times (1 + 0.075) \times (1 + 0.04)$	256.00	56.00
5	75	7%	$75 \times (1 + 0.07) \times (1 + 0.07) \times (1 + 0.075) \times (1 + 0.08) \times (1 + 0.035)$	103.18	28.18
Total	425			533.33	108.33

Other Contingencies

- 3.4.35 The standard approach to the costing of a project requires that the cost of land, equipment, goods and services should be based on current prices. In addition, allowances should be made for unforeseen physical conditions that may increase costs and for

⁴ An assumption is made that expenditures in the year of expenditure will be spread evenly over the year therefore an average of one half year's price escalation is applied.

- inflation. But where current prices cannot be determined until the borrower takes certain steps or decisions, or certain events have occurred it may be necessary to include an additional risk contingency. An alternative is to encourage the borrower to insure against risk, possibly by using the Multilateral Investment Guarantee Agency (MIGA).
- 3.4.36 Risk contingencies are infrequently used because, wherever possible, the financial impact of future events should be reflected either in base costs or in physical or price contingencies. Therefore a strong justification is required for risk contingencies as a separate line item in a Project Cost Estimate Table. Such justifications must explain to Bank management that current circumstances pertaining to the base cost estimate of the project make normal estimation techniques unreliable. This draws Bank management's attention to the risk and its potential cost impact on the project. The special contingency provision may not be used for any purpose other than the specific risk(s) identified.
- 3.4.37 When Bank staff consider that certain conditions may be present to a degree which makes the estimation of costs of future events/activities particularly uncertain a special "risk allowance" should be calculated and shown separately from the physical and price contingencies. As an example, because of uncertain political and economic conditions foreign contractors may only offer bids for work in a country at prices that include a premium for the unusual risks they would face. Any part of the "risk allowance" not needed, say after bids are received, should be cancelled and not reallocated to the general contingencies. A "risk allowance" contingency, if applied, should be included as a separate contingency item in the Project Cost Estimate Table and the reasons for it, the amount and its possible cancellation should be explained in the AR and noted in the loan agreement. This contingency should be included in the financial and economic sensitivity analysis. In lieu of including a separate risk allowance, it may be preferable to require the prospective borrower to complete the bidding process to the stage of bid evaluation before the loan is made. In the event that a borrower insures this risk with MIGA, the costs of the premium should be shown as a line item in the Project Cost Estimate Table.

Financial Charges during Construction (FCDC)

- 3.4.38 Financial charges incurred during the construction period are a legitimate implementation cost and should be shown in the Project Cost Estimate Table. FCDC includes commitment fees, interest, and other front-end charges. The method of calculating FCDC should follow that normally applied in computing interest charges for the Income Statements and Cash Flow Statements in the financial analysis of an EA's financial performance. An annex to the AR should summarize the rationale for the inclusion of the FCDC in the project costs, the criteria used and the method of calculation. A clear cut-off point for the cessation of capitalizing finance charges and the commencement of charging financing charges to the Income Statement should be established.
- 3.4.39 Bank loan agreements normally fix the interest rates applicable on loans that may be used to finance FCDC. There is, however, need to provide for contingencies where a project is expected to incur increased costs of funds over and above those covered by the Bank loan agreement. Such anticipated increases in financing costs should be regarded as price contingencies but included in the financing charges and disclosed, with justification, in the AR.

3.5 FINANCING PLAN

Introduction

3.5.1 The purpose of the financing plan is to demonstrate that the funding to support all required aspects of the total estimated cost of the project including contingencies and items ineligible for Bank financing are identified and committed. It is essential that the Bank receive assurances that sources other than the Bank are committed and there will not be any delay in achieving the projects intended economic goals as a result of any unavailable financing for any part of the project cost.

Items Ineligible for Bank Financing

3.5.2 The Bank does not finance the cost of land, rights of way, goods or services procured from countries that are not members of the Bank, FCDC on non-Bank sources of financing and taxes and duties paid by a borrower/EA on either local or foreign costs. The cost of land, rights of way, goods and services from ineligible countries and the amount of FCDC on financing from sources other than the bank are easily identified. In addition, the Borrower is expected to cover local project costs since the Bank normally finances only the foreign exchange component. In special circumstances the Bank may finance a portion of local costs. For ADF-funded projects, the lending policies of the respective ADF replenishment provide a list of conditions which need to be met for projects to qualify for local cost financing. The Country Economist will assist the appraisal team in drafting appropriate justifications to be included in the AR (OM 600)

3.5.3 Calculation of the amount of eligible financing must reflect the requirement that the Bank does not finance taxes and duties that will be incurred for the acquisition of goods and services during project implementation. The financial analyst should advise the borrower and the EA about this limitation on funding, and that the borrower/EA must meet the funding requirement for such obligations. In some cases taxes and duties are clearly stated on invoices in other cases they are not always so clearly identifiable.

3.5.4 Taxes and duties on direct foreign cost are relatively easy to identify on quotations/bids and invoices. However, in some cases taxes and duties are applied at a wholesale level or are otherwise not apparent in the retail invoice. Where heavily taxed commodities are acquired indirectly, such as petroleum products included in manufacturing and various other processes, it may be necessary to determine an appropriate percentage that should be deducted from the total invoice for the cost of goods or services acquired by the borrower/EA. The adjustment for taxes and duties should be reflected in the percentage of goods eligible/ineligible for Bank financing by particular categories of disbursements specified in the legal documents. It should, however, be noted that the Bank does not seek to exclude small amounts of indirect taxation or duties levied at secondary or tertiary stages of the manufacture of goods or provision of services. As an example, taxes on petroleum products used in the manufacture of plastic containers would not be quantified and excluded. However, taxes and duties on petroleum products purchased directly by the EA for use during project construction should be adjusted or deducted from the invoices for petroleum products submitted to the Bank for financing through reimbursement.

3.5.5 In some cases, local taxes on goods and services are very clear, as in the case of Value Added Taxes (VAT). It should be relatively simple to determine this percentage for goods and services. For example, if VAT is levied at 15%, this percentage should be

- excluded from the estimated cost of the goods or services. In other cases, the amount of local taxes imposed on goods and services will vary within components, and when determining the estimated amounts of taxes, the financial analyst should also have regard for the need to provide a practical means of identifying costs eligible for Bank financing. A practical solution to the difficulty and time required to identify varying amounts on a large number of invoices is for the financial analyst to agree with the borrower and the appraisal team the estimated or weighted average amount of tax expressed as a percentage of total cost and included in a local cost component that is otherwise eligible for reimbursement. Similarly, where invoices for goods and services include taxes and duties (including custom duties) that are not well-defined the amount to be financed by the Bank in that category of goods and services should be reduced by a percentage amount estimated to equal the amount of taxes and duties. The costs of excluding taxes and duties should be kept to a minimum. Any formulae that are to be used should be agreed between the EA and the Bank and notified to the external auditor through the auditor's Terms of Reference, in order that the latter may apply suitable tests during audits to verify amounts eligible for Bank financing.
- 3.5.6 In some sectors, the Bank may be invited to finance incremental salaries and wages of the EA or of other involved departments and agencies of government or local organizations. In these cases it is frequently found that these incremental costs include taxes in the form of employer's contributions to national insurance, social security contributions and similar statutory employee benefits. These are not eligible for Bank financing and should be eliminated from calculations of Bank financing of incremental (or any other form) of salaries and wages. In this regard, it is also important for the financial analyst to work with the EA to establish a mechanism for claiming reimbursements from the Bank of expenses net of employer contributions for statutory deductions.
- 3.5.7 These percentage deductions should be reflected in the categories for disbursements in the legal documents once agreement is reached between the Bank and the borrower. This will enable the appropriate percentage adjustments to be made on claims for disbursements by the borrower/EA, where necessary. It is, however, preferable that borrowers/EAs be encouraged to make claims net of taxes, based on the agreed percentages, as this will expedite disbursements by the Bank. It is also necessary for the financial analyst to identify the source of financing within the financing plan that will finance the items ineligible for Bank financing to ensure the project has the required financing to complete the investment and generate the intended economic benefits.

Financing Table

- 3.5.8 The Project Cost Estimates Table identifies the total financing required for a project. The AR requires a discussion of the means of financing this total expenditure. In a non-revenue-earning entity, where there are rarely any internally generated sources of funds, project financing is usually not related to the future financial performance of the entity. In such cases, the illustration and discussion of the financing plan in ARs would be confined to the project only and would normally be an extension of the discussion of the cost estimates. In the case of a revenue-earning project, a summary financing plan should be included after the Project Cost Estimate Table. As required by OM 600, Annex 1, this would indicate the sources of financing (Bank Group, Government, other Co-financiers and Beneficiaries if applicable).

- 3.5.9 The illustration and discussion of the financing plan for a project to be implemented by a revenue-earning enterprise usually consists of a summary - all in current terms - of (i) the project financing requirements and the external sources of finance from the funds flow statement, (ii) other capital and incremental working capital expenditures occurring during the project construction period, (iii) incremental and initial operating costs to be incurred during the implementation period, to be financed out of either project capital funding, or from other sources, (iv) net income from any ongoing operations, and (v) debt service. Funds from all principal sources should be identified as line items in the financing plan. Funds sources should be set out in terms of foreign and local currencies, using Bank Lending Currencies as the foreign currency, and grouped in the table under local and foreign sources, including Bank loans, ADF, and TA, funds from other foreign lenders and donors; local loans, local equity including grants and subsidies from government, and internally generated funds
- 3.5.10 In cases where the EA is conducting ongoing operations, as in the case of a public sector enterprises, it may, or may not, be generating sufficient funds from ongoing operations to support these activities. It is, therefore, advisable to include in the financing plan either the net funding through the period of the financing plan that the agency will generate, or the additional funding needs which it will require, to operate and maintain its existing and new facilities. The sources of additional funding should be identified, for example, subsidies from government, etc. The financing plan should contain an explicit reference to any contributions to investment to be made by the agency during implementation, with specific reference to the acceptability to the Bank of a policy of deficit funding by government, particularly any policy which, in effect, contributes to the capital investment of the EA.
- 3.5.11 An annex to the AR should cover the following items, with detailed explanations where necessary (i) any cofinancing arrangements, (ii) availability of internal funds, referenced as necessary to the cash flow statements, (iii) the self-financing ratio, (iv) equity contributions, (v) terms of loans, including interest rates (or on-lending rates where applicable), grace periods, repayment periods, incidence of foreign exchange risk, guarantee fees and interest during construction, and (vi) the dependability of a financing plan in terms of firm commitments that have been received, the progress of negotiations where loans or equity contributions have not been finalized, the availability of additional sources of funds in the event of cost overruns or lower than expected generation of internal funds, and a sensitivity analysis relating to the latter items.
- 3.5.12 The summary Financing Plan should be included in the AR and the detailed one in an annex to the AR. For a non-revenue-earning project, the project cost table (in summary or in detail) can be readily converted to a financing plan by adding after the "Project Cost" line item the sources of funds that have been identified as available to meet the cost. An exception for a non-revenue-earning project can occur when the project is directly concerned with operation after completion of implementation. In this case, the operating costs would be displayed for the first two/three years, with the related sources of funding (usually budgetary provisions with perhaps minor direct receipts).
- 3.5.13 The following is an example of a typical summary Financing Plan for a revenue-earning project. A detailed Financing Plan is included in the Knowledge Management, section 7.18 of these Guidelines.

FINANCING PLAN
(xx through xx)

COUNTRY: XXX

PROJECT: Project Name

In (thousands)/(millions) of UA/Bank Lending Currency

	Local		Foreign		Total	
	Currency	%	Exchange	%		%
FUNDS REQUIRED						
Proposed Project						
Capital expenditures	0.00	0	0.00	0	0.00	0
Operating expenditures	0.00	0	0.00	0	0.00	0
Interest during construction	0.00	0	0.00	0	0.00	0
Other financing charges	0.00	0	0.00	0	0.00	0
TOTAL PROJECT REQUIREMENTS	0.00	100%	0.00	100%	0.00	100%
SOURCES OF FUNDS						
Proposed Bank loan	0.00	0	0.00	0	0.00	0
Other loans	0.00	0	0.00	0	0.00	0
Equity or capital contributions	0.00	0	0.00	0	0.00	0
Government	0.00	0	0.00	0	0.00	0
Other sources	0.00	0	0.00	0	0.00	0
Subsidies for operations	0.00	0	0.00	0	0.00	0
Internal cash generation (if any)	0.00	0	0.00	0	0.00	0
TOTAL SOURCES	0.00	100%	0.00	100%	0.00	100%

3.6 PROJECT FINANCIAL VIABILITY

Introduction

3.6.1 The Bank requires that financial analysis and economic analyses are undertaken for projects (OM 600). Although both types of analysis have the same objective – to assess whether the proposed investment is viable - the concept of financial viability differs from that of economic viability. While financial analysis examines the adequacy of the returns of a project to the EA, and other project participants, economic analysis of a project measures its effects on the national economy. Financial analysis and economic analysis are complementary. If a project is not financially sustainable, economic benefits will not be realized.

Non-revenue Earning Projects

- 3.6.2 Non-revenue earning projects are not subjected to a financial viability test because by definition they do not have a positive cash flow stream. It is difficult to quantify monetary benefits of projects in sectors like health, education, water supply and sanitation, etc. To this regards two evaluation approaches are popular, namely, cost-effectiveness analysis and cost-utility analysis. Where attaching monetary values to any outcome is untenable a cost-minimization approach is commonly used, whereby the option with the least cost is selected, given the identical outcome of all alternative options. This is the cost-effectiveness analysis. The cost-utility analysis also measures costs per unit of an outcome, but the outcome effectiveness is further measured in terms of the quality of the benefits and therefore the outcome effectiveness reflects both quantity and quality.
- 3.6.3 For both approaches, relevant costs should include both direct and indirect costs. Direct costs include capital and operating costs. Indirect costs refer to those costs that are incurred as a result of participating in the event, for example, home care costs that are associated with a particular treatment. Indirect costs may be more difficult to obtain. Moreover, all costs or expenditures should be measured in economic prices of goods and services to reflect their resource costs from the economy as presented in the cost benefit analysis. When a series of expenditures are spread over a number of years, the present value of the expenditures should be discounted by the economic opportunity cost of capital. Consequently, the appraisal techniques for non-revenue earning projects are underpinned on the basis of economic viability, which is covered in the *Guidelines for Economic Analysis and Design of Bank Group Projects* and, not in these Guidelines.

Revenue Earning Projects

- 3.6.4 The financial viability of revenue earning projects is determined on the basis of the project itself, not on the basis of the operations of the entity that owns or operates the project. The principal comparison is between the Financial Internal Rate of Return (FIRR) which represents the rate of return earned on the project and the Weighted Average Cost of Capital (WACC) for the project. If the rate of return exceeds the cost of capital to finance the project it meets the test of financial viability. Both comparators are measured in real terms to remove the effect of price changes on the comparison. Care needs to be taken to identify whether all cash receipts and payments have been identified and that all cash transactions are based on arms length prices in real terms. If the project is determined to be viable the FIRR is tested for sensitivity to the reliability of the assumptions and/or possible errors in estimating the FIRR. A clear statement of all the assumptions used should support the calculations of FIRR and WACC.

Project Incremental Cash Flows

- 3.6.5 A project's annual net cash flow should be forecast over the life of the project. Annual net cash flow is the difference between annual cash receipts and annual cash payments. In cases where the project represents incremental development – for instance, the extension of an existing power plant – cash flows should be computed on an incremental basis (e.g. “with project scenario” and “without project scenario”). Annual cash receipts should include all service fees or sales revenue plus any subsidy received from the government to support the project and the estimated salvage or market value of project assets at the end of the project's physical life. Annual cash payments should include all payments

- incurred to construct operate and maintain the project's facilities over its useful life. All taxes such as customs and excise duties, value added taxes, similar levies and income taxes should be included. The estimated income taxes on earnings should be based on operating income (before financial expenses but after depreciation) generated from the project and at the effective tax rate.
- 3.6.6 Cash payments for construction costs used in the FIRR should be reconcilable with the project cost estimates that is with the base cost and physical contingencies, but excluding price contingencies and FCDC. Price contingencies are excluded because the FIRR is calculated in real terms (i.e., without the effects of price escalation and/or foreign currency rate fluctuations). Exchange rates for converting currencies must be fixed at a particular date and consistently applied throughout the forecast period. FCDC is excluded to segregate the investment decision from the financing decision and because it is represented in the WACC.
- 3.6.7 Because project cost streams are calculated in real terms, the relevance of contingencies to the project's financial viability depends upon whether or not the contingencies reflect the use of additional real resources. Physical contingencies represent the estimated cost of the expected additional real resources required and, therefore, should be included in this analysis for all projects. Price contingencies should be excluded from a financial benefit-cost analysis. Risk contingencies should be included where they represent the likely cost of a physical risk, but excluded where they relate to a cover for the risk of changes in prices. It should be noted, however, that since risk contingencies that relate to pricing of goods and services are often withdrawn following receipt of bids the results of these bids may require revisiting the financial benefit-cost analysis.
- 3.6.8 A typical enterprise-wide forecasting period for financial statement presentations will not exceed five years beyond the completion of project construction, even though normal operating levels may not have been reached by that time. This will not provide enough information to determine financial viability of the project investment over its full lifetime. This shortcoming may be overcome by preparing an income statement forecast for the project, in isolation, up to the achievement of capacity operational levels and assuming that the net cash flow is held constant thereafter. If the project is one of several projects being executed by an EA separate projections must be prepared.

3.6.9 In the following example of a net cash flow calculation, years 2009-20012 are not shown.

NET CASH FLOWS, 2004 (US \$'000)

	2004	2005	2006	2007	2008	2013-2034
Operating Cash Flows						
<u>Receipts</u>						
Water sales:						
Domestic consumers	0	668	1,613	2,922	4,740	14,077
Government establishments	0	21	50	80	124	726
Private establishments	0	32	76	117	170	997
Subtotal	0	722	1,739	3,119	5,034	15,800
Connection fees	0	2,552	3,067	3,689	4,436	0
Total operating receipts	0	3,273	4,806	6,807	9,470	15,800
<u>Payments:</u>						
Operation and maintenance	0	(410)	(918)	(1,534)	(2,303)	(4,281)
Sales taxes	0	(84)	(109)	(142)	(183)	(139)
Business tax	0	(100)	(100)	(100)	(100)	(100)
Connection payments	0	(2,424)	(2,914)	(3,504)	(4,214)	0
Total operating payments	0	(3,018)	(4,041)	(5,280)	(6,800)	(4,520)
Net Cash Flows from Operations	0	255	765	1,527	2,670	11,280
Investing Cash Flows:						
Investments	(7,184)	(43,107)	(64,660)	(28,738)	0	0
Net Cash Flows to Investments	(7,184)	(43,107)	(64,660)	(28,738)	0	0
Net Cash Flows	(7,184)	(42,852)	(63,895)	(27,211)	2,670	11,280

Financial Opportunity Cost of Capital (FOCC)

3.6.10 If the net cash flow from operations during the lifetime of the project is discounted at the Financial Opportunity Cost of Capital (FOCC) the result will show the maximum capital that may be invested for the project to be the most attractive alternative available to the borrower. Determination of the FOCC is problematic because it necessitates a ranking of the alternative investment opportunities available to the borrower to determine the most financially attractive alternative opportunity forgone to make the project investment. Since the Bank's process of selecting projects for Bank financing is based on a vigorous screening of projects to be included in the Bank's three year rolling lending program the financial analyst can rely on that process to ensure that the project meets the requirement of being a priority investment needed to achieve the government's national development goals.

Financial Internal Rate of Return

3.6.11 The rate of return of a project to the entity is indicated by the project's FIRR. Therefore, the FIRR is also the discount rate at which the net present value (NPV) of the net cash flows becomes zero. The following table provides an example of an FIRR calculation. The table presents project receipts, payments, and net cash flows for the full project period of 30 years. For the purpose of the illustration, it is assumed, that receipts and payments will remain constant from year 2013 onwards.

FIRR ESTIMATION AT 2004 PRICES (US \$'000)

Year	Payments	Receipts	Net Cash Flows	Year	Payments	Receipts	Net Cash Flows
2004	7,184	0	(7,184)	2,020	4,520	15,800	11,280
2005	46,125	3,273	(42,852)	2,021	4,520	15,800	11,280
2006	68,702	4,807	(63,895)	2,022	4,520	15,800	11,280
2007	34,018	6,807	(27,211)	2,023	4,520	15,800	11,280
2008	6,800	9,470	2,670	2,024	4,520	15,800	11,280
2009	2,810	6,306	3,496	2,025	4,520	15,800	11,280
2010	3,193	7,795	4,602	2,026	4,520	15,800	11,280
2011	3,604	9,535	5,931	2,027	4,520	15,800	11,280
2012	4,045	11,568	7,523	2,028	4,520	15,800	11,280
2013	4,520	15,800	11,280	2,029	4,520	15,800	11,280
2014	4,520	15,800	11,280	2,030	4,520	15,800	11,280
2015	4,520	15,800	11,280	2,031	4,520	15,800	11,280
2016	4,520	15,800	11,280	2,032	4,520	15,800	11,280
2017	4,520	15,800	11,280	2,033	4,520	15,800	11,280
2018	4,520	15,800	11,280	2,034	4,520	15,800	11,280
2019	4,520	15,800	11,280				
					FNPV	@4.33%	0

Weighted Average Cost of Capital (WACC)

3.6.12 The WACC represents the cost incurred by the entity to raise the capital necessary to implement the project. As most projects raise capital from several sources and each of these sources may seek a different return it is necessary to use a weighted average of the different returns paid to these sources. The AR should include a calculation of the project's WACC expressed in real terms. Both FIRR and WACC should be measured on an after-income tax bases.

3.6.13 The following is an illustration of the approach that should be taken to calculate the WACC:

Step 1: **Categorize** financing components as shown in the table below. These components should be taken from the Project Financing Plan as the WACC is calculated only for the project and not for the organization as a whole.

Step 2: **Estimate the Cost of Funds.** Ascertain the actual lending (or on-lending) rates, even where these may not be the current market rates, together with the cost of equity contributed as a result of the project. Note (i) loans from government may or may not specify a rate of interest (ii) government budgetary allocation of funds is not costless – they might be applied to purposes other than the project, such as debt repayment or to alternative investments. For simplicity, the average cost of government funds can be calculated by dividing total government financing costs by total public debt, (iii) in estimating the cost of equity capital, the degree of business (industry) and financial (bankruptcy) risks should be considered and an appropriate risk premium over market borrowing rate should be added. In most

cases, only a small amount, if any, of project financing will be provided by the organization. As such, the estimate of the cost of equity capital is unlikely to unduly affect the WACC. However, the means by which the estimate is developed should be documented.

- Step 3: **Adjust for Corporate Tax.** Ascertain whether or not the interest payments relating to each component are deductible for corporate tax purposes and, if so, the level of the applicable tax rate. Adjust each component as appropriate.
- Step 4: **Adjust for Domestic Inflation.** The estimated costs of borrowing and equity capital should be adjusted for inflation to obtain the WACC in real terms. Note: (i) For foreign-sourced loans, the Bank requires that a premium for foreign exchange risk is included in the WACC. On the other hand, foreign-sourced funds are required to be adjusted for foreign inflation. To simplify the WACC calculation, it should be assumed that the foreign exchange risk premium exactly offsets the prevailing foreign inflation rate. As such, neither of these factors needs to be estimated and applied. (ii) The Bank's projected domestic inflation rate should be used for domestically-sourced loans and equity.
- Step 5: **Apply the minimum Rate of Test.** The real cost of capital for each component should be at least 4 percent. If not, replace the derived value with 4 percent.
- Step 6: **Determine the WACC.** Apply the weighting percentage to each component to derive the WACC.

Methodology for Calculating Weighted Average Cost of Capital (WACC)

	Financing Component					
	AfDB Loan	Foreign Loans	Domestic Loans	Government Funds	Equity Participation	Total
A. Amount (US \$'000)	50,000	5,000	5,000	30,000	10,000	100,000
B. Weighting	50.00%	5.00%	5.00%	30.00%	10.00%	100%
C. Nominal cost	6.70%	6.70%	12.00%	7.00%	10.00%	
D. Tax rate	40.00%	40.00%	40.00%	0.00%	0.00%	
E. Tax-adjusted nominal cost [Cx(1-D)]	4.02%	4.02%	7.20%	7.00%	10.00%	
F. Inflation rate	4.00%	4.00%	4.00%	
G. Real cost [(1+E)/(1+F)-1]	4.02%	4.02%	3.08%	2.88%	5.77%	
H. Minimum rate test [H=4%]	4.02%	4.02%	4.00%	4.00%	5.77%	
I. Weighted component of WACC	2.01%	0.20%	0.20%	1.20%	0.58%	4.19%
Weighted Average Cost of Capital (Real):			4.19%			

3.6.14 In this example: (i) the sources of capital for the project are the Bank, 50%; other foreign bank loans 5%; local banks loans 5%; government grant 30%; and the project EA's own equity capital 10%. Differing nominal returns on each source of capital are assumed,

including the expected return of 10 percent on equity to project shareholders; (ii) interest payments on Bank loan, on other foreign bank loans and on the local bank loans are deductible from pre-tax income. The after tax cost of capital to the project is, therefore, 60 percent. Dividends paid to shareholders (if any) are not subject to corporate tax (although they might be subject to personal income tax, which does not impose a cost to the entity); and (iii) the WACC in real terms amounts to 4.19%. This is the discount rate to be used in the financial cost-benefit analysis of this project as a proxy for the FOCC.

Comparison of FIRR and WACC

3.6.15 If the Project's FIRR exceeds the Project's WACC, the project is considered to be financially viable. If the FIRR were below the WACC, the project would only be financially viable if it increases its net cash flow by increased revenue or reduced costs or receives a sufficient subsidy from the government to bring the FIRR up enough to exceed the WACC. If the project is restricted in its ability to raise revenue, for poverty reduction or other social reasons etc, it is already receiving a subsidy and the FIRR does not exceed the WACC then it either has to cut its costs or the subsidy needs to be increased sufficiently to result in the FIRR exceeding the WACC. In the example, the FIRR of 4.33 percent is above the WACC of 4.19 percent, and hence the project is financially viable. The AR should describe how the project's FIRR compares with its WACC. The supporting analyses should be included in the annexes to the AR

Alternative Test of Project Viability

3.6.16 An alternative test of financial viability is to determine whether the Net Present Value (NPV) of the projects lifetime net cash flow stream discounted using the WACC is positive. Technically if the NPV in this case is positive then the FIRR exceeds the WACC. A negative NPV points to a project that does not generate sufficient returns to recover its costs and as above it needs to increase its revenue, cut its costs or it requires a subsidy from the government

3.6.17 In the above example the net cash flow discounted at the WACC of 4.19 percent is +\$2,560,000. The project is thus financially profitable. If a discount rate of 4.33 percent is used (equal to the FIRR), the NPV (by definition) equals zero. The example shows that if the discount rate used (4.19 percent) is below the FIRR (4.33 percent), the NPV is positive.

Sensitivity Analysis

3.6.18 Financial cost-benefit analysis is based on forecasts of quantifiable variables such as demand, revenue and costs. The values of these variables are estimated based on the most probable forecasts, which cover a long period of time. The values of these variables for the most probable outcome scenario may be influenced by many factors and the actual values may differ considerably from the forecast values depending on future events. It is therefore necessary to consider the sensitivity of project viability to potential changes in key variables

3.6.19 The viability of projects is evaluated based on a comparison of its FIRR to the WACC. Alternatively, the project is considered to be viable when the NPV is positive, using the WACC as the discount rate. The WACC is usually considered to be constant because loan funds and government capital contributions are fixed and made at the beginning of

the cash flow stream. However some funding may result from variable rate instruments in which case it would be appropriate to test project viability for its sensitivity to changes in interest rates. In the example below WACC is assumed to be constant. Sensitivity analyses, will therefore focus on analysing the effects of changes in key variables on the project's FIRR or NPV, the two most widely used measures of project viability.

3.6.20 Sensitivity analysis tests the impact of changes in project variables on the base-case (most probable outcome scenario). Typically, only adverse changes are considered in sensitivity analysis. The purpose of sensitivity analysis is to: (i) to identify the key variables that influence the project cost and benefit streams; (ii) investigate the consequences of possible adverse changes in these key variables; (iii) assess whether project decisions are likely to be affected by such changes; and (iv) identify actions that could mitigate possible adverse effects on the project. Sensitivity analysis needs to be carried out in a systematic manner. To meet the above purposes, the following four steps are suggested.

Step 1: **Identify** key variables to which the project viability may be sensitive.

Step 2: **Calculate** the effect of possible changes in these variables on the base-case FIRR or NPV, and calculate a sensitivity indicator and/or switching value.

Step 3: **Consider** possible combinations of variables that may change simultaneously in an adverse direction.

Step 4: **Analyse** the direction and scale of likely changes for the key variables identified, involving identification of the sources of change.

3.6.21 The Knowledge Management, section 7.19 of these Guidelines provides further information on each of these steps in the context of a numerical example. The information generated can be presented in a tabular form with an accompanying commentary and set of recommendations, such as the example shown below.

Simple Sensitivity Analysis: Numerical Presentation

Item	Change	NPV	FIRR %	SI (NPV)	SV (NPV)
Base Case		126	13.7		
Investment	+10%	70	9.6	13.3	7.5%
Benefits	-10%	57	7.8	16.6	6.0%
Operating and maintenance costs	+10%	68	12.9	2.3	43.4%
Currency rate movements	-20%	70	9.6	13.3	7.5%
Construction delays	One year	79	10.8		NPV 37% lower

SI = Sensitivity Indicator; SV = Switching Value

3.6.22 Sensitivity tests are not without problems. Correlations among the variables often pose serious difficulties. The usual technique of varying one variable at a time, keeping the others constant at their expected values, is justified only if the variables concerned are not significantly correlated, otherwise, the related variables must be varied jointly. In such cases the sensitivity of the outcome to changes in several combinations of variables that

are expected to vary together must be explored, for example revenues rather than price and quantity separately. But it should be noted that the greater the degree of aggregation, the less useful is the information provided by the tests.

Policy Issues

- 3.6.23 Financial management related policy issues raised elsewhere in these Guidelines for which “high-value policy harmonization and alignment” would be appropriate include the issue of deficit financing or contributions to the capital of the EA as part of the project financing plan and the issue of the government providing annual operating subsidies. These are the types of issues that have a direct implication on project financial viability and are envisioned in the Paris Declaration for discussion and agreement with all donors active in the country and specifically with donors in the sector concerned. This is because a policy to subsidize either the capital cost or the operations of the EA represents a policy that applies to all development investments in the country. The Paris Declaration envisages a coordinated discussion with the government regarding the strategy to subsidize (i) as to whether the policy is appropriate in general, and if so (ii) should it be applied selectively to specific sectors, and do the policy and the selected sectors relate to the government’s poverty reduction strategy. Affordability of subsidies to the government and the willingness and appropriateness of donor funding of the subsidies through development assistance is an issue upon which harmonization among donors is needed. The two examples discussed are commonly seen in development projects, particularly infrastructure and other revenue generating projects. They should not be seen as exclusive of the types of policy oriented financial management issues that may be encountered. Financial Analysts need to focus their attention on the financial management policy issues evident in all development projects.
- 3.6.24 The Financial Analyst’s analysis may identify a need for technical assistance to analyse the targeting of subsidies and/or assist in implementing a subsidy targeting program for the EA. The financial analyst, also, should identify financial management issues and determine whether the EA’s treatment of the identified issue is consistent with the National Development Strategy, the National Poverty Reduction Strategy and with any Sector Specific Strategy Papers. A related issue is the effectiveness of the subsidy policy which may be reflected in the targeting of the subsidy. Using the example of the subsidy for capital costs of the project or for operational subsidies the financial analyst should determine (i) whether the capital cost subsidy is intended to support the extension of services into physical areas known to be inhabited by low income residents (ii) whether the quantity and quality of delivery of those services reflects the needs of the residents, and (iii) whether it is cost effective, for example using stand posts to deliver potable water to densely populated areas. Financial Analysts should review subsidies for operations to determine whether they (i) offset the provision of lifeline support levels or minimum levels of energy or potable water through minimal or nil tariff for these levels of service (usually seen in step tariff systems), (ii) offset high levels of non-revenue water or energy particularly if bulk meters can identify the high losses to areas inhabited by low income residents, (iii) pay overdue and unpaid invoices for poor families, and (iv) how the EA attempts to measure the use of the subsidy or to ensure the targeting intended in the subsidy is in fact being achieved. Broad general subsidies usually benefit the largest users of the EA’s services the most and the large users are generally not the poor.
- 3.6.25 The Bank has a broad interpretation of financial viability in relation to project loans. This includes the use of government subsidies to ensure the financial viability of the EA. The

Financial Analyst's review of the financial viability of the project and any policy issues such as subsidies and their targeting should lead to appropriate financial covenants that compliment the government's poverty reduction strategy. Assurances need to be given that any subsidy needed to ensure the financial viability of the project and the EA is paid in a timely manner.

3.7 ECONOMIC AND FINANCIAL OBJECTIVES

Introduction

- 3.7.1 Economic and financial analyses of projects are closely related, and in practice both involve, among others things, the calculation of internal rates of return. Both types of analysis are conducted in monetary terms the major differences lie in the definition of costs and benefits. It is very important that both economic and financial analyses are undertaken. It is equally important that the financial analyst understands the reasons for divergences between economic and financial analysis results.
- 3.7.2 The objective of economic analysis is to evaluate a project on the basis of all its impacts upon the economy⁵. For example an addition to port facilities may permit significant increases in the export of commodities, agricultural products and manufactured goods which will encourage increased production in these sectors as well as other sectors of the economy, the creation of many new jobs in those sectors and related sectors such as land transport. All these economic benefits would be measured in the economic analysis of the project. The objective of financial analysis is to evaluate the commercial viability of a project from the viewpoint of the project entity; that is, only expenditures incurred under the project and revenues resulting from it are taken into account. In the case of the port project the only financial benefits measured would be the marginal increase in port fees resulting from the new facilities.

Economic Objectives

- 3.7.3 The efficient allocation of resources is a primary goal of economic planning. Economic policy decisions are made to implement economic plans. These policy decisions may result in direct financial impact on national residents such as pricing policies for the supply of goods or services by State Owned Enterprises (SOEs) or may have indirect impact such as tariffs on imports or land use decisions. In other cases, the policy decision may be that some goods or services provided by a SOE should be provided at no cost to the user. The Bank refers to a project in this situation as a non-revenue project. There is both an economic cost and a financial cost to providing the goods or services "free".
- 3.7.4 Economic theory suggests that efficient allocation of resources is achieved when the benefit or price of the goods or services equals the marginal cost of supplying them, that is, the increment to the total system cost of producing and delivering an additional unit of output under specified circumstances. Economic theory also suggests that important divergences between social costs and benefits on the one hand, and market price on the other (due, for example, to external factors) should be taken into account, and that public investments should be evaluated in terms of opportunities for investment or consumption

⁵ Further guidance on Bank practice regarding the economic analysis is found in the 'Guidelines for Economic Analysis and Design of Bank Group Projects' that are found at: <http://intranet/GPA/index.htm>

- foregone elsewhere in the economy. An example of this situation might be a vaccination program where charging consumers for the cost of the vaccine might discourage people from being vaccinated, particularly poor people who may be at the greatest risk due to their living conditions, while the economic cost of lost productivity from a disease outbreak might be very high. This is the basis of justification for many non-revenue projects, but it does not mean that financial analysis has no role in the assessment of the project.
- 3.7.5 The unit of government that will provide the goods or services “free” will incur financial costs, which need to be identified by the financial analyst. This brings into consideration the information accumulated through the review of budgeting and financial management systems of government. The financial analyst needs to identify all project costs. The financial analyst will need to work with the EA to identify the year in which expenditures will be incurred and determine that adequate additional budget will be provided, by the government, each year. This may be an issue for covenant consideration.
- 3.7.6 The balancing of added benefits with added costs may also be achieved by establishing prices equal to the marginal costs of supply and relying on consumers to equalize benefits and costs at the margin. In other words, the cost-benefit analysis is decentralized and each consumer is left to decide what quantity they would like to consume and when. Some outputs of a revenue-earning EA are valued highly by a majority of consumers and exceed the cost of supplying it. Other uses are less valuable, and the quantity consumed for these uses will depend on the price charged by the revenue-earning EA. For an efficient allocation of scarce resources, consumption should be facilitated when its valuation by consumers exceeds the added cost of supply, and discouraged whenever this is not the case. An example of this type of project might be the supply of potable water in which all consumers highly value a minimum lifeline quantity of potable water. Poor people may be willing to sacrifice large portions of their available resources through labour to carry water long distances or dig wells, etc or pay cash, if available, to meet basic human needs and to avoid lost productivity and other costs of water borne disease. Wealthier people may not value large quantities of consumption as highly and may respond by conserving the use of potable water for lawns and swimming pools if high consumption is charged at tariffs much higher than the financial cost of supply. This is the basis of step tariffs for potable water supply (usually involving lifeline supplies at no tariff with steeply rising tariffs for larger blocks of consumption) and is also an example of an income/resource transfer between high consumption users and low consumption users.
- 3.7.7 The efficient allocation of resources is an important economic consideration in pricing policies, particularly for revenue-earning EA services. Financial analysis is used to describe, project and monitor the impact of such a policy.

Financial Objectives

- 3.7.8 The primary objective of financial analysis is to forecast and/or determine the actual financial impact, status and performance of a project and, where appropriate, of the EAs. This enables the Bank to combine that information with all other pertinent data (technical, economic, social, etc.) in order to assess the feasibility, viability, and potential economic benefits, of a proposed or continuing lending operation. A secondary objective is the provision of technical assistance to a borrower and/or an EA to enable them to make similar assessments and to apply the techniques to other non-Bank investments. A

tertiary objective is to encourage borrowers and/or EAs to make any necessary changes to their institutional and financial management systems to facilitate the generation of appropriate data to support good financial analysis. These objectives are intended to measure the achievement of financial objectives of the borrower, the EA, and the project and vary by the nature of the project/EA in terms of revenue-earning and non-revenue-earning categorization.

Revenue-earning Projects

- 3.7.9 There is a presumption that if a government establishes a revenue-earning EA that all the goods and services that it supplies to the public will be for a price or a fee, otherwise the government would provide those goods or services through a department of government. The determination of the price of the goods or services provided is a policy decision and need not necessarily mean that the entity is designed to earn a profit, at least not necessarily at all times or for all goods or services. For public sector entities, there is no absolute rule as to a sector/sub-sector where less-than-full-cost recovery may be acceptable. The Bank has no policy or guidelines on subsidies.
- 3.7.10 In addition, there is a presumption that public sector revenue-earning EAs will cover at least a majority of their cost of providing the goods or services from sales or fee revenue. Agencies of government that charge a small or nominal fee for services are not usually considered revenue-earning EAs. Examples include fees charged for obtaining copies of government documents (birth or marriage certificates, driver's licences, etc.) or fees to enter government buildings/facilities such as museums or parks which are attempts at limited cost recovery but these entities are not usually regarded as revenue-earning entities. The size of the individual or unit charge for goods or services is not the guiding principle because in some jurisdictions the post office is considered a revenue-earning entity because of the significance of the total revenue received. The deciding factor is whether the government's policy intention for the entity is that it should be a revenue-earning entity.
- 3.7.11 One of the initial tasks of the financial analyst is to determine and document the government's policy goals for any proposed EA. Successful financial management of an EA should be determined on the basis of its ability to achieve the policy goals established for it rather than on any preconceived idea of what an entity in a particular economic sector is capable of earning. The Bank may agree with the policy goals established for the EA or the Bank may not agree with them. If the Bank disagrees with the policy goals established for the EA by the government the mission will be charged by Bank management with the responsibility of undertaking policy dialogue with the government as part of project processing. Similarly, the Bank may agree with or accept pricing policies for a revenue-earning EA in one country but not accept them for a similar revenue-earning EA in another country, for example subsidized pricing of a consumable product (for example rice) in a low income country may be accepted but similar pricing policies in a middle income country may be considered inappropriate.
- 3.7.12 Generally speaking, a revenue-earning project should enable an EA to achieve financial viability. Financial viability generally implies an ability to generate sufficient revenues to cover operating and maintenance costs, renew assets, service debt, pay dividends on equity capital, where appropriate, and finance a reasonable proportion of the EA's capital expenditures from internally generated funds. This definition would enable the EA to firstly, become self-sustaining and to achieve a degree of autonomy in its day-to-day

operations which encourages better management, and secondly to relieve the government from the financial burden of subsidizing from scarce public funds the provision of the goods or services supplied by the EA. The pursuit of certain financial goals by a revenue-earning EA can be seen as a means of stimulating managerial efficiency. Also, if financial viability were to be ignored, the incentive to hold down costs may be weakened, if not removed.

- 3.7.13 Revenue-earning EAs are sometimes required to generate additional revenue in order to supplement national resources for investment. Experience in some RMCs, however, suggests that the continuing financial losses made by many revenue-earning EAs may not make them satisfactory tools for resource mobilization, unless government is willing to enforce the use of effective tariff and revenue collection. Tariffs should permit a level of financial performance that would enable a revenue-earning EA to operate efficiently and on a continuous basis, provided that the collection of revenues continues to be efficient.

Non-Revenue-Earning Projects

- 3.7.14 A principal objective of a non-revenue-earning project is the achievement of the financial and economic goals set for it by government. This usually involves three broad goals. One is to enable the project to deliver the forecast benefits at the least cost as estimated at the time of the financial and economic evaluation. A second goal is to achieve a degree of efficiency in the EA's operations to encourage better management of the development and operation of the project. A third goal is to minimize the government's financial cost to reduce as much as possible the financial burden associated with the continuous provision of scarce public funds. As with revenue-earning projects, financial analysis is a key tool in defining and measuring the achievement of financial goals and objectives.
- 3.7.15 Again one of the initial tasks for the financial analyst is to determine and document the financial goals of the EA. The financial analyst needs to determine what financial records are maintained by the EA that will facilitate or demonstrate the achievement of the defined goals. In many non-revenue-earning projects it is necessary to identify non financial data to support a determination of the effective achievement of the project's goals. An example may be the number of individuals inoculated in a vaccination campaign. A measure of efficiency in this case may be the average cost per individual of providing the service.

Tariffs and Cost Recovery

Preamble

- 3.7.16 Policies affecting tariff and cost recovery result from economic plans approved by government. Long-run marginal cost may be used to set tariff when there is recognition that the cost of adding an additional unit of output to the system is high. Pricing at long-run marginal cost will send a signal to consumers about the expected rise in the cost of production and will encourage conservation. Those who continue to consume large amounts of output at these higher prices are indicating that the marginal benefits continue to exceed the tariff. By definition, long-run marginal cost must exceed the cost of the current project and therefore using this pricing model may be problematic for pricing public goods. It has been used for pricing more commercial products such as power where the cost of adding output capacity is high and long lead times are needed for construction. A more practical approach may be to increase tariff over time toward long-

run marginal cost as existing capacity is becoming fully utilized. This will both signal the market of the higher costs of expansion and build up funds to contribute to the cost of building the next capacity. Another concern with long-run marginal cost pricing is that if the resulting tariff is considered too high by consumers they may build their own independent systems, e.g. drill water supply wells on their property or install power generators.

- 3.7.17 The Bank has no policy or guidelines on subsidies and no absolute rule as to sectors or sub-sectors where less-than-full-cost recovery may be acceptable. The Bank has, however, an implicit goal of achieving efficiency. The financial analyst must ensure that cost recovery is the lowest economic and financial cost commensurate with the highest levels of efficiency of performance. Endorsing cost recovery policies that require the EA to recover all costs incurred for the project may result in unnecessary or unreasonable charges, especially if the EA is in a monopoly position. There must be an assurance that all costs incurred result from efficient operations and that recovery of unreasonable costs must be avoided.
- 3.7.18 These issues typically give rise to valid concerns where the technical problems and costs of installing and operating charging mechanisms could exceed benefits. OECD has a useful publication on Best Practice Guidelines for User Charging for Government Services (Knowledge Management, section 7.23).

Bank Policy on Tariffs

- 3.7.19 In 1985, the Bank published its policy on tariffs and cost recovery. While many years have passed since its publication, much of the advice and guidance relating to tariffs and cost recovery continues to be relevant. The emphasis is primarily on the sufficiency of revenues to finance operations and debt service, and perhaps there may be insufficient reference to the need to develop means of cost reduction to avoid increasing tariffs and rates. In addition, the Bank relies on the skill and experience of the Bank staff and experienced consultants to develop appropriate tariffs for revenue-earning EAs, and to report their findings and recommendations in ARs.

Cost Recovery Systems

- 3.7.20 Generally there are two options available for full-cost recovery, namely the pricing by user charges of products and services produced (typically using tariff-structured charges), and benefit taxes that are levied directly (wherever possible), or indirectly, on beneficiaries. Vehicle or gasoline tax, and land taxes, are typical benefit taxes.
- 3.7.21 The selection and use of the appropriate mechanisms should be a matter of practical convenience, e.g. using a system that is already in place and which either works or can be made to work with minimum investment; rather than enforcing a principle. In water supply utilities, it is frequently a principle that domestic water consumers should pay for water by measured consumption. However, where by local practice a property-value based water tax can yield the necessary revenues; this may be an acceptable mechanism. A property tax based water charge will not inhibit consumption. Therefore in conditions of constrained supply and high long-run marginal cost, the recovery mechanism adopted should contribute materially to the attainment of conservation objectives; in this case by charging on a consumption basis and restraining consumption future investments may be deferred. This particular approach requires that (i) metering systems are efficient; (ii)

- illegal connections are prevented; and (iii) the tariff structure effectively constrains high consumption levels by incremental pricing.
- 3.7.22 Where an activity, such as sewerage operations, has difficulty in achieving full-cost recovery, it should be linked whenever possible with an allied activity or service. In the case of sewerage, its principal activity is wastewater removal, which can be directly related to water consumption. An integrated tariff policy to recover water supply and sewerage costs should be developed which would achieve full cost recovery for both systems. Similar activities include rural electrification for irrigation systems which can be recovered through the overall tariff structure by cross subsidies; rural roads which can be recovered through adjustments to vehicle import or operating taxes.
- 3.7.23 In some cases pricing below full cost recovery can have undesirable effects. Pricing fertilizer below cost in some countries has resulted in excessive use of fertilizer which has polluted water supply sources. This has been problematic in that it adds additional costs to water treatment to remove the chemicals which may be harmful to humans or livestock and because rural water supply systems had been built with minimal treatment systems because they generally were away from industrial pollution and costs were kept within the means of the rural consumers.
- 3.7.24 Public utilities sometimes favour providing services to the more affluent sections of a population, partly on the grounds that cost recovery is likely to be more effective, and that delivery to, and servicing of these domestic consumers is generally more simple and cost-effective. However, research into these situations often shows that the poor, ill-served population are paying, and will continue to pay, considerably more per litre for their limited supplies of water, either by bottles, or through tankers or vendors, than the more affluent sections who are already served (albeit insufficiently) or will be provided with water supplies by the proposed project. The equity principle must, therefore, be observed.
- 3.7.25 Social benefit must not be sacrificed for financial expediency. Sound project design should call for an equitable distribution of benefits, including the use of cross-subsidies, where necessary, to provide the largest volume of benefits to the most deprived sectors of the population concerned.

Social Sectors and Services

- 3.7.26 In sectors that deliver social services, including poverty relief, health services, education, agriculture extension, etc., cost recovery is not normally sought because these services have been regarded as public services to be financed from general taxation. While this practice is likely to continue for many years, particularly for the poorest sections of a population, increasing pressures on national budgets may force the development of some form of user charges. While some cost recovery may be introduced to reduce budget deficits, others fees may be used to cut back demand for frivolous or unnecessary services or to re-direct demand for services for which a section of the population could pay. But because user charges applied in such sectors will probably have the effect of demand reduction, their introduction needs to be designed with much care. In this regard, income and social studies may be needed to identify and to target the elements of services and population groups to be addressed.

- 3.7.27 User charging assessment and collection methods should be examined for feasibility and costs, as part of cost/benefit studies to determine viability of such schemes. Comparing the demand, supply, and costs of ongoing, parallel private sector schemes that provide similar service can develop validity tests of such studies. As an example, private sector fee-paying education facilities sometimes rival state systems, which may be of lower quality due to lack of funding. Measurement of likely demand for equivalent-level state schemes may reveal the feasibility of charging for partial, or all, services in a particular stream of training without undue hardship, especially if the constraint is lack of facilities instead of consumer resources.

3.8 PREPARING FINANCIAL FORECASTS

Introduction

- 3.8.1 Forecasting financial performance is frequently a difficult task for the financial analyst. The records of past performances may not be up to date, may not be reliable or may not be available at all making designing a model for forecasting based on past experience difficult. Despite these difficulties, the financial analyst is required to develop financial information relating to a project, and where appropriate the EA, for a period of time that will allow the Bank's management and the borrower to form a judgment regarding the financial viability of the proposed project. As part of that decision it may be necessary to define the minimum financial performance that must be achieved to ensure the project will be viable. Steps necessary to achieve the minimum levels of performance will need to be agreed with the borrower and may be included in the loan covenants. It will not help the borrower or the Bank for a financial analyst to forecast financial success in order to bring a project to the Bank's Board, if there are indications are that such success is unlikely. Overly optimistic financial projections have too often been associated with unsuccessful projects.
- 3.8.2 Recognizing that it is impossible to know precisely what will happen in the future it is still the responsibility of the financial analyst to anticipate financial, economic and political issues that have the potential to affect the performance of the project. Where the probability of the anticipated events occurring is high they need to be reflected in the financial projections and stated in the assumptions. Where the probability is below the threshold needed to be reflected in the financial statements the potential impact needs to be subject to sensitivity testing. In addition, any mitigating steps needed to be taken to avoid or minimize the potential negative effects need to be identified and implemented, and if future action is needed, included in the loan covenants.

Financial Accounting Standards

- 3.8.3 Financial statements for revenue-earning projects and EAs presented in Bank ARs should be compiled in accordance with International Financial Reporting Standards (IFRS)/International Accounting Standards (IASs). However, where tables are prepared on the basis of the local accounting standards, the text or footnotes to the tables must disclose the deviations from IFRS/IAS and their impact on the financial statements. Financial covenants in loan documents would normally be based on IFRS/IAS as well.
- 3.8.4 For an EA whose accounting practices do not conform to IFRS/IAS; or to the country's generally accepted accounting practices (GAAP), which are acceptable to the Bank; or where the country's GAAP are inappropriate for presentation of financial analysis, actual

and forecast data should be presented on the basis of the staff's judgment of reasonable practice. Where the presentation departs from the EA's existing procedures, the report should explain the changes made. Where restatement is extensive, comparison of actual financial statements with forecasts may be impossible during project supervision without preparing an additional set of forecasts reflecting the entity's accounting practices. Such forecasts should be included in the Project File.

- 3.8.5 Accounting standards followed by non-revenue earning projects should be compared with International Public Sector Accounting Standards (IPSASs). In most cases the comparison will be with the Cash Basis IPSAS. EAs for non-revenue projects should be encouraged to disclose differences between national accounting standards and IPSASs, if any, in the Notes to the Financial Statements.

Determining Fiscal Period Coverage

Revenue-Earning Projects

- 3.8.6 For revenue-earning projects and their EAs, financial analysis needs to be based on a reasonable period of confirmed past financial status and operating performance of the EA. The current financial status and performance will also be a useful guide to the capability and capacity of the EA to deliver the project. With the information gained from the past and current performances, forecasts should be prepared of the financial status and performance likely to be achieved during implementation, and for a meaningful period of operations following commissioning of the project. This applies particularly in cases where the EA will implement and operate the project as part of its ongoing operations, such as an existing electric power generating utility or a water supply and sewerage utility.
- 3.8.7 There can be no definitive time periods for performance measurement. The time frame chosen for each project and EA must be selected on the basis of the financial analyst's judgment of the period(s) that are likely to be the most informative for an accurate and reliable justification for the project. Forecasts should normally be made until a "steady state" has been reached, reflecting normal utilization of the project facilities. As a general rule, it is unlikely that a period of less than two years of actual (audited) performance immediately prior to implementation, together with the implementation period and not less than three years of full operation following final commissioning would provide a satisfactory reliable sample. If a substantial financial change is forecast within the life of the loan that would seriously affect the "steady state", the text should specifically discuss the impact of such a change on the financial condition of the EA. If possible, the projections should be extended to cover such an event.
- 3.8.8 Some projects have high risk factors, such as drilling for ground water or for oil or gas. Usually these types of projects provide for significant testing (seismic tests or drilling test wells, etc), which are preferably undertaken prior to Bank financing. However, even with testing, the volume of water available or the size of the oil or gas field may not be known until the planned drilling program is at least partially complete. These types of projects have high risk levels and require careful sensitivity testing for various outcomes for capital expenditures as well as sensitivity testing for output yields. Conversely, other types of projects may be commissioned within one or two years of the commencement of implementation. Usually it is necessary to provide a financial forecast of the completed project including at least three years of full operation, therefore the period of detailed

analysis may cover 10-12 years or more (two years past performance, the current year, five or six years for implementation and three years after project completion) until reaching the “steady state” stage.

- 3.8.9 Some projects include components that have protracted implementation periods, for example, hydro-electric dams and forestry projects. In these cases of projects which take many years to reach normal capacity operating rates (e.g., 15-20 years for forestry projects), it is acceptable to limit the time horizon of the forecasts for the enterprise as a whole to between two and five years beyond the completion of project construction, even though normal operating levels may not have been reached.

Non-Revenue-Earning Projects

- 3.8.10 Normally for non-revenue-earning projects, the financial analysis should address only the financial requirements of the project itself, in the form of the Financing Plan, and the operating costs for up to five years following completion. Unless the EA is also the subject of some form of financial performance reform as part of the project, there is no requirement to provide past performance data, unless this is material to support project justification. Similarly future performance should normally focus on project execution and include only those costs of the EA for which financing must be assured to ensure the successful implementation of the project. There are no standard presentations for the wide range of non-revenue-earning projects and agencies.

Current, Real and Constant Prices

Current Prices

- 3.8.11 Forecasts, in the form of annual financial projections over the period of implementation, and for the period necessary to achieve a steady state, should be made in nominal (current) prices. Tables should clearly so indicate. The year of appraisal is the base year of projection. Forecasts in current terms are usually based on the same price assumptions as in the project cost estimates, at least through the construction period, as long as such assumptions are relevant for the labour, goods and services concerned. Appropriate price assumptions should be made for items which are not involved in the project cost estimate or which need to be priced on differing bases. Such forecasts should be made on the basis of alternative scenarios to illustrate a range of possible futures and uncertainties, and the forces that are likely to shape them. This is particularly true for revenue projections because in some industries: (i) the output is subject to market competition and an assumption that revenue will increase in a manner consistent with general price increases needs to be carefully examined for validity; (ii) the output price is regulated by the government or by a government agency such as power, water or port authority; and (iii) the price increases may be subject to political approvals in a legislative body or be otherwise subject to political influence. Several tests of the sensitivity of revenue projections should be undertaken with a full discussion of assumptions made, conclusions reached and mitigating actions taken to minimize the risks, possibly including introduction of a covenant specifically relevant to the assurance of an adequate revenue stream.

Real Prices

- 3.8.12 Where the analysis is made in real terms, its use must be fully justified. Relative price changes resulting from the differential effects of changing prices and inflation on particular expenditure items and on the revenue stream may be overlooked when real terms are used. This can lead to distortions in the cash flow statements. By contrast, forecasts in current terms require the analyst to make specific judgments about these effects. Therefore forecasts in current price terms are preferred.

Constant Prices

- 3.8.13 Where an EA operates within an established national system for adjusting costs and/or revenues for inflation or in countries where price and foreign exchange rate movements are highly erratic, constant price forecasts may be used, provided that the impact of the conversion to current prices, particularly on cash flows, is demonstrated. Whenever constant prices are used sensitivity analysis needs to be applied to both revenue and cost streams for the impact of significant price changes particularly where the project has incurred debt denominated in foreign currencies.

Using a Stable Foreign Currency

- 3.8.14 Forecasts normally should be made in the local currency. An exception may be made when the local currency is unstable, for example due to high and erratic levels of inflation, in which case an alternative to the use of constant prices may be to denominate the forecasts in a stable currency with which the borrowing country has a consistent money-market/foreign exchange relationship. This alternative method prepares forecasts in current price terms using the stable currency, for example, the US Dollar. Justification for the use of the foreign currency, the foreign country's inflation rates and the exchange rates used to convert local costs to the foreign currency basis should be stated in the AR. Sensitivity analysis on the exchange rate used and on inflation differentials should be applied and explained.

Summary Financial Statements

- 3.8.15 In the AR projected balance sheets, income statements and cash flow statements of the project entity should be shown in summary tables, so as to permit comparisons between past and forecast data and to allow for ready identification of trends. The data should be consistent with demand and disbursement forecasts elsewhere in the report. Because the presentation and interpretation of figures in periods of changing prices and inflation is both difficult and risky, staff should assist readers whenever possible by (i) highlighting underlying trends in data, particularly where these may be obscured by substantial rates of inflation and (ii) describing the results of sensitivity analysis of the underlying trends.
- 3.8.16 Summary tables should be inserted adjacent to the textual material in the AR. Past, present and future performance, and status data may be combined in one summary. The use of summary tables should not be substituted for detailed tables in an appendix to an AR where the latter are necessary to disclose significant information to support a project and loan. Conversely, the presentation of lengthy summary tables in the financial chapter of an AR covering many years of past and future performance may be confusing to readers. The optimum presentation is the one that conveys the maximum information in the minimum of space, without sacrificing accuracy and intelligence.

3.8.17 The Knowledge Management, section 7.26 of these Guidelines provides examples of formats for financial projections and year-end reporting for the following: Income Statement, Balance Sheet, and Cash Flow Statement. The examples are for a service-type organization and for a manufacturing organization and should be modified appropriately to reflect the nature of each project or EA.

Income Statements

3.8.18 The following matters should be considered when preparing detailed income statements: (i) Data for each year are to be defined as actual or forecast, (ii) Presentations normally should follow the accounting and financial reporting format adopted by the EA, and (iii) Operating revenues and operating costs presentations will vary widely by sectors, and should detail the specific forms of revenue and costs typically found in the sector.

3.8.19 At least the following information and analyses should be provided with the income statement:

- *Unit volume*: the basis for volume forecast should be described and related to the EA's output capacity and market demand,
- *Operating revenues*: describe significant past and expected changes in selling prices, tariffs and composition of sales mix,
- *Operating costs*: analyse past trends, and give assumptions for projections in each operating cost category (for example: examination of numbers and skills of staff and unit costs; expected cost trends for goods and services; or percentages of revenues or assets where these are the appropriate bases for the forecasts),
- *Depreciation rates*: these may be addressed as balance sheet information,
- *Non-operating section*: describe any significant past experience and give assumptions for the forecasts of other income and expenses; relate forecast interest expenses to loans outstanding,
- *Taxes on income*: give the basis for income tax charges; in public utilities or other sectors where taxes on income are normally presented as part of operating costs, the presentation shown in the table need not be adhered to; and
- *Appropriations from net income*: state basis for past appropriations and any assumptions on future dividends, etc.

3.8.20 Useful ratios for analysing income statement information: growth rates; gross profit as a percentage of revenues; operating ratio; operating income or net income as a percentage of revenues; net income as a percentage of revenues; and return on average invested capital (see Knowledge Management, section 7.20 of these Guidelines).

Balance Sheets

3.8.21 The following should be considered when preparing the detailed balance sheet:

- *Data for each year*: should be defined as Actual or Forecast.
- *Surplus cash*: where it is assumed that material amounts of funds may be accumulated and available for other capital projects or paid as dividends, the forecast balance sheet should show such cash separately.
- *Long-term debt*: should be shown in detail, if necessary, distinguishing between local and foreign debt. Current maturities of long-term debt should be deducted and shown under Current Liabilities.

- *Current assets and liabilities:* working capital requirements should be based on the entity's practices, together with any changes due to the project; operational cash requirements should be illustrated; and projected cash surpluses or shortfalls should be explained.
- *Intangible assets and long-term investments:* the basis of forecasts should be stated – particularly any valuation of goodwill on acquisition of other executing enterprises, or justification for the realization and use of long-term investments.
- *Fixed assets:* the basis for estimating additions to fixed assets in relation to the construction program, revaluation of assets, and any anticipated property retirements should be in accordance with IFRS/IASs or otherwise explained. Transfers of capital expenditures to the “plant under construction” and “plant in service” accounts may be based on the assumption that a certain percentage of capital expenditures is “booked” to plant in service each year. In other instances, the transfers may be based on a detailed asset construction completion schedule. It is often useful to provide a subsidiary schedule to the balance sheet, showing the transfers from capital expenditures to plant under construction and plant in service, together with the basis for such transfers.
- *Accumulated depreciation:* rates and bases for depreciation should be stated. Alternatively, they may be shown with the income statement or as part of assumptions in an appendix. Any substantial changes in accumulated amounts (e.g., due to revaluation of assets) should be explained.

3.8.22 Ratios relating to balance sheets include: asset turnover; growth rates; quick ratio; current ratio; debt as percentage of total capitalization; rate of return on net fixed assets in operation; accounts receivable outstanding on a daily basis; inventory outstanding on a daily basis; and, net tangible assets as percentage of long-term debt (see Knowledge Management, section 7.20 of these Guidelines).

Cash Flow Statements

3.8.23 Cash flow statements classify cash flows during the period from operating, investing, and financing activities. The Bank prefers that cash flows are prepared using the direct method⁶. Where this method is used, a note that reconciles net surplus to net operating cash flows should be provided.

3.8.24 Matters that may need to be considered when preparing cash flow statements include:

- *Data for each year:* should be defined as “Actual” or “Forecast”.
- *Total column:* To reconcile the statement with the financing plan, a total column should be inserted to show the aggregate cash flows during project implementation.
- *Capital expenditures:* The following items should be shown separately: (i) the total expenditures on assets; (ii) financial charges during construction (FCDC); and (iii) working capital, particularly for start-up industrial and manufacturing projects. The separation of item (i) and item (iii) should facilitate reconciliation with amounts in the project cost table and the financing plan in the AR.
- *Borrowings:* Bank loan data should be disclosed in the disbursements table(s) of the AR. Estimates of funds available from other sources should be consistent with the information contained in the discussion of the financing plan. In more complicated financing, the

⁶ Direct method: cash flow components are shown directly, such as cash receipts and payments to employees and suppliers, rather than being derived from the income statement and balance sheet.

funds statement should be supported by a supplementary schedule showing the forecast disbursement of other loans and equity investments.

- *Short-term loans to finance working capital:* working capital requirements may be shown net of short-term loans, in which case a footnote indicating the amount of short-term financing should be added. On the other hand, such short-term financing may be shown separately as a source of funds with a corresponding increase in working capital needs.
- *Debt service:* the actual payments estimates of interest and debt repayment should be consistent with the terms of debt explained by notes to the balance sheet. Where several loans are involved, an interest expense and debt repayment schedule could be used. Interest payments should be net of financial charges during development (FCDC);
- *Equity contributions:* these should, where appropriate, be classified as amounts contributed by shareholders, the government and consumers, where appropriate. Sources of resource mobilization for the project include funds from retained earnings.
- *Cash:* should contain an amount estimated to reflect operational needs. If cash surpluses are planned, for example, as a result of advance long-term borrowing, the balances may be added to a “short-term investments” account, to distinguish the operational cash needs from the more financially related, tactical funds needs. The use of a short-term investment account is advisable when the surplus cash balances are large and the interest income significant. Short-term borrowings - “balancing liabilities account” - may be used where funding needs temporarily exceed fund sources.

3.8.25 The following are typical ratios relating to cash flow statements: (i) debt service coverage; (ii) growth rates; and (iii) percentage of capital expenditure financed by internal sources (see Knowledge Management, section 7.20 of these Guidelines).

Other Assumptions

3.8.26 Financial forecasting requires analysts to make assumptions, although as many factors as possible in an analysis should be based on researched and actual empirical performance data. When a project consists of additional new investment such as additional power generation capacity for an established power utility, a history of management and levels of efficiency already achieved exists. This provides a sound base for forecasting assumptions. A new project, however, will require a lot of assumptions to be made by its designers and by the analyst regarding input costs, quality and quantities for both investment purposes and for operations and maintenance. Therefore it is essential that the financial analyst disclose all assumptions made together with the date of the base data. Where an assumption is crucial to the analysis, and possibly contentious in nature, the basis of reasoning for that assumption should be indicated, and the grounds or basis for its adoption must be stated in the AR. All assumptions and data sources should be summarized in an appendix to the AR and detailed in the Project File.

3.9 LOAN COVENANTS

Introduction

3.9.1 The entry into force of loan agreements is subject to the fulfillment by borrowers of the provisions of the General Conditions Applicable to Loans and Guarantee Agreements of the Bank. The general conditions are the subject of a separate publication issued by the Office of the General Counsel & Legal Services (GECL) and are not discussed in these Guidelines. In addition to the general conditions, GECL translates agreed policies, goals

- or objectives into covenants as either Conditions Precedent to First Disbursement of the Loan or Other Conditions. The financial covenants discussed in these Guidelines fall under the later two categories.
- 3.9.2 To assist EAs to achieve their financial objectives, as well as governmental economic objectives including contributing to the National Development Strategy to the government's Poverty Reduction Strategy, the Bank seeks assurance, for projects it is supporting through loans that the operational objectives of an EA as agreed with the borrower, would be met, at least through the life of the project. These covenants are designed to: (i) enhance the financial performance of the entity; and (ii) ensure that the investment, including Bank loan proceeds, is used effectively. Such covenants, as described in the loan agreement, are to be complied with in a manner that is consistent with the Bank's policies and may be varied in nature, often addressing technical or social and economic performance, in addition to financial performance.
- 3.9.3 In the Paris Declaration on Aid Effectiveness (Knowledge Management, section 7.3) donors committed themselves to: "(i) Draw conditions, whenever possible, from a partner's national development strategy or its annual review of progress in implementing this strategy. Other conditions would be included only when a sound justification exists and would be undertaken transparently and in close consultation with other donors and stakeholders; and (ii) Link funding to a single framework of conditions and/or a manageable set of indicators derived from the national development strategy. This does not mean that all donors have identical conditions, but that each donor's conditions should be derived from a common streamlined framework aimed at achieving lasting results'.
- 3.9.4 The process of choosing covenants to apply to loans processed after the issuance of the Paris Declaration focuses more clearly on achievement of National Development Strategy or Poverty Reduction Goals and less on the financial viability of individual EAs and projects as a goal in itself. While not precluding financial management covenants that apply to an individual EA there is an implication that policy issues, such as the appropriateness of a subsidy, will be resolved at a sectoral level or a national level and would not be an EA specific issue. Financial covenants might seek assurance that a subsidy is paid promptly and included in measuring cash receipts for the purpose of achieving other financial covenanted goals. In addition, there is a need to coordinate and communicate with other donors in the same sector to ensure that there is agreement on policy issues applicable to the EA in question and that there is agreement on the type of covenants and the definitions applicable to those covenants. Recognizing that all donor covenants need not be identical does not mean that covenants applied by different donors may contradict each other.
- 3.9.5 To further the Paris High Level Forum harmonization agenda, the Bank Group, has developed an Action Plan on *Harmonization, Alignment, and Managing for Results* (revised, October 2005) where it commits itself to work with other MDBs, and bilateral donors to simplify and harmonize policies, procedures, and requirements; and to reduce their associated costs by aligning support with country-owned poverty reduction strategies or other country frameworks.
- 3.9.6 Financial performance covenants can be broadly classified into two categories, namely financial and management systems and financial performance. *Financial and management system covenants* usually address such specific problems as selling and

marketing practices, inventory control, installation and operation of accounting and costing systems, control of labour and material costs, strategic and financial planning, budgeting systems, etc. Financial performance covenants are designed to:

- Support socio-economic development,
- Promote financial viability, satisfactory financial performance and prudent financial management of an enterprise,
- Development of local capability to manage the project without external assistance not only under normal business conditions, but also in adverse operating or trading circumstances,
- Provide a basis for monitoring by regulatory agencies of government, and the Bank, of the financial performance of the enterprise,
- Assist the enterprise to achieve a creditworthy status to facilitate acceptance in capital markets, and
- Protect the borrower's and the Bank's financial interests.

3.9.7 Frequently public sector enterprises provide services to lower income groups at or below the financial or economic cost as part of a National Poverty Reduction Strategy. This raises issues of whether: (i) an enterprise and a sector should be responsible for cross-subsidization; (ii) the government should finance the costs through subsidies either to the enterprise or directly to the beneficiaries; and (iii) the enterprise should be allowed to set lower financial targets which recognize the inability of certain users to meet actual and/or marginal costs. In the latter case, the setting of lower financial targets should not normally be acceptable. If the financial targets are set according to this design their lowering can only risk the future ability of the enterprise to provide a quality of service or product to all consumers. For a public utility to achieve all its goals under the National Development Strategy or the Poverty Reduction Strategy it must have a cash flow that maintains its financial health. The amount of subsidy a government wishes to provide directly or indirectly (e.g., through public enterprises) to low income citizens to enable them to receive goods or services from public enterprises should be recognized in the government's budget and the government should get credit for the true amount of assistance they are providing through implementation of their Poverty Reduction Strategy. A transparent manner to achieve the above goals would be for the government to pay the public enterprise the full amount of the goods or services provided under normal tariff conditions. Such issues must be resolved as part of project preparation and discussed in the AR. Because financial performance indicators are used as the basis for measuring the foregoing, it is essential that the most appropriate indicator(s) be selected for each covenant for each project and enterprise.

3.9.8 The appraisal mission should ensure that, to the extent possible, financial systems covenants and financial performance covenants are complementary. They should be viewed as a comprehensive package designed for the enterprise's management to achieve an integrated financial performance. The proposed financial performance covenants duly subjected to sensitivity analyses should be included in the AR. Before the final formulation of financial performance requirements and related covenants the appraisal mission must carefully weight their effects on appropriate cost recovery, efficiency improvements, fiscal impact and distributional effects. This will help ensure that financial performance requirements are consistent with a government's socio-economic objectives. In addition, when choosing covenants financial analysts should ensure that they include the requirement for a review to be conducted no later than the end of the first quarter of

- each fiscal year. Such a review should be in respect of the fiscal year in which it is conducted and should cover a review of budgets or forecasts for the succeeding year.
- 3.9.9 A full discussion of the financial covenants is included in section 7.27 of the Knowledge Management Chapter of these Guidelines.

Operating Covenants

- 3.9.10 To assist RMC governments achieve efficient management of scarce resources, including the mobilization of revenues and savings, the Bank recommends to borrowers that their public sector revenue-earning enterprises meet a “reasonable portion” of their investment requirements from internally-generated funds. Definitions of “reasonable portion” will vary between countries and sectors, frequently based on a government’s policies for public sector EAs. It will also be dependent on the latest performance of the EA, particularly if its current financial performance is inadequate to support its operations, when the “reasonable portion” may need to be substantially increased above current performance.
- 3.9.11 The principal covenant which the Bank uses to assure the financial performance of a revenue-earning enterprise is one of several possible “operating covenants”. The two principal forms of operating covenant used most frequently are the Rate of Return and the Self-Financing Ratios. Each specifies the minimum annual financial performance to be achieved by a public sector enterprise in terms of either the rate of return on invested capital, or the contribution to investment requirements to be generated from the enterprise’s operations.
- 3.9.12 Competition is usually limited in the market(s) in which public enterprises operate. Levels of output prices may be adjusted by the enterprise’s management board (for example, Public Boards of Management for Electric Power) or the government may control or regulate tariffs and charges through the concerned sector ministry, the Ministry of Finance or the Cabinet. In such cases, operating covenants serve to require a management board or a government to authorize tariffs and prices that provide for the satisfactory financial performance by the EA or enterprise. Where an independent regulator regulates the sector, the enterprise and/or the government may not have the same degree of discretion to adjust output prices or tariffs and charges. In such cases, operating covenants serve the same purpose, but the enterprise may need to take alternative measures (such as tighter controls on operating expenditures) in order to meet such covenant, in addition to making applications to the regulatory authority to increase tariffs and charges.
- 3.9.13 When the financial performance of the EA has been very poor, forms of operating covenants used include the operating ratio covenant, or the break-even covenant. Depending on the ratio specified, the operating ratio covenant may serve a variety of financial objectives, but it is usually limited in its application, for example, ensuring that earnings would at a minimum cover operating expenses including depreciation and, to the extent possible, debt service requirements in excess of depreciation. The break-even covenant has similarly limited objectives intended to ensure the continued operating capability, solvency and financial viability of the public sector enterprise. It is used where internally generated funds are not expected to contribute significantly to investment. These covenants should be seen as steps to an improved financial performance to ensure

that the public enterprise may achieve its other goals as part of the National Development Strategy or the Poverty Reduction Strategy.

- 3.9.14 Operating covenants should contain provisions for periodic reviews by the enterprise of the actions required to achieve compliance and for furnishing the results of such reviews to the Bank. Such reviews should be made at least annually before the beginning of a fiscal year to permit the enterprise to take timely action. In some cases where financial information is late in delivery, such reviews would need to be made on the basis of firm estimates and the specific forecasts noted for revision when final data is available. In highly inflationary economies, more frequent reviews (e.g., quarterly) may be needed.

Capital Structure Covenants

- 3.9.15 The Bank uses four capital structure covenants; (i) debt service-coverage ratio; (ii) debt-equity ratio; (iii) absolute debt limitation; and (iv) capital-adequacy ratio. These covenants shape the capital structure by limiting the debt that may be incurred in relation to annual cash flows, the amount of equity capital, or absolute annual amount.
- 3.9.16 The capital-adequacy ratio covenant seeks to ensure that the equity of a financial institution will at least be adequate to meet its losses. Some form of debt limitation covenant, usually either the debt service coverage or debt-equity ratio, should be used for projects involving revenue-earning entities. The debt limitation covenant complements an operating covenant to provide assurance that fixed debt service obligations will be not increase significantly when the broader financial objectives of the operating covenant are not being met. Where an operating covenant is not appropriate, the debt limitation covenant serves as the main covenant promoting financial viability. Exceptions to the use of both types of covenant would be where an entity is financed predominantly through borrowing, and earnings may reasonably be expected always to be sufficient to meet debt service obligations; for example, where a public utility project, usually in the water supply or sewerage sector, funds virtually all of its capital requirements through borrowings and its financial performance is regulated by a breakeven covenant. When dealing with entities that are likely to pay dividends, it may be advisable to use a dividend limitation covenant to complement a debt limitation covenant.
- 3.9.17 Capital structure covenants serve to assure the continued solvency and financial viability of revenue-earning enterprises by imposing prudent limits on their long-term borrowing. If an EA does not incur debt after entering into such a covenant, or refrains from further borrowing after a period of compliance with the covenant, even though the performance criteria agreed to in the covenant subsequently may not be complied with, (for example if the debt service-coverage ratio falls below 1), the EA is not in default of this covenant until it again commences to incur debt. The limits of a covenant should be set so as to enable debt service obligations to be met under adverse as well as normal business conditions, taking into account business and financial risks.
- 3.9.18 The distinction between debt and equity is not always clear. For instance, preference shares have many characteristics of debt while convertible notes might be treated as equity. Furthermore, derivatives and other financial instruments add layers of complexity. Therefore, for the purposes of formulating covenants, a cautious approach should be taken by including any difficult-to-classify instruments in the definition of debt.

Treatment of Short Term Debt

- 3.9.19 The Bank's standard definition of the term "debt", as applied in the design of capital structure covenants, is any indebtedness of the borrower maturing by its terms more than one year after the date on which it is originally incurred. This limits the application of the covenant to what is usually referred to on a balance sheet as long-term debt, and it excludes short-term debt usually shown on a balance sheet as part of current liabilities. This exclusion is appropriate when short-term debt is incurred as a source of working capital, since any limitation on such uses that is considered necessary can be covered by a liquidity covenant. However, although the current portion of long-term debt (shown as a current liability) is included in the definition of long-term debt for purposes of a capital structure covenant, it should still be retained as a current liability for purposes of a liquidity covenant.
- 3.9.20 Consideration should be given to the need to refine the definition of "debt" or to use a supplementary covenant to cover some short-term loans that are: (i) being continuously rolled over, or (ii) used as "bridging funds" pending receipt of the proceeds of sale of equity or long-term debt. In the former case, if the amounts involved are likely to be significant, they should be included within the definition of debt covered by the covenant or be covered by a complementary limitation on short-term debt. In the latter case, the need will depend on the judgment as to the likelihood and timing of the replacement by long-term debt or equity. When in doubt, the overall objective should be used as a guide; viz., if the borrower's recourse to long-term debt needs to be restrained, no alternative facility in the form of short-term debt should be admissible, unless suitably defined, categorized and counted in part, or in total, as long-term debt for purposes of the covenant.

Treatment of Financing Leases

- 3.9.21 Some institutions use finance leases to acquire the use of assets; the final ownership of the asset being dependant upon the terms of the lease. A finance lease effectively places all the risks upon the lessee, and therefore it is reasonable to interpret the existence of such a lease and its associated lease payments as debt and debt service respectively, for purposes of the capital structure of EAs. Therefore where an EA has entered into, or proposes to enter into finance leasing agreements, the value of the lease and the annual lease payments should be included in the capital structure and the debt servicing requirements of the agency for purposes of covenants in loan agreements.

Restricting the Use of Loan Funds

- 3.9.22 Capital structure covenants have the inherent limitations that although they are primarily intended to constrain the amounts of borrowing, they do not regulate the use to which any permissible borrowing can be put, (nor do they ensure that existing debt will be serviced, if further borrowing is not incurred). Also, planning and implementation of new projects having substantial debt requirements sometimes delays the completion of ongoing projects, by pre-empting the use of scarce loan resources. If there is substantial concern that a revenue-earning entity is likely to embark on additional projects of questionable merit, a supporting covenant may be needed to restrict the enterprise to investments, which are economically justified and financially appropriate. Such limitations, however, are

generally not needed or advisable, and should be employed only exceptionally and usually limited to the implementation period of the project.

Liquidity Covenants

- 3.9.23 Most operating and capital adequacy indicators are formulated on the basis of accrual information. This means that they may not adequately disclose an EA's liquidity (actual cash) position. Liquidity covenants are intended to assure that an enterprise maintains sufficient working capital (i.e., an excess of current assets over current liabilities) to meet its current obligations in a timely manner and conduct its operations effectively, without financial constraints. The Bank's experience shows that lack of, or insufficient, cash is a major cause of non-performance by EAs. Therefore, a liquidity indicator, preferably the Quick Ratio or "acid test", should be provided for each project. Their limitations are that the data used for the ratio is a "snapshot" figure, usually as at the end of a fiscal period – and, as such, are capable of manipulation. This "snapshot" defect can be substantially overcome by calling for a periodic report to provide a table of month-end quick ratio results for the preceding 12 months (or such other appropriate period).
- 3.9.24 These covenants are generally used only when working capital requirements are significant, as in the case of most industrial and agro-industrial projects, where the enterprise's management may use limited resources to fund capital expenditures to the detriment of operating expenses. By contrast, these covenants are not normally needed in projects where working capital needs may be relatively small, such as utilities and railways. The cash needs of such projects are adequately covered through operating covenants, supplemented, as necessary, by other covenants dealing with working capital issues, such as timely collection of accounts receivable.
- 3.9.25 The Current ratio and Quick ratio covenants require the borrower to maintain a specified minimum liquidity ratio and to undertake corrective actions if the actual ratio falls below the prescribed level. The quick ratio covenant excludes the cost of inventories at the date of the balance sheet.