

OPERATIONS MANUAL BANK POLICIES (BP)

These policies were prepared for use by ADB staff and are not necessarily a complete treatment of the subject.

ECONOMIC ANALYSIS OF PROJECTS

A. Introduction

1. Article 14(xi) of the *Agreement Establishing the Asian Development Bank* (the Charter) requires ADB to take measures necessary to ensure that the proceeds of any loan made, guaranteed, or participated in by ADB are used with due attention to considerations of economy and efficiency. Article 36.2 requires that all decision making in ADB be based only on economic considerations.

B. The Policy

2. The purpose of economic analysis of projects is to promote the identification and selection of public investments that will lead to a sustainable improvement in the welfare of beneficiaries, and a country as a whole. Project analysis is relevant in the context of specific project investments as well as in investment programs. Additional economic analysis may also be required for investment programs. The economic analysis of projects commences at project conception, is developed during project preparation, is monitored during project implementation, and is reviewed after project completion through the project completion report and, if appropriate, the project performance audit report to ensure that investment resources are used in a manner that is economic, efficient, and sustainable.

3. Economic analysis is carried out to assess the economic viability of a project in the context of a country's macroeconomic goals, performance, and outlook, and in the context of the goals, performance, and outlook of the relevant sector. The rationale for a project, in terms of the market or nonmarket failure that is to be addressed, needs to be clearly stated and set in the context of the country's national and sector development goals. All technically feasible alternative ways of achieving a project's objectives must be considered so that the least-cost technically feasible alternative can be identified. This least-cost alternative will normally be selected as the preferred alternative. If not, other economic principles must be applied to justify the preferred alternative. The costs and benefits of this preferred alternative, defined and valued from the perspective of the national economy relative to an appropriate situation, are then compared to assess economic efficiency. National environmental costs and benefits should be identified and included in the analysis as appropriate. If benefits cannot be valued, economic costs are assessed against project objectives to minimize the resources required to achieve the objectives. Where the outputs of a project can be quantified but not valued, economic efficiency can be assessed in terms of cost-efficiency alone.

4. To determine the likelihood of a project achieving its desired development impact, the risks associated with a project are identified and their potential impact on project viability, and on the project's financial and institutional sustainability, assessed.

Consideration is given to possible fiscal impacts associated with a project. Any subsidies associated with a project are identified and quantified.

5. Project stakeholders are clearly identified and the distribution of costs and benefits between stakeholders is assessed. In this context, consistency with ADB's poverty reduction strategy is considered.

6. Economic analysis is undertaken in coordination with institutional, financial, environmental, social and poverty analysis and forms an integral part of investment appraisal.

C. Scope of the Policy

7. The policy applies to project investment activities undertaken with the support of project, public sector, and private sector loans. The policy also applies to program loans with discrete, identifiable investment components.

Basis: This OM section is based on:

ADB. 1997. *Guidelines for the Economic Analysis of Projects*, February. Manila.

ADB. 1996. Doc. IN226-96, *Bank Criteria for Subsidies*, October. Manila.

This OM section is to be read with OM Section G1/OP.

Compliance: This OM section is subject to compliance review.

For inquiries: Questions may be directed to the Assistant Chief Economist, Economic Analysis and Operations Support, Economics and Research Department.

OPERATIONS MANUAL OPERATIONAL PROCEDURES (OP)

These procedures were prepared for use by ADB staff and are not necessarily a complete treatment of the subject.

ECONOMIC ANALYSIS OF PROJECTS

A. Introduction

1. ADB's policy requires that all investment activities be subjected to economic analysis in order to ensure the economic and efficient use of resources.

B. Application of the Policy

2. Economic analysis comprises a quantitative and qualitative examination in sufficient depth to determine the acceptability of an investment project in terms of economic efficiency and sustainability. The analysis should include the elements identified below.

- (i) **Review of macroeconomic context.** A project cannot be designed and implemented in isolation from the rest of the economy. A review of the macroeconomic context is needed to provide an understanding of the economy's overall performance and outlook, and of how specific macroeconomic factors may affect project performance. This review, which underpins subsequent stages of the economic analysis, is normally undertaken during preparation of the country strategy and program (CSP) and its update (CSPU).
- (ii) **Review of sector context.** Analysis and understanding of markets, public institutions, and the policy environment provides the basis for identifying of market and institutional failures. When subsequently combined with sector wide demand and supply analysis, this provides the basic rationale for a possible investment project.
- (iii) **Demand analysis.** A project that does not meet the consumer's or user's demand for particular goods or services will not generate benefits and will result in inefficient investment. Demand analysis provides the basis for identifying the goods or services needed by users and for estimating the scale of, and economic benefits from, an investment project.
- (iv) **Identification of project rationale.** The rationale for public intervention in a sector can be based on the failure of (a) markets to adequately provide what society wants, or (b) public institutions to deliver public goods or services. Clear definition of the project rationale helps to narrow down the possible alternative ways of meeting a development objective.
- (v) **Identification of project alternatives.** All alternative, mutually exclusive ways of meeting the intended development objective should be identified,

and consideration given to what will happen without the proposed project. Alternative project designs need to be compared in terms of scale, location, technology, and timing. Demand factors will also be important. Least-cost analysis must be undertaken to identify the preferred alternative. The basis for selecting the preferred alternative should be clearly explained, particularly if it is not the least-cost alternative in economic terms.

- (vi) **Identification and comparison of project costs and benefits.** The economic costs and benefits associated with the preferred project alternative relative to the without-project case must be identified and valued appropriately. In addition to costs and benefits that relate directly to the project, external factors, such as environmental costs or benefits, may also need to be included. Project outputs need to be separated into those that substitute for other outputs without the project and those that add to total supply within the economy, as these different types of output are treated differently for purposes of valuation.
- (a) Costs and benefits must be estimated in terms of a common economic price level and a common unit of account in order to allow comparison. Prices can be expressed in terms of either the domestic price level or the world price level. The unit of account can be either the domestic currency or an international currency.
- (b) When economic costs and benefits have been valued on a consistent basis, using a common price level and in terms of a common unit of account, various criteria are applied to test whether the project represents an economically efficient investment. The basic criteria for assessing a project's economic viability are the economic net present value (ENPV) and the economic internal rate of return (EIRR). For a project or a subproject to be acceptable, the EIRR should equal or exceed the economic opportunity cost of capital (EOCC) for the borrowing country. Given the complexity of estimating country-specific EOCCs, a discount rate of 12% in constant economic prices is generally used as a proxy for EOCC in the economic analysis of ADB-financed projects. Where significant unquantifiable net benefits are believed to be likely, the discount rate or EIRR may be between 10% and 12%.
- (c) For projects with benefits that can be quantified but not valued, it will not be possible to calculate ENPV or EIRR. For such projects, economic analysis will be based on an analysis of the cost-effectiveness of alternative ways of achieving the targeted level of benefits.
- (vii) **Assessment of project sustainability.** A project is sustainable if its net benefits endure throughout its life at a level sufficient to meet the economic viability criteria. Economic benefits depend on financial and institutional sustainability, and the ability of business entities to perform

financially. For revenue generating projects, financial analysis for project participants is an important element of sustainability analysis, as it establishes if (a) incentives are sufficient for producers to participate in the project; and (b) funds will be sufficient for investment, operation, and maintenance. For all projects, particularly that do not generate revenue, the fiscal impact during implementation and operation needs to be carefully considered. Any subsidies associated with a project must also be identified and quantified.

- (viii) **Distribution of project effects.** Project beneficiary and stakeholder groups, and the extent to which they gain from benefits or bear costs associated with a project, should be identified. Where project effects are intended to benefit a particular target group, the proportion of net benefits going to that group should be assessed.
- (ix) **Sensitivity and risk analysis.** Future events always entail a degree of uncertainty; thus, it is necessary to understand the variables in an economic analysis that are subject to risk, the source of the risks, and the probable extent of variation. Sensitivity analysis is undertaken to identify the parameters that are uncertain and to which the ENPV and EIRR are sensitive. Switching values, showing the change in a variable necessary to change the project decision from acceptance to rejection, should be presented for key variables. These can then be compared with experience from previous projects. A quantitative risk analysis is recommended for large projects, those with an EIRR close to 12% and those with a high degree of associated risk. A qualitative assessment of risk should be undertaken for all projects. Sensitivity and risk analyses contribute to improved project design and help identify action needed to mitigate against major sources of uncertainty.
- (x) **Identification of indicators for project performance monitoring system.** Economic analysis, as undertaken before the commencement of project implementation, is based on assumptions about expected future values of key variables. Once implementation commences, monitoring of actual outcomes is necessary for managing implementation and assessing development impact. The project performance management system should include the key variables necessary to identify a project's impact during implementation and operation.

3. The economic analysis of an investment project, including its underlying assumptions, is to be incorporated into the report and recommendation of the President. Given the page limits for this report, a supplementary appendix may be used to document full details of the economic analysis. Cross-references to other relevant ADB documents, such as project/program preparatory technical assistance reports and the CSP or CSPU should be incorporated as appropriate.

4. The project team, which is tasked with designing, preparing, and appraising an investment project, is responsible for preparing the economic analysis, while the director general of the regional department concerned is responsible for the quality of the economic analysis. Management considers the economic analysis in making its

decisions on each investment project. The Economic Analysis and Operations Support Division of the Economics and Research Department provides advisory services throughout this process. The division is responsible for reviewing the economic analysis at appropriate stages of project processing and for providing guidance thereon.

- Basis:** This OM section is based on OM Section G1/BP, OM Section D11/OP, and the documents cited therein.
- Compliance:** This OM section is subject to compliance review.
- For inquiries:** Questions may be directed to the Assistant Chief Economist, Economic Analysis and Operations Support, Economics and Research Department.