Contingency Calculations for Environmental Impacts with Unknown Monetary Values

David Dole

February 2002
ERD Technical Note No. 1

Contingency Calculations for Environmental Impacts with Unknown Monetary Values

David Dole

February 2002

David Dole is an Economist with the Economic Analysis and Operations Support Division of the Economics and Research Department, Asian Development Bank. The author thanks colleagues at ADB who provided helpful comments on an earlier draft of this paper: Piyasena Abeygunawardena, Lakshman Athukorala, Stephen Curry, Manabu Fujimura, Xianbin Yao, and Cherry Zafaralla.
Foreword

The ERD Technical Note Series deals with conceptual, analytical, or methodological issues relating to project/program economic analysis or statistical analysis. Papers in the Series are meant to enhance analytical rigor and quality in project/program preparation and economic evaluation, and improve statistical data and development indicators. ERD Technical Notes are prepared mainly, but not exclusively, by staff of the Economics and Research Department, their consultants, or resource persons primarily for internal use, but may be made available to interested external parties.
# Table of Contents

Abstract vii

I. Introduction 1

II. An Economic Model of Contingency Calculations for Environmental Impacts 3  
   A. Mathematical Derivation of the Model 3  
   B. Application of the Model 6

III. Recommendations on Applying the Model in Project Analysis 8

References 10
Abstract

Measuring the monetary value of environmental impacts can be a difficult, time-consuming, and expensive process. Project analysts are often left with no resort but to acknowledge that the monetary values of some impacts are unknown. If a project is not otherwise justified in terms of the known monetary values, the decisionmakers themselves must resolve the uncertainty, implicitly or explicitly, in their decision to accept or reject a project. To do so, decisionmakers must determine whether the net present value of the unknown values is greater than the deficit of the known values—a difficult and awkward comparison for anyone. This paper proposes a method to calculate the value of environmental impacts that is just sufficient to justify a project. The method expresses the value in terms of an annual value per household, so it is relatively easy to interpret. It is also simple to apply, requiring only standard economic and demographic information. As an example, the method is applied to a recent project of the Asian Development Bank (ADB), which among other things aimed to protect a nesting area of migratory turtles in Sri Lanka. This project had a negative net present value at ADB’s standard discount rate, but the project could be justified if Sri Lankans valued the nesting area at less than one cent per household per year.
I. Introduction

Many development projects have environmental impacts, both intended and unintended, which are not reflected in the direct, monetary costs and benefits of the project. For example, in 1999 the Asian Development Bank (ADB) approved a loan to the government of Sri Lanka to finance a project aimed at improving coastal resource management. Among the project’s many benefits is the protection of a nesting area for migratory turtles in Mawella Lagoon on the southern coast of Sri Lanka, an impact that may have tenuous benefits to both Sri Lanka and the world as a whole (ADB 1999).

Environmental impacts, such as protecting or even disturbing wildlife habitat, complicate the economic evaluation of a project, since the impacts are not immediately in the same units as the direct, monetary costs and benefits of the project. In the Mawella Lagoon, for example, the project was expected to increase the value of the lagoon’s fishery, a benefit that an analyst could measure in dollars or rupees. The project could also increase the population of migratory turtles, but unless those turtles also generate some market activity (say, through harvesting, turtle-watching tours, and the like), the analyst cannot include the number of turtles in reckoning the project’s dollar value.

Economists have long recognized the importance of environmental “externalities” (and “merit” goods in general) in project analysis. Little and Mirrlees (1974, 348-9) recognized that “great projects, involving large areas of land and changes in water use, may have major ecological effects ... once their probability is established, the economist may be called upon to appraise them.” Dasgupta et al. (1972, 66-7) acknowledged that “it appears to be practically impossible to quantify many externalities ... we should recognize it as one of the more serious limitations of social benefit-cost analysis.”

Environmental economists, particularly those in the United States, responded to the challenge of “quantifying externalities” by developing various means to measure the monetary value of environmental impacts. For example, an economist could employ a variety of methods to measure the value of protecting the turtles’ nesting area in Mawella Lagoon: (i) a “travel cost” study could measure what people are willing to pay to visit the nesting area for recreation; (ii) an “hedonic pricing” study could measure what people are willing to pay to live near the lagoon, either for aesthetics or for easy access to recreation; and (iii) a “contingent valuation” study could measure what people are willing to pay for the benefit of ensuring the survival of the species of turtles in general, or for preserving biodiversity. (Freeman [1993] provides a thorough review of the methods for measuring the monetary value of environmental impacts. Abeygunawardena et al. [1996] and ADB [1996] provide reviews of environmental economics in project analysis.)

Applying these methods, though, is often beyond the budget, information, and time constraints of project analysts. Conducting a contingent valuation study, for example, costs “US$10,000 to over US$250,000” (Georgiou et al. 1997, 115). In contrast, the present value of the gross quantified benefits of the project at Mawella Lagoon was estimated to be US$200,000. So if the cost of project analysis was charged to the project itself (as perhaps it should be), then measuring the benefits could at the same time wipe out most of the benefits obtained from the project.

Absent monetary values for the environmental impacts of a project, the accepted practice is “to stop at the identification stage and simply list the range of effects” (Curry and Weiss 2000, 240).
This leaves it to the decisionmakers to interpret the significance of the unmonetized effects in deciding whether to proceed with the project. For example, the projected economic internal rate of return in the Mawella Lagoon subproject was 7 percent, well below ADB’s standard of 12 percent, and below even the 10 percent sometimes allowed for projects with substantial unknown monetary values. The project analysts noted that “the most important benefit [is] … the area for turtle nesting, which has not been valued” (ADB 1999c, 203). (The Mawella Lagoon was only one component of the Coastal Resource Management Project, though. The projected rate of return on the entire project was 15 percent, so the project analysts did not have to appeal to unquantified benefits to justify the whole project.)

If a project cannot be justified in terms of its monetary or economic values alone, and if it is sound in every other respect, then the response of the decisionmakers—regardless of whether they accept or reject the project—determines what Dasgupta and Pearce (1971, 112-5) call the “implicit” value of the intangible effects. For example, at a 12 percent discount rate, the net present value of the Mawella Lagoon subproject was -US$107,000. Under standard ADB practice, projects are considered to have ample economic justification if the costs are less than or equal to the benefits at a 12 percent discount rate. So in accepting the Mawella Lagoon subproject, ADB’s Board of Directors implicitly assigned a net present value of at least US$107,000 to the unquantified values, namely the turtles’ nesting area. (The response of decisionmakers need not establish an implicit value if they reject a project for reasons beyond the economics, for example, if they thought the implementing agency was not capable.)

The prime responsibility of the project analyst is, of course, to facilitate the decision making process. Since decisionmakers cannot avoid establishing implicit values for sound projects with intangible effects, it should be the analyst’s responsibility to calculate the potential implicit value. Mishan (1982) recommended what he termed a “contingency calculation” for projects with intangible effects (that is, effects not expressed in monetary terms). Given the contingency calculation, decisionmakers can then apply “common sense, values from the literature, or other rapid analytic methods … to make a judgment about whether such a switch-point is indeed plausible” (ADB 1996, 157). (This paper will use the term “contingency calculation” instead of “switch-point”, since the latter term is commonly used in sensitivity analysis.)

Making useful contingency calculations, however, requires some craft from the analyst. For example, the amount required to equate costs and benefits at a 12 percent discount rate is not very useful, since this requires decisionmakers to compare the unmonetized stream of impacts with the net present value of the project aggregated over the entire affected population. To evaluate the Mawella Lagoon subproject, ADB’s Board of Directors would have been forced to decide—without any further information—whether Sri Lankans as a whole valued the turtles’ nesting area at a lump sum present value of US$107,000.

It is probably much easier for decisionmakers (or anyone else) to think of the implicit value as an annual value per household, or per capita. For example, instead of asking whether all Sri Lankans would be willing to pay the required lump sum, ADB’s Board of Directors could have considered whether an individual household would be willing to pay a given amount per year, with the amount calculated to be just sufficient to justify the project.

Simple ways to make such a calculation, though, would be inaccurate for most projects. For example, for the Mawella Lagoon subproject, the analyst could have expressed the required lump sum as an amount per household, by dividing the lump sum by the number of households; dividing the amount per household by the duration of the project gives an annual value. But this simple
calculation would not produce the minimum value required to make the net present value of the project positive, if

(i) population is not constant over the duration of the project;
(ii) income or environmental preferences (or both) are not constant over the duration of the project;
(iii) the project has an indefinite life span (that is, the project generates sustainable environmental benefits); or
(iv) the project involves construction or development of facilities, so that the project’s benefits do not start immediately.

Any of these four factors can affect contingency calculations. And for most projects, one would expect that all four factors could apply.

This paper develops and demonstrates a method of contingency calculations that takes into account all of four factors above. The next section develops an economic model for the contingency calculation, and presents a relatively simple formula that a project analyst could use for a variety of different projects. To demonstrate application, the formula is applied to the Mawella Lagoon subproject. The paper concludes with recommendations for the application and interpretation of the contingency calculation.

II. An Economic Model of Contingency Calculations for Environmental Impacts

This section describes the reasoning behind the particular contingency calculation proposed in this paper. The reasoning aims to incorporate into the net present value the four factors mentioned above, and then to express the net present value in terms of an annual value per household. The reasoning is most conveniently expressed in mathematical terms, as follows.

A. Mathematical Derivation of the Model

Assume that monetary values exist for all environmental impacts. With unlimited time and resources, a project analyst could always obtain these values. But within realistic limits on time and resources, some or all of the monetary values must remain unknown to the analyst.

If, instead of merely unknown values, a project has impacts that cannot be expressed in monetary values—even without time or budget constraints—then the decision on whether to proceed with the project is a social or political one, to be determined through public discourse. In that case, economic values—and the method proposed here—can, at least, inform the debate. One could use the term “intangibles” to refer to both impacts that cannot be expressed in monetary terms, as well as impacts with unknown monetary values. Since the focus here is on unknown monetary values, this paper will use the term “unknown values” to refer to what might in general be called “intangibles”.

Let $V$ denote the “true” net present value of a project, including both the known and unknown monetary values. Then by definition,
where $V_K$ denotes the net present value for all known values (environmental or otherwise), and $V_U$ denotes the net present value for the unknown values. For example, $V_K = -US$107,000 for the Mawella Lagoon subproject.

Assume that the project is acceptable if $V \geq 0$ at the discount rate $r$ (in ADB practice $r = 12$ percent). Equivalently, the project is acceptable if

$$V_U \geq -V_K.$$

Expression (2) means that a project is acceptable if the net present value of the unknown monetary values is believed to exceed the negative net present value of the known values.

The basic idea underlying expression (2) is incorporated into ADB’s Guidelines for the Economic Analysis of Projects (ADB 1997). The Guidelines state that ADB would expect to accept projects with an economic internal rate of return “between 10 and 12 percent for which additional unvalued benefits can be demonstrated, and where they are expected to exceed unvalued costs” (ADB 1997, 37). Translating this guideline into the terminology and notation used here, ADB’s policy is to accept a project if the net present value of the known values is negative at a 12 percent discount rate but positive at a 10 percent discount rate ($V_K < 0$), and if the project analyst knows that the net present value of the unknown values is positive at a 10 percent discount rate ($V_U \geq 0$).

ADB’s guidelines, however, are only a necessary and not a sufficient condition for a project to satisfy expression (2). If the known values are negative at a 12 percent discount rate, the unknown values must be positive, but they must also be greater than the absolute value of the known values. If additional information on the unknown values is not available, then translating expression (2) into annual values per household may help decisionmakers interpret the significance of the unknown values.

Let $u_{ht}$ denote the unknown monetary values for household $h$ at time $t$, and let $P_t$ denote the number of affected households at time $t$. (Note that $u_{ht}$ is a net benefit, and so may be positive or negative.) Then the net present value of the unknown monetary values is

$$V_U = \sum_t \left( \sum_h u_{ht} / P_t \right)/(1+r)^t = \sum_t P_t \left( \sum_h u_{ht} / P_t \right)(1+r)^t = \sum_t P_t u_t / (1+r)^t,$$

where

$$u_t = \sum_h u_{ht} / P_t$$

is the average value per household at time $t$; each summation starts at $t = 0$. (Note that this procedure is not affected by the distribution of values across households, which is typical in standard benefit-cost analysis.)

Now suppose that population and the unknown values change steadily at an exponential rate. This is a convenient but nonetheless reasonable assumption, given that the method aims to be simple and easy to apply. Population does tend to follow a smooth and increasing exponential path, at least over the short run. Income (if not environmental values) also tends to follow a smooth and increasing exponential path, though over the long run. One could avoid this assumption and instead...
introduce a parameter for the percentage change every year. The reasoning below would not change, but the information and analytical burden would greatly increase, with possibly little return to the decision making process.

Suppose that the environmental benefits start at time $T_1$ (say, upon completion of the project) and continue until time $T_2$ (which may be forever); in this case, $u_t = 0$ for $t = 0, 1, \ldots, (T_1 - 1)$. Let $g_p$ be the average population growth in the affected area (or more specifically, growth in the number of households), and let $g_u$ be the average growth in the unknown values. Then the expected number of households at time $t+T_1$ is

\[ P_{T_1+t} = P_{T_1}(1+g_p)^t, \]

and the expected unknown value per household is

\[ u_{T_1+t} = u_{T_1}(1+g_u)^t. \]

Substituting expressions (5) and (6) into expression (3) and simplifying gives

\[ V_U = P_{T_1}u_{T_1}/(1+r)^{T_1}\sum[(1+g_p)(1+g_u)/(1+r)^t], \]

where now the summation extends from 0 to $(T_2-T_1)$. Defining

\[ \delta = (1+g_p)(1+g_u)/(1+r), \]

the value of the summation in expression (7) is

\[ \sum\delta^t = (1 - \delta^{T_2-T_1+1})/(1 - \delta). \]

Hence,

\[ V_U = P_{T_1}u_{T_1}(1 - \delta^{T_2-T_1+1})/[(1 - \delta)(1+r)^{T_1}]. \]

One can use expression (10) to find an equivalent and perhaps more convenient condition for the acceptability of a project with unknown monetary values. Substituting expression (10) into expression (2) and solving for $u_{T_1}$ gives the annual value per household at the start of the stream of benefits (that is, at time $T_1$):

\[ u_{T_1} > (-V_K/P_{T_1})(1+r)^{T_1}(1 - \delta)/(1 - \delta^{T_2-T_1+1}). \]

Note that $u_{T_1}$ is the actual value at time $T_1$, and not the present value of the value at $T_1$ (unless $T_1 = 0$, as in the example below); one could convert to the present value per household by discounting expression (11) by the factor $(1+r)^{T_1}$. If decisionmakers take financial rather than economic values as their standard of comparison, then interpreting the contingency calculation might be easier by converting it from economic to financial terms.
One can give a simple economic interpretation of expression (11), at the price of a few simplifying assumptions. Ignore the growth rate of population and household values \((g_p = 0\) and \(g_u = 0)\), and suppose that the environmental benefits occur in perpetuity \((\delta^{T_2-T_1+1} = 0)\). Then expression (11) becomes

\[
(12) \quad u_{T_1} \geq \frac{1}{r} \left( -\frac{V_K}{P_{T_1}} (1+r)^{T_1-1} \right).
\]

Suppose the known net present value of the project is negative \((V_K < 0)\), and the project is known to have beneficial environmental impacts \((V_U > 0)\). Then the project is effectively an investment in environmental quality, with the per household cost of the investment given by \(-\frac{V_K}{P_{T_1}}\). The investment starts to pay off at time \(T_1\), so to be a worthy investment, by time \(T_1\) its initial value \((-\frac{V_K}{P_{T_1}})\) must grow by the factor \((1+r)^{T_1-1}\). At time \(T_1\), the “asset” with value \(-\frac{V_K}{P_{T_1}}(1+r)^{T_1-1}\) would have to start generating a return at the rate \(r\).

Suppose instead that the known net present value of the project is positive \((V_K > 0)\), and that the project has adverse environmental impacts \((V_U < 0)\). Then one can regard the project as a debt incurred by the affected population, with a grace period of \(T_1\) years. At time \(T_1\), the debt would grow to \(-\frac{V_K}{P_{T_1}}(1+r)^{T_1}\), at which point the households must be willing and able to pay the cost of interest in perpetuity, at rate \(r\).

The effect of the growth rate of population and household values is almost the same as the effect of reducing the discount rate. With a few algebraic manipulations, one can show that

\[
(13) \quad 1 - \delta \equiv \frac{[r - \{(1+g_p)(1+g_u) - 1\}]}{(1+r)}.
\]

Then (assuming as above that \(\delta^{T_2-T_1+1} = 0\)) one can show that expression (11) becomes

\[
(14) \quad u_{T_1} \geq \frac{1}{r} \left[ \frac{1}{(1+r)^{T_1-1}}\left( -\frac{V_K}{P_{T_1}} \right) \right].
\]

Since both \(g_p\) and \(g_u\) are apt to be close to zero (that is, less than 0.05), the product \((1+g_p)(1+g_u)\) is apt to be close to one, and the difference \((1+g_p)(1+g_u) - 1\) is apt to be close to zero. So when the parameters \(g_p\) and \(g_u\) are positive, the “interest rate” on the investment or the debt decreases.

**B. Application of the Model**

As mentioned above, the analysts did not measure the monetary value of protecting the turtles’ nesting area, although at least part of the value can be expressed in monetary terms. Sri Lankans collect turtle eggs either for consumption or for sale. The market for turtle eggs includes privately owned turtle hatcheries, which charge admission to the hatcheries and sell newly hatched turtles for release into the wild. The impact of preserving the nesting area is at least partially captured by the market price of turtle eggs, and the profits of the private turtle hatcheries.

Despite the potential for measuring the monetary value of the nesting area, ADB’s Board of Directors was nonetheless required to decide whether to fund the project with no further information on the value. The contingency calculation developed in this paper might have facilitated the decision, as follows.
Applying the contingency calculation in expression (11) requires seven pieces of information:

(i) net present value of the known values \( (V_K) \);
(ii) discount rate \( (r) \);
(iii) length of time until the benefits start \( (T_1) \);
(iv) duration of the benefits \( (T_2 - T_1) \);
(v) number of affected households at the time the benefits start \( (P_{T1}) \);
(vi) growth rate of the population \( (g_p) \); and
(vii) growth rate of the unknown values per household \( (g_u) \).

The first four values would come out of the standard project analysis, so only the last three require additional effort in collecting information.

Table 1 shows each of these values. The net present value of the known benefits \( (V_K) \) is -US$107,000 at a discount rate \( (r) \) of 12 percent. The benefits of preserving the turtles’ nesting area would start immediately \( (T_1 = 0) \), and the nesting area would be protected indefinitely \( (T_2 - T_1 \rightarrow \infty) \). The estimated population of Sri Lanka in 1999 (when the project was analyzed) was 19.6 million (ADB 1999a). The United Nations Economic and Social Commission for Asia and the Pacific reported that the average household size in Sri Lanka in the 1980s was 5.2 (UNESCAP 1999). Holding the mean household size fixed at 5.2 gives 3.84 million households in Sri Lanka in 1999. The annual population growth rate in 2000 was 1.7 percent (ADB 1999a). From 1995 to 1999, per capita real GNP in Sri Lanka grew at an average annual rate of 2.8 percent (ADB 1999a); I assume that the growth rate of Sri Lankans’ interest in preserving the turtles’ nesting area is the same as the growth of real GNP.

<table>
<thead>
<tr>
<th>( V_K )</th>
<th>( r )</th>
<th>( T_1 )</th>
<th>( T_2 - T_1 )</th>
<th>( P_{T1} )</th>
<th>( g_p )</th>
<th>( g_u )</th>
</tr>
</thead>
<tbody>
<tr>
<td>-US$107,000</td>
<td>0.12</td>
<td>0</td>
<td>( \infty )</td>
<td>3.84 million</td>
<td>0.017</td>
<td>0.028</td>
</tr>
</tbody>
</table>

Substituting the values in Table 1 into expression (11) gives a contingency calculation of US$0.002 for the turtles’ nesting area. That is, at a 12 percent discount rate, the project would have a positive net present value if, at the start of the project, the value per household of the turtles’ nesting area was less than one cent per year. Sri Lanka is a relatively poor country; in 1999, GNP per household was US$4,230 (ADB 1999a), and Sri Lanka is not known to have an especially vigorous environmental movement. Despite these facts, it is a fair guess that Sri Lankans would be willing to sacrifice less than one cent a year to protect the turtles’ nesting area. (Note that this is not a hypothetical sacrifice, as in a contingent valuation study, since the project is financed by a loan from ADB, which Sri Lankans have to repay with interest.)

The value per household does not exceed one cent per year for a wide range of values in the four key parameters \( (V_K, P_{T1}, g_p, \text{ and } g_u) \). Figure 1 shows the percentage effect on the contingency calculation for changes in each parameter, with the changes ranging from +50 to -50 percent. The contingency calculation changes by at most 100 percent (i.e., it is still much less than one cent per year) for a 50 percent change in any of the four key parameters.
III. Recommendations on Applying the Model in Project Analysis

The method proposed in this paper converts the uncertainty in environmental values into the annual value per household that is just sufficient to justify the project. The method is applicable whenever information on environmental values is limited, and whenever the project is not already justified on other grounds.

When the method is applied at the end of an analysis, as in the example presented above, it translates the decision to accept or reject a project into an implicit value for the unknown environmental values. One could use this method to interpret decisions, or better yet, as a guide for decisionmakers to use in the process of deliberation. The method tells decisionmakers that, if they accept the project, they are implicitly assigning an amount greater than the given value to the unknown environmental values; if they reject the project, they are implicitly assigning a value less than the given value. This interpretation assumes that the environmental values are the only unknown ones. In general, the implicit value would apply to the whole set of unknown values, and in practice there can indeed be more than one kind of unknown value.

Mishan (1982) warned against considering contingency calculations like this as a part of benefit-cost analysis. The analyst's job is to assemble and analyze the best available information, subject to time and budget constraints, and then present the information in a way that is most accessible to decisionmakers. This paper has argued that the analysis and presentation should include contingency calculations whenever a project includes intangible environmental impacts that could affect the decision. The actual implicit value, though, is the result of the decision making process,
and not the benefit-cost analysis. The implicit value thus reflects the preferences and perceptions of the decisionmakers, which are not necessarily the same as those of the society.

The method can also be applied at the beginning of an analysis. Tisdell (1993, 105) notes that “the scope for bounded rationality in project evaluation is much greater than is commonly supposed … as soon as it is established that certain projects have a return above a particular level, they should be accepted as satisfactory.” In that case, the contingency calculation proposed here could provide the project analyst with a target to shoot for in conducting an analysis, thereby improving the efficiency of the analysis.

The method is similar to the “safe minimum standard” principle, which is another approach to decision making in the presence of unknown environmental values (Ciriacy-Wantrup 1952; see also Hanley et al. 1997). According to this approach, if the value of an environmental resource is unknown, then the resource is not allowed to fall below the “safe minimum standard” unless the opportunity costs of conserving the resource are “too high”. An economist would estimate the opportunity cost, and the decisionmakers would judge whether that cost is “too high”.

If the discount rate in the implicit value calculation is the social rate of return on competing projects, then the contingency calculation proposed here also gives a kind of opportunity cost. The contingency calculation could therefore augment the safe-minimum standard approach, by expressing the opportunity cost in terms of an annual value per household.

Finally, the discussion here has focused on contingency calculations for environmental impacts, but there is really nothing in the discussion that applies uniquely to the environment. The method could also be applied to projects with other kinds of values that are hard to measure, such as health or education projects.
References


PUBLICATIONS FROM THE ECONOMICS AND RESEARCH DEPARTMENT

ERD TECHNICAL NOTE SERIES (TNS)
(Published in-house; Available through ADB Office of External Relations; Free of Charge)

No. 1. Contingency Calculations for Environmental Impacts with Unknown Monetary Values
—David Dole
February 2002

ERD WORKING PAPER SERIES (WPS)
(Published in-house; Available through ADB Office of External Relations; Free of Charge)

No. 1. Capitalizing on Globalization
—Barry Eichengreen, January 2002

No. 2. Policy-based Lending and Poverty Reduction: An Overview of Processes, Assessment and Options
—Richard Bolt and Manabu Fujimura
January 2002

No. 3. The Automotive Supply Chain: Global Trends and Asian Perspectives
—Francisco Veloso and Rajiv Kumar
January 2002

No. 4. International Competitiveness of Asian Firms: A Conceptual and Research Framework
—Rajiv Kumar and Doren Chadee
February 2002

No. 5. The International Competitiveness of Asian Economies in the Apparel Commodity Chain
—Gary Gereffi
February 2002

No. 6. Monetary and Financial Cooperation in East Asia: The Chiang Mai Initiative and Beyond
—Pradumna B. Rana
February 2002

No. 7. Probing Beneath Cross-national Averages: Poverty, Inequality, and Growth in the Philippines
—Arsenio M. Balisacan and Ernesto M. Pernia
February 2002

MONOGRAPH SERIES
(Published in-house; Available through ADB Office of External Relations; Free of charge)

EDRC REPORT SERIES (ER)

No. 1 ASEAN and the Asian Development Bank
—Seiji Naya, April 1982

No. 2 Development Issues for the Developing East and Southeast Asian Countries and International Cooperation
—Seiji Naya and Graham Abbott, April 1982

No. 3 Aid, Savings, and Growth in the Asian Region
—J. Malcolm Dowling and Ulrich Hiemenz, April 1982

No. 4 Development-oriented Foreign Investment and the Role of ADB
—Kiyoshi Kajima, April 1982

No. 5 The Multilateral Development Banks and the International Economy’s Missing Public Sector
—John Lewis, June 1982

No. 6 Notes on External Debt of DMCs
—Evelyn Go, July 1982

No. 7 Grant Element in Bank Loans
—Dal Hyun Kim, July 1982

No. 8 Shadow Exchange Rates and Standard Conversion Factors in Project Evaluation
—Peter Warr, September 1982

No. 9 Small and Medium-Scale Manufacturing Establishments in ASEAN Countries: Perspectives and Policy Issues
—Mathias Bruch and Ulrich Hiemenz, January 1983

No. 10 A Note on the Third Ministerial Meeting of GATT
—Jungsoo Lee, January 1983

No. 11 Macroeconomic Forecasts for the Republic of China, Hong Kong, and Republic of Korea
—J.M. Dowling, January 1983

No. 12 ASEAN: Economic Situation and Prospects
—Seiji Naya, March 1983

No. 13 The Future Prospects for the Developing Countries of Asia
—Seiji Naya, March 1983
No. 14 Energy and Structural Change in the Asia-Pacific Region, Summary of the Thirteenth Pacific Trade and Development Conference
—Seiji Naya, March 1983

No. 15 A Survey of Empirical Studies on Demand for Electricity with Special Emphasis on Price Elasticity of Demand
—Wisarn Pupphavesa, June 1983

No. 16 Determinants of Paddy Production in Indonesia: 1972-1981—A Simultaneous Equation Model Approach
—T.K. Jayaraman, June 1983

No. 17 The Philippine Economy: Economic Forecasts for 1983 and 1984
—J.M. Dowling, E. Go, and C.N. Castillo, June 1983

No. 18 Economic Forecast for Indonesia

No. 19 Relative External Debt Situation of Asian Developing Countries: An Application of Ranking Method
—Jungsoo Lee, June 1983

No. 20 Relative External Debt Situations of Asian Developing Countries: An Application of Ranking Method
—William James and Teresita Ramirez, July 1983

No. 21 Inflationary Effects of Exchange Rate Changes in Nine Asian LDCs
—Pradumna B. Rana and J. Malcolm Dowling, Jr., December 1983

No. 22 Effects of External Shocks on the Balance of Payments, Policy Responses, and Debt Problems of Asian Developing Countries
—Seiji Naya, December 1983

No. 23 Changing Trade Patterns and Policy Issues: The Prospects for East and Southeast Asian Developing Countries
—Seiji Naya and Ulrich Hiemenz, February 1984

No. 24 Small-Scale Industries in Asian Economic Development: Problems and Prospects
—Seiji Naya, February 1984

No. 25 A Study on the External Debt Indicators
—Jungsoo Lee and Clarita Barretto, February 1984

No. 26 Alternatives to Institutional Credit Programs in the Agricultural Sector of Low-Income Countries
—Jennifer Sour, March 1984

No. 27 Economic Scene in Asia and Its Special Features
—Kedar N. Kohli, November 1984

No. 28 The Effect of Terms of Trade Changes on the Balance of Payments and Real National Income of Asian Developing Countries
—Jungsoo Lee and Latigara Labios, January 1985

—Yoshihiro Iwasaki, February 1985

No. 30 Sources of Balance of Payments Problem in the 1970s: The Asian Experience
—Pradumna Rana, February 1985

No. 31 India's Manufactured Exports: An Analysis of Supply Sectors
—Ifzel Ali, February 1985

No. 32 Meeting Basic Human Needs in Asian Developing Countries
—Jungsoo Lee and Emma Banaria, March 1985

No. 33 The Impact of Foreign Capital Inflow in Investment and Economic Growth in Developing Asia
—Evelyn Go, May 1985

No. 34 The Climate for Energy Development in the Pacific and Asian Region: Priorities and Perspectives
—V.V. Desai, April 1986

No. 35 Impact of Appreciation of the Yen on Developing Member Countries of the Bank
—Jungsoo Lee, Pradumna Rana, and Ifzel Ali, May 1986

No. 36 Smuggling and Domestic Economic Policies in Developing Countries
—A.H.M.N. Chowdhury, October 1986

No. 37 Public Investment Criteria: Economic Internal Rate of Return and Equalizing Discount Rate
—Ifzel Ali, November 1986

No. 38 Review of the Theory of Neoclassical Political Economy: An Application to Trade Policies
—M.G. Quibria, December 1986

No. 39 Factors Influencing the Choice of Location: Local and Foreign Firms in the Philippines
—E.M. Pernia and A.N. Herrin, February 1987

No. 40 A Demographic Perspective on Developing Asia and Its Relevance to the Bank
—E.M. Pernia, May 1987

No. 41 Emerging Issues in Asia and Social Cost Benefit Analysis
—I. Ali, September 1988

No. 42 Shifting Revealed Comparative Advantage: Experiences of Asian and Pacific Developing Countries
—P.B. Rana, November 1988

No. 43 Agricultural Price Policy in Asia: Issues and Areas of Reforms
—I. Ali, November 1988

No. 44 Service Trade and Asian Developing Economies
—M.G. Quibria, October 1989

No. 45 A Review of the Economic Analysis of Power Projects in Asia and Identification of Areas of Improvement
—I. Ali, November 1989

No. 46 Growth Perspective and Challenges for Asia: Areas for Policy Review and Research
—I. Ali, November 1989

No. 47 An Approach to Estimating the Poverty Alleviation Impact of an Agricultural Project
—I. Ali, January 1990

No. 48 Economic Growth Performance of Indonesia, the Philippines, and Thailand: The Human Resource Dimension
—E.M. Pernia, January 1990

No. 49 Foreign Exchange and Fiscal Impact of a Project: A Methodological Framework for Estimation
—I. Ali, February 1990

No. 50 Public Investment Criteria: Financial and Economic Internal Rates of Return
—I. Ali, April 1990

No. 51 Evaluation of Water Supply Projects: An Economic Framework
—Arlene M. Tadle, June 1990

No. 52 Interrelationship Between Shadow Prices, Project Investment, and Policy Reforms: An Analytical Framework
—I. Ali, November 1990

No. 53 Issues in Assessing the Impact of Project and Sector Adjustment Lending
No. 54  Some Aspects of Urbanization and the Environment in Southeast Asia  
—Ernesto M. Pernia, January 1991

No. 55  Financial Sector and Economic Development: A Survey  
—Jungsoo Lee, September 1991

No. 56  A Framework for Justifying Bank-Assisted Education Projects in Asia: A Review of the Socioeconomic Analysis and Identification of Areas of Improvement  
—Etienne Van De Walle, February 1992

No. 57  Medium-term Growth-Stabilization Relationship in Asian Developing Countries and Some Policy Considerations  
—Yun-Hwan Kim, February 1993

No. 58  Urbanization, Population Distribution, and Economic Development in Asia  
—Ernesto M. Pernia, September 1991

No. 59  The Need for Fiscal Consolidation in Nepal: The Results of a Simulation  
—Filippo di Mauro and Ronald Antonio Butiong, September 1993

No. 60  A Computable General Equilibrium Model of Nepal  
—Timothy Buehrer and Filippo di Mauro, October 1993

No. 61  The Role of Government in Export Expansion in the Republic of Korea: A Revisit  
—Yun-Hwan Kim, February 1994

No. 62  Rural Reforms, Structural Change, and Agricultural Growth in the People’s Republic of China  
—Bo Lin, August 1994

No. 63  Incentives and Regulation for Pollution Abatement with an Application to Waste Water Treatment  

No. 64  Saving Transitions in Southeast Asia  
—Frank Harrigan, February 1996

No. 65  Total Factor Productivity Growth in East Asia: A Critical Survey  
—Jesus Felipe, September 1997

No. 66  Foreign Direct Investment in Pakistan: Policy Issues and Operational Implications  
—Asafique H. Khan and Yun-Hwan Kim, July 1999

No. 67  Fiscal Policy, Income Distribution and Growth  
—Sailesh K. Jha, November 1999

---

ECONOMIC STAFF PAPERS (ES)

No. 1  International Reserves: Factors Determining Needs and Adequacy  
—Evelyn Go, May 1981

No. 2  Domestic Savings in Selected Developing Asian Countries  
—Basil Moore, assisted by A.H.M. Nuruddin Choedhury, September 1981

No. 3  Changes in Consumption, Imports and Exports of Oil Since 1973: A Preliminary Survey of the Developing Member Countries of the Asian Development Bank  
—Dal Hyun Kim and Graham Abbott, September 1981

No. 4  By-Passed Areas, Regional Inequalities, and Development Policies in Selected Southeast Asian Countries  
—William James, October 1981

No. 5  Asian Agriculture and Economic Development  
—William James, March 1982

No. 6  Inflation in Developing Member Countries: An Analysis of Recent Trends  

No. 7  Industrial Growth and Employment in Developing Asian Countries: Issues and Perspectives for the Coming Decade  
—Ulrich Hiemenz, March 1982

—Burnham Campbell, April 1982

No. 9  Petrodollar Recycling 1973-1980. Part II: Debt Problems and an Evaluation of Suggested Remedies  
—Burnham Campbell, September 1982

No. 10  Credit Rationing, Rural Savings, and Financial Policy in Developing Countries  
—William James, September 1982

No. 11  Small and Medium-Scale Manufacturing Establishments in ASEAN Countries: Perspectives and Policy Issues  
—Mathias Bruch and Ulrich Hiemenz, March 1983

—Burnham Campbell, September 1982

No. 13  Income Distribution and Economic Growth in Developing Asian Countries  
—J. Malcolm Dowling and David Soo, March 1983

No. 14  Long-Run Debt-Servicing Capacity of Asian Developing Countries: An Application of Critical Interest Rate Approach  
—William James, June 1983

No. 15  External Shocks, Energy Policy, and Macroeconomic Performance of Asian Developing Countries: A Policy Analysis  
—William James, July 1983

No. 16  The Impact of the Current Exchange Rate System on Trade and Inflation of Selected Developing Member Countries  
—Ramananda Rana, September 1983

No. 17  Inflation in Developing Member Countries: An Analysis of Recent Trends  

No. 18  Long-Run Debt-Servicing Capacity of Asian Developing Countries: An Application of Critical Interest Rate Approach  
—William James, March 1983

No. 19  The Transition to an Industrial Economy in Monsoon Asia  
—Harry T. Oshima, October 1983
No. 21 The Significance of Off-Farm Employment and Incomes in Post-War East Asian Growth
—Harry T. Oshima, January 1984

No. 22 Income Distribution and Poverty in Selected Asian Countries
—John Malcolm Dowling, Jr., November 1984

No. 23 ASEAN Economies and ASEAN Economic Cooperation
—Narongchai Akrasanee, November 1984

No. 24 Economic Analysis of Power Projects
—Nitin Desai, January 1985

No. 25 Exports and Economic Growth in the Asian Region
—Pradumna Rana, February 1985

No. 26 Patterns of External Financing of DMCs
—E. Go, May 1985

No. 27 Industrial Technology Development in the Republic of Korea
—S.Y. Lo, July 1985

No. 28 Risk Analysis and Project Selection: A Review of Practical Issues
—J.K. Johnson, August 1985

No. 29 Rice in Indonesia: Price Policy and Comparative Advantage
—I. Ali, January 1986

No. 30 Effects of Foreign Capital Inflows on Developing Countries of Asia
—Jungsoo Lee, Pradumna B. Rana, and Yoshihiro Iwasaki, April 1986

No. 31 Economic Analysis of the Environmental Impacts of Development Projects
—John A. Dixon et al., EAPI, East-West Center, August 1986

No. 32 Science and Technology for Development: Role of the Bank
—Kedar N. Kohli and Ifzal Ali, November 1986

No. 33 Satellite Remote Sensing in the Asian and Pacific Region
—Mohan Sundara Rajan, December 1986

No. 34 Changes in the Export Patterns of Asian and Pacific Developing Countries: An Empirical Overview
—Pradumna B. Rana, January 1987

No. 35 Agricultural Price Policy in Nepal
—Gerald C. Nelson, March 1987

No. 36 Implications of Falling Primary Commodity Prices for Agricultural Strategy in the Philippines
—I. Ali, September 1987

No. 37 Determining Irrigation Charges: A Framework
—Prabhakar B. Ghate, October 1987

No. 38 The Role of Fertilizer Subsidies in Agricultural Production: A Review of Select Issues
—M.G. Quibria, October 1987

No. 39 Domestic Adjustment to External Shocks in Development Asia
—Jungsoo Lee, October 1987

No. 40 Improving Domestic Resource Mobilization through Financial Development: Indonesia
—Philip Erquiaga, November 1987

No. 41 Recent Trends and Issues on Foreign Direct Investment in Asian and Pacific Developing Countries
—I. Ali, Rana, March 1988

No. 42 Manufactured Exports from the Philippines: A Sector Profile and an Agenda for Reform
—I. Ali, September 1988

No. 43 A Framework for Evaluating the Economic Benefits of Power Projects
—I. Ali, August 1989

No. 44 Promotion of Manufactured Exports in Pakistan
—Jungsoo Lee and Yoshihiro Iwasaki, September 1989

No. 45 Education and Labor Markets in Indonesia: A Sector Survey
—Ernesto M. Pernia and David N. Wilson, September 1989

No. 46 Industrial Technology Capabilities and Policies in Selected ADCs
—Hiroshi Kakazu, June 1990

No. 47 Designing Strategies and policies for Managing Structural Change in Asia
—I. Ali, June 1990

No. 48 The Completion of the Single European Community Market in 1992: A Tentative Assessment of its Impact on Asian Developing Countries
—J.P. Verbiest and Min Tang, June 1991

No. 49 Economic Analysis of Investment in Power Systems
—I. Ali, June 1991

No. 50 External Finance and the Role of Multilateral Financial Institutions in South Asia: Changing Patterns, Prospects, and Challenges
—Jungsoo Lee, November 1991

No. 51 The Gender and Poverty Nexus: Issues and Policies
—M.G. Quibria, November 1992

No. 52 The Role of the State in Economic Development: Theory, the East Asian Experience, and the Malaysian Case
—Jason Brown, December 1993

No. 53 The Economic Benefits of Potable Water Supply Projects to Households in Developing Countries
—Dale Whittington and Venkateswarlu Swarna, January 1994

No. 54 Growth Triangles: Conceptual Issues and Operational Problems
—Min Tang and Myo Thant, February 1994

No. 55 The Emerging Global Trading Environment and Developing Asia
—Arvind Panagariya, M.G. Quibria, and Narhari Rao, July 1996

No. 56 Aspects of Urban Water and Sanitation in the Context of Rapid Urbanization in Developing Asia
—Ernesto M. Pernia and Stella LF. Alabastro, September 1997

No. 57 Challenges for Asia’s Trade and Environment

No. 58 Economic Analysis of Health Sector Projects: A Review of Issues, Methods, and Approaches
—Ramesh Adhikari, Paul Gertler, and Anneli Lagman, March 1999

No. 59 The Asian Crisis: An Alternate View
—Rajiv Kumar and Bibek Debroy, July 1999

No. 60 Social Consequences of the Financial Crisis in Asia
—James C. Knowles, Ernesto M. Pernia, and Mary Racelis, November 1999
**OCCASIONAL PAPERS (OP)**

<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
<th>Author(s)</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Poverty in the People's Republic of China: Recent Developments and Scope for Bank Assistance</td>
<td>K.H. Moinuddin</td>
<td>November 1992</td>
</tr>
<tr>
<td>4</td>
<td>Fiscal Deficits and Current Account Imbalances of the South Pacific Countries: A Case Study of Vanuatu</td>
<td>T.K. Jayaraman</td>
<td>December 1993</td>
</tr>
<tr>
<td>5</td>
<td>Reforms in the Transitional Economies of Asia</td>
<td>Pradumna B. Rana</td>
<td>December 1993</td>
</tr>
<tr>
<td>7</td>
<td>Sustainable Development Environment and Poverty Nexus</td>
<td>K.F. Jalal</td>
<td>December 1993</td>
</tr>
<tr>
<td>9</td>
<td>Interest Rate Deregulation: A Brief Survey of the Policy Issues and the Asian Experience</td>
<td>Carlos J. Glover</td>
<td>July 1994</td>
</tr>
</tbody>
</table>

**STATISTICAL REPORT SERIES (SR)**

<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
<th>Author(s)</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Multivariate Statistical and Graphical Classification Techniques Applied to the Problem of Grouping Countries</td>
<td>I.P. David and D.S. Maligalig</td>
<td>March 1985</td>
</tr>
<tr>
<td>3</td>
<td>Gross National Product (GNP) Measurement Issues in South Pacific Developing Member Countries of ADB</td>
<td>S.G. Tiwari</td>
<td>September 1985</td>
</tr>
<tr>
<td>4</td>
<td>Estimates of Comparable Savings in Selected DMCs</td>
<td>Hannoto Sigit</td>
<td>December 1985</td>
</tr>
<tr>
<td>5</td>
<td>Keeping Sample Survey Design and Analysis Simple</td>
<td>I.P. David</td>
<td>December 1985</td>
</tr>
<tr>
<td>6</td>
<td>External Debt Situation in Asian</td>
<td>I.P. David</td>
<td>March 1986</td>
</tr>
<tr>
<td>7</td>
<td>Study of GNP Measurement Issues in the South Pacific Developing Member Countries</td>
<td>I.P. David and Jungsoo Lee</td>
<td>March 1986</td>
</tr>
<tr>
<td>8</td>
<td>Study of GNP Measurement Issues in the South Pacific Developing Member Countries. Part I: Existing National Accounts of SPDMCs–Analysis of Methodology and Application of SNA Concepts</td>
<td>P. Hodgkinson</td>
<td>October 1986</td>
</tr>
<tr>
<td>9</td>
<td>Survey of the External Debt Situation in Asian Developing Countries, 1985</td>
<td>Jungsoo Lee and I.P. David</td>
<td>April 1987</td>
</tr>
</tbody>
</table>
No. 11 Changing Pattern of Financial Flows to Asian and Pacific Developing Countries
—Jungsoo Lee and I.P. David, March 1989

No. 12 The State of Agricultural Statistics in Southeast Asia
—I.P. David, March 1989

—Jungsoo Lee and I.P. David, July 1989

No. 14 A Survey of the External Debt Situation in Asian and Pacific Developing Countries: 1988-1989
—Jungsoo Lee, May 1990

No. 15 A Survey of the External Debt Situation in Asian and Pacific Developing Countries: 1989-1992
—Min Tang, June 1991

No. 16 Recent Trends and Prospects of External Debt Situation and Financial Flows to Asian and Pacific Developing Countries
—Min Tang and Aludia Pardo, June 1992

No. 17 Purchasing Power Parity in Asian Developing Countries: A Co-Integration Test
—Min Tang and Ronald Q. Butiong, April 1994

No. 18 Capital Flows to Asian and Pacific Developing Countries: Recent Trends and Future Prospects
—Min Tang and James Villafuerte, October 1995

SPECIAL STUDIES, COMPLIMENTARY (SSC)
(Published in-house; Available through ADB Office of External Relations; Free of Charge)

1. Improving Domestic Resource Mobilization Through Financial Development: Overview September 1985
5. Financing Public Sector Development Expenditure in Selected Countries: Overview January 1988
7. Financing Public Sector Development Expenditure in Selected Countries: Bangladesh June 1988
8. Financing Public Sector Development Expenditure in Selected Countries: India June 1988
11. Financing Public Sector Development Expenditure in Selected Countries: Pakistan June 1988
12. Financing Public Sector Development Expenditure in Selected Countries: Philippines June 1988
17. Foreign Trade Barriers and Export Growth September 1988
18. The Role of Small and Medium-Scale Industries in the Industrial Development of the Philippines April 1989
19. The Role of Small and Medium-Scale Manufacturing Industries in Industrial Development: The Experience of Selected Asian Countries January 1990
23. Export Finance: Some Asian Examples September 1990
27. Guidelines for the Economic Analysis of Projects February 1997
28. Investing in Asia 1997

SPECIAL STUDIES, ADB (SS, ADB)
(Published in-house; Available commercially through ADB Office of External Relations)

1. Rural Poverty in Developing Asia
   Edited by M.G. Quibria
   Vol. 1: Bangladesh, India, and Sri Lanka, 1994
   $35.00 (paperback)
   Vol. 2: Indonesia, Republic of Korea, Philippines, and Thailand, 1996
   $35.00 (paperback)
2. External Shocks and Policy Adjustments: Lessons from the Gulf Crisis  
Edited by Naved Hamid and Shahid N. Zahid, 1995  
$15.00 (paperback)

3. Gender Indicators of Developing Asian and Pacific Countries  
Asian Development Bank, 1993  
$25.00 (paperback)

Edited by Ernesto Pernia, 1994  
$20.00 (paperback)

5. Indonesia-Malaysia-Thailand Growth Triangle: Theory to Practice  
Edited by Myo Thant and Min Tung, 1996  
$15.00 (paperback)

6. Emerging Asia: Changes and Challenges  
Asian Development Bank, 1997  
$30.00 (paperback)

7. Asian Exports  
Edited by Dilip Das, 1999  
$35.00 (paperback)  
$55.00 (hardbound)

8. Mortgage-Backed Securities Markets in Asia  
Edited by S.Ghon Rhee & Yutaka Shimomoto, 1999  
$35.00 (paperback)

9. Corporate Governance and Finance in East Asia:  
A Study of Indonesia, Republic of Korea, Malaysia, Philippines and Thailand  
Vol. 1, 2000 $10.00 (paperback)  
Vol. 2, 2001 $15.00 (paperback)

10. Financial Management and Governance Issues  
Asian Development Bank, 2000  
Cambodia $10.00 (paperback)  
People's Republic of China $10.00 (paperback)  
Mongolia $10.00 (paperback)  
Pakistan $10.00 (paperback)  
Papua New Guinea $10.00 (paperback)  
Uzbekistan $10.00 (paperback)  
Viet Nam $10.00 (paperback)  
Selected Developing Member Countries $10.00 (paperback)

11. Guidelines for the Economic Analysis of Projects  
Asian Development Bank, 1997  
$10.00 (paperback)

Asian Development Bank, 1999  
$15.00 (hardbound)

Asian Development Bank, 2000  
$10.00 (paperback)

SPECIAL STUDIES, OUP (SS,OUP)  
(Re-published with Oxford University Press; Available commercially through Oxford University Press Offices, Associated Companies, and Agents)

1. Informal Finance: Some Findings from Asia  
Prabhu Ghate et. al., 1992  
$15.00 (paperback)

2. Mongolia: A Centrally Planned Economy in Transition  
Asian Development Bank, 1992  
$15.00 (paperback)

3. Rural Poverty in Asia, Priority Issues and Policy Options  
Edited by M.G. Quibria, 1994  
$25.00 (paperback)

4. Growth Triangles in Asia: A New Approach to Regional Economic Cooperation  
Edited by Myo Thant, Min Tung, and Hiroshi Kakazu  
1st ed., 1994  
Revised ed., 1998  
$36.00 (hardbound)

5. Urban Poverty in Asia: A Survey of Critical Issues  
Edited by Ernesto Pernia, 1994  
$18.00 (paperback)

Edited by M.G. Quibria, 1995  
$15.00 (paperback)  
$36.00 (hardbound)

7. From Centrally Planned to Market Economies: The Asian Approach  
Edited by Pradumna B. Rana and Naved Hamid, 1995  
Vol. 1: Overview  
$36.00 (hardbound)  
Vol. 2: People's Republic of China and Mongolia  
$50.00 (hardbound)  
Vol. 3: Lao PDR, Myanmar, and Viet Nam  
$50.00 (hardbound)

8. Financial Sector Development in Asia  
Edited by Shahid N. Zahid, 1995  
$50.00 (hardbound)

9. Financial Sector Development in Asia: Country Studies  
Edited by Shahid N. Zahid, 1995  
$55.00 (hardbound)

Christine P.W. Wong, Christopher Heady, and Wing T. Woo, 1995  
$15.00 (paperback)

Edited by M.G. Quibria and J. Malcolm Dowling, 1996  
$50.00 (hardbound)

12. The Bangladesh Economy in Transition  
Edited by M.G. Quibria, 1997  
$20.00 (hardbound)

13. The Global Trading System and Developing Asia  
Edited by Arvind Panagariya, M.G. Quibria, and Narhari Rao, 1997  
$55.00 (hardbound)

14. Rising to the Challenge in Asia: A Study of Financial Markets  
Asian Development Bank, 1999  
Vol. 1 $20.00 (paperback)  
Vol. 2 $15.00 (paperback)  
Vol. 3 $25.00 (paperback)  
Vols. 4-12 $20.00 (paperback)
SERIALS
(Co-published with Oxford University Press; Available commercially through Oxford University Press Offices, Associated Companies, and Agents)

1. Asian Development Outlook (ADO; annual)
   $36.00 (paperback)

2. Key Indicators of Developing Asian and Pacific Countries (KI; annual)
   $35.00 (paperback)

JOURNAL
(Published in-house; Available commercially through ADB Office of External Relations)

1. Asian Development Review (ADR; semiannual)
   $5.00 per issue; $8.00 per year (2 issues)