

Behrman, Jere R.; Deolalikar, Anil B.; Soon, Lee-Ying

Working Paper

Conceptual Issues in the Role of Education Decentralization

ERD Working Paper Series, No. 22

Provided in Cooperation with:

Asian Development Bank (ADB), Manila

Suggested Citation: Behrman, Jere R.; Deolalikar, Anil B.; Soon, Lee-Ying (2002) : Conceptual Issues in the Role of Education Decentralization, ERD Working Paper Series, No. 22, Asian Development Bank (ADB), Manila,
<https://hdl.handle.net/11540/2062>

This Version is available at:

<https://hdl.handle.net/10419/109247>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



<http://creativecommons.org/licenses/by/3.0/igo>

Conceptual Issues in the Role of Education Decentralization in Promoting Effective Schooling in Asian Developing Countries

Jere R. Behrman
Anil B. Deolalikar
Lee-Ying Soon

September 2002

ERD Working Paper No. 22

**CONCEPTUAL ISSUES IN THE ROLE OF EDUCATION
DECENTRALIZATION IN PROMOTING EFFECTIVE SCHOOLING
IN ASIAN DEVELOPING COUNTRIES**

**Jere R. Behrman
Anil B. Deolalikar
Lee-Ying Soon**

September 2002

Jere R. Behrman is William R. Kenan, Jr. Professor of Economics and Director of the Population Studies Center, University of Pennsylvania. Anil B. Deolalikar is Professor of Economics and Director of South Asia Center, University of Washington. Lee-Ying Soon is Associate Professor of Economics, Nanyang Technological University, Singapore. The authors are international consultants for TA 5617-REG: *Financing Human Resource Development in Asia*. The authors thank Rana Hasan, Shew-Huei Kuo, and her colleagues at the Asian Development Bank (ADB) for useful comments during the course of the project. The authors alone, and not ADB, are responsible for the content of this paper.

Asian Development Bank
P.O. Box 789
0980 Manila
Philippines

©2002 by Asian Development Bank
September 2002
ISSN 1655-5252

The views expressed in this paper
are those of the author(s) and do not
necessarily reflect the views or policies
of the Asian Development Bank.

Foreword

The ERD Working Paper Series is a forum for ongoing and recently completed research and policy studies undertaken in the Asian Development Bank or on its behalf. The Series is a quick-disseminating, informal publication meant to stimulate discussion and elicit feedback. Papers published under this Series could subsequently be revised for publication as articles in professional journals or chapters in books.

Contents

Acronyms	vii
Abstract	ix
Preface	1
I. Background and Rationale for Country Studies	1
A. School Effectiveness: Decentralization, Incentive Structures, and Information	3
B. New Channels and Sources of Finance: Demand-Side and Private Sector	4
C. Quality-Quantity Trade-Offs in Resource Allocation	4
D. Education and the Role of Information	5
II. Framework for Analysis	5
A. The Analytical Model	6
B. Data Needs	7
C. Estimation Problems	9
D. Qualitative Methods	9
E. Implications for Analysis of Exogenous Policies	10
F. Intrahousehold Allocations of Human Resource Investments	10
G. Information Problems and Human Capital Investments	10
III. Efficiency and Equity Considerations	11
A. Efficiency in Resource Allocation	11
B. Equity in Distribution	12
IV. Major Issues of Education in Developing Member Countries	13
A. School Access	13
B. School Quality	14
C. School Financing	16
D. School Management	17
E. Information Issues	20
V. Decentralization and Education	21

VI.	Decentralization in Practice	23	
	A.	Downsizing of Central Bureaucracies in Education	24
	B.	Devolution of Authority to Local Governments	24
	C.	School-Based Management	25
	D.	Community Financing of Education	27
	E.	Curriculum Reform	28
	F.	School Vouchers and Demand-Side Financing	28
VII.	Potential Effects of Decentralization	29	
	A.	Impact of Financial Decentralization	29
	B.	Impact of Management Decentralization	32
	C.	Impact of Curricular Decentralization	33
VIII.	Factors Influencing the Success of Decentralization	34	
	A.	Information	34
	B.	Vested Interests	35
	C.	Incomplete Decentralization	36
	D.	Local School Management Capabilities	37
	E.	Local Parental and Community Capabilities	37
	F.	Competition	37
IX.	Conclusions	38	
	References	39	

Acronyms

ADB	Asian Development Bank
DMC	developing member country
GDP	gross domestic product
GNP	gross national product
HDI	Human Development Index
HPAE	high-performing Asian economy
LGU	local government unit
PPP	purchasing-power parity
PRC	People's Republic of China
PTA	parent-teacher association
RETA	regional technical assistance
SBM	school-based management
SY	school year
UNDP	United Nations Development Programme
US	United States

Unless otherwise specified, “\$” and “dollar” refer to United States dollars.

Abstract

While decentralization of education in DMCs has largely been driven by fiscal constraints, it has also been motivated by concerns about the effectiveness of a centralized system in delivering education services. The statistics are revealing: while virtually all DMCs have made impressive gains in expanding the coverage of primary schooling, enrollment rates remain generally low at secondary and tertiary levels, particularly for children coming from disadvantaged backgrounds. The quality of education is also a cause for concern, judging by dropout and grade repetition rates, and international comparisons of achievement test scores. Another cause for concern is whether the curricula used are appropriate, especially for higher education.

To varying degrees, DMCs have adopted some elements of decentralization in their education systems. These include devolution of authority and responsibility for schools from central to local levels, increased local financing of schools, decentralization of school functions, and reforms to the incentive structure of schools and their teachers. However, it is not often clear that the measures adopted have led to improvements in education. There is not much evidence that decentralization has been successful in improving education in DMCs, perhaps in part because decentralization measures in most countries so far have been incomplete. There is still no clear understanding of the economic and institutional conditions under which decentralization leads to more effective education.

PREFACE

This is the first of three Economics and Research Department working papers on the Asian Development Bank (ADB) project “The Role of Education Decentralization in Promoting Effective Schooling in Selected DMCs.” The selected developing member countries (DMCs) are Bangladesh, Indonesia, and Philippines. This project covers part of Phase Two of a larger ADB project (RETA 5617) whose Phase One addressed the issue of “Financing Human Resource Development in Asia.”

For the project, international consultants identified the issues in education and the role that decentralization plays, provided an analytical and methodological framework for analyzing decentralization, and made an extensive review of the relevant literature. This working paper is based on the issues report.

The three DMCs selected for the project differ significantly in the progress made in the education sector. The Philippines, for instance, has long had high levels of education compared with other DMCs at the same level of per capita income. For Bangladesh, in contrast, universal primary schooling remains elusive, despite substantial progress. In Indonesia, access to primary schooling was by the mid-1980s no longer an issue and priority had shifted to expanding universal schooling up to junior secondary level. However, the 1997 financial crisis and subsequent events have raised concerns that some of the gains in education may be reversed. In all three countries, the low quality of schooling is acknowledged as critical and has been given priority. In all three countries decentralization, or further decentralization, is expected to shape policies in the education sector in the years ahead.

This working paper thematically falls into two parts. The first part (Sections I-IV) establishes the background and rationale for the project and scrutinizes major issues of education in DMCs including school access, quality, financing, management, and information issues related to education. The second part (Sections V-IX) examines various aspects of decentralization—the various forms it takes in practice, its potential effects, and factors that influence the success of decentralization.

This working paper sets the background for three country reports on Bangladesh, Indonesia, and Philippines, to be published, in summary form, as ERD Working Paper No. 23 (Behrman et al. 2002). A full version of the Philippines country report is to be published as ERD Working Paper No. 24 (Manasan 2002).

I. BACKGROUND AND RATIONALE FOR COUNTRY STUDIES

This paper begins with a description of the larger project RETA 5617, of which it is Phase Two. The RETA objectives were (i) to analyze the experience of four high-performing Asian

economies (HPAEs) of Japan; Republic of Korea (hereafter Korea); Singapore; and Taipei, China, with respect to financing and related aspects of human resources development; and (ii) to draw lessons for developing broad policies for developing member countries (DMCs). This was to be achieved in two phases, with the analysis of the HPAEs first and then selected DMCs second. Given funding constraints, the complexity of the issues in education and health sector financing in the DMCs, and ADB's much larger investments in the education sector of the DMCs, it was decided to focus on education in Phase Two.

The salient features of education policy in the HPAEs, as identified by the Phase One study, are:

- (i) At comparable levels of development, the HPAEs strongly emphasized primary education in comparison with other Asian countries and ensured wide (if not universal) coverage of primary education of high quality. In contrast, a number of other Asian economies have concentrated a substantial portion of their public expenditures on higher levels of education.¹
- (ii) While the HPAEs financed basic education (primary plus junior secondary) through public funds, upper secondary and higher education were largely financed through user fees. The user fees applied not only to private institutions that received some government subsidies, but also, to a smaller extent, to public institutions.
- (iii) The high enrollment rates and high test scores (proxies for the quality of education outcomes) that have occurred in the HPAEs with public expenditures at reasonable levels point to the importance of private financing of education and efficient mixes of school inputs in publicly subsidized schools. Average pupil/teacher ratios in the HPAEs when their real per capita gross domestic product (GDP) was \$1,000 (in 1992 dollars) were around 40 and 30 for primary and secondary schooling, respectively. These are higher than averages for other Asian economies at comparable levels of development. HPAE teachers have also been relatively better paid. Higher salaries may be a sound policy because well-trained and well-motivated teachers are thought to be among the most critical inputs in the pedagogical process, and higher salaries may induce better teachers and greater motivation.²

Returning now to the concerns of Phase Two, while virtually all DMCs have had impressive gains in expanding the coverage of education, particularly at the primary level, enrollment rates still remain generally low at the secondary and tertiary levels and for many children coming from

¹ As discussed below, a priori one would expect that the returns to different types of education would differ depending on the context. Mingat and Tan (1996) report related empirical support. On the basis of cross-country growth regressions they found economic growth in the quarter century between 1960 and 1985 to be highly correlated with primary education enrollments for low-income countries, secondary education enrollments for middle-income countries, and higher education enrollments for high-income countries.

² Private tutoring is quite prevalent in some of the HPAEs, often after hours by public schoolteachers. This weakens any conclusions about the effectiveness of HPAE public expenditures on schooling and whether public teacher salaries are sufficiently high to induce high motivation in their primary jobs. Biswal (1998), for example, has modeled the implications of private tutoring by schoolteachers in developing countries, with a focus on imperfect information problems that make it very difficult for public officials to monitor effectively the intensity of effort of public schoolteachers who themselves are heterogeneous in abilities and efforts. He has analyzed how the provision of private tutoring compromises the supposed transfer to poorer members of society through public subsidized schooling if teachers are in short supply.

disadvantaged backgrounds at all levels. Moreover, it is generally perceived that most DMCs have not been as successful as the HPAEs in delivering education of high quality, as indicated by international comparisons of achievement test scores in math and reading, and by dropout and grade repetition rates in many DMCs. There is also cause for concern regarding the appropriateness of curricula, especially at the higher schooling levels. The concern is that the current curricula, combined with examination systems with their emphasis on rote memorization of a mass of facts, are not equipping students with the appropriate analytical skills necessary for understanding and utilizing modern technologies effectively in emerging labor markets.

Reallocating resources among schools and increasing resources for education may be important means for improving education in DMCs. But at the same time, some experts think that major overhauls of the incentive structures of schools and teachers are needed. Recent empirical studies that indicate greater effectiveness of otherwise similar private schools over their public sector counterparts and of public sector schools with greater autonomy in decision making over ones that do not have such autonomy are interpreted as evidence that making schools and teachers more accountable to students and parents is critical.

However, decentralization and greater market orientation do not necessarily lead to improvements. For example, some argue that decentralization of education *management* simply shifts the same old problems to levels that are less capable of resolving them. Similarly, decentralization of education *finance*—that is, increased reliance on more local and parental financial contributions—can end up reinforcing preexisting inequities. Thus a clear understanding of the economic and institutional conditions under which decentralization and greater market orientation lead to more effective education is very important from the point of view of DMCs because these are the directions in which virtually all DMCs are heading. Moreover, designing policies that counter any tendency toward a worsening of inequities needs careful attention.

Given this background, the following are somewhat overlapping issues that need to be examined for the purpose of improving education policy in DMCs.

A. School Effectiveness: Decentralization, Incentive Structures, and Information

It has been argued that devolution of decision making to local and school levels and greater market orientation make schools and teachers more accountable to children and parents, more sensitive to input costs, and more efficient, thereby increasing their effectiveness. But basic questions remain regarding whether such outcomes depend on parental or local community capabilities in influencing and judging the extent of value added in schools. If parental/community capabilities are lacking, for example, due to parents' lack of education or economic resources, what can be done about it? Designing incentive structures for schools and teachers that increase their levels of professionalism in the face of limited parental and local capabilities is a critical challenge for education policy today. Meeting this challenge may require the development of supporting mechanisms that collect and disseminate information on value added by schools. How might this be accomplished?

B. New Channels and Sources of Finance: Demand-Side and Private Sector

While decentralization of education is being touted by some as an innovation in the delivery of schooling, insofar as it makes schools and teachers more sensitive to student learning and resource usage, it is a phenomenon largely driven by the fact that it can relieve strained public sector finances. However, although there may exist much scope for increasing user fees, the ability of many individuals to pay for education is seriously constrained in DMCs, thus raising the question of whether some sort of financial assistance is appropriate.³ Demand-side financing is one possibility receiving increased attention from policymakers. In this approach, money is channeled through students rather than through education institutions. Examples include stipends, student loans, targeted bursaries, and vouchers. The Government of Thailand, for example, is considering instituting a voucher scheme at the secondary level and expanding its subsidized student loan fund. There are a host of important issues that need to be examined. These include the efficient administration of these schemes, the response of schools to them, and the effects of school choice on learning and the capability of parents to make informed choices. The rationale of demand-side financing is consistent with the new emphasis on accountability on the part of schools and teachers and choice on the part of students and their parents. Of course, parental and student choices may be limited to the extent that local monopolies in education exist, student mobility is restricted, and there are no good options for distance learning. To the extent that accountability increases and that students or their parents make informed choices, this mode of financing may turn out to be an efficient one. But demand-side financing does not necessarily imply less public sector financing, but only channeling public funding through students/households rather than through schools. Thus, in addition to an evaluation of demand-side financing schemes, an important issue to examine is how the private sector can be encouraged to increase education financing.

C. Quality-Quantity Trade-Offs in Resource Allocation

One possible dilemma is that a trade-off may exist between allocating resources toward providing broad access to education and improving the quality of existing ones. Thus, in economies where both access to, and quality of, education are problems, should resources be expended on setting up schools in remote regions or on, say, increasing textbook availability in existing ones? Some researchers argue that the trade-off is only apparent because setting up schools without paying careful attention to quality encourages high dropout rates and grade failure, thereby leading to a failure to increase access to education in a meaningful way. The relevant issue for policy may

³ The efficiency and distribution rationale for policy that should be used to guide whether policy interventions are appropriate is discussed below. Within the framework discussed there, constraints on capacity to pay for schooling may originate in capital market imperfections that result in private marginal costs of schooling being higher than social marginal costs, which leads to schooling investments that are too low, and therefore, socially inefficient. Such constraints are more likely for poorer households, so distribution concerns are likely to be relevant as well.

be to identify at least approximately what constitutes a minimally acceptable quality of schooling and to determine how this level of quality may be delivered. Alternatively, the issue may be to identify mechanisms that create the right incentives for the desired quality. While these are difficult questions to address, a serious attempt should be made. Some researchers suggest that the binding constraint to provision of better schooling is the lack of motivation on the part of teachers. If so, this would reinforce the importance of designing appropriate incentives to motivate teachers as in subsection A above. However, the introduction of new technologies in instruction, such as radio education, should not be ruled out. Indeed, some research indicates that there may be high returns from using radio education, particularly in remote rural areas where other pedagogical inputs (including motivated teachers) are lacking. Radio education and other forms of distant education also have the advantage of lessening local geographic monopolies in the provision of schooling.

D. Education and the Role of Information

A number of these issues involve, in one way or the other, instances of incomplete and asymmetric information. For example, the fact that it is difficult to ascertain the specific inputs that improve schooling outcomes is an information problem. It is largely in response to this problem that some educators and policymakers are thinking in terms of creating incentives for greater market orientation and demand-side financing schemes. But a necessary condition for the success of such strategies is that students and parents have access to information on value added across schools with which they will make the most informed choices. The facts that schools do not always have incentives to provide information and that parents may be unable to process available information in an efficient manner suggests a role for public subsidization of information and its dissemination. In addition, there may be important gains from establishing effective information linkages between education institutions, their students, and the private sector.

II. FRAMEWORK FOR ANALYSIS

The analytical framework frequently employed in the analysis of various aspects of human capital or investments in education is that developed by Becker (1967) in his Woytinsky Lecture. In that framework, the individual or household builds up its human capital by investing in education on the expectation of deriving benefits from it in the form of increased earnings, heightened social standing, etc. These benefits decline per unit of additional investment (the usual case of diminishing returns). But going to school has a cost—the opportunity cost of lost or forgone income, forgone leisure, etc. represented only partly by actual monetary cost. These costs increase per unit of additional investment (the usual case of increasing costs). The individual or household invests up to the point where the marginal benefit from its additional investment matches exactly the marginal cost of that investment. At that point the net benefit of the individual or household is maximum.

Along with the private sector, the government provides the supply of education to the population. From its viewpoint, the issue translates into how much it should invest in the education of its population. The framework says—up to the point where the marginal social benefit is exactly equal to the marginal social cost; at that point the net social benefit is maximum.

There can be a difference between benefits from a society-wide viewpoint, i.e., social benefits, and benefits from a private individual viewpoint, i.e., private benefits, as well as a difference between social costs and private costs. Marginal social benefits exceed marginal private benefits when there are externalities, that is, when benefits cannot be limited to the individual but extend to the community as a whole. For instance, when education makes people more conscious of their civic duties, e.g., by making them dispose of their trash more carefully, or making them less prone to antisocial activities, it benefits the community as well as the educated individual. In fact, this is the principal reason given in support of the argument for government intervention in the field of education. On the other hand, marginal private benefits exceed marginal social benefits when the externalities are negative, i.e., when the individual uses his or her education for self-aggrandizement at the expense of the community.

On the cost side, marginal social costs are less than marginal private costs when there are imperfections in the capital market, i.e., forcing private individuals to pay higher interest rates on funds for education than rates dictated by opportunity costs. Conversely, marginal social costs outstrip marginal private costs when public funds allocated for education entail an abandonment or postponement of projects or activities deemed of the highest priority in the nation's agenda.

The present study is not, however, directly concerned with the question of maximizing the net social benefit from investment in education. Rather, it is directly concerned with the narrower issue of whether the quality of education in a given country can be improved through the instrument of decentralization. It assumes that improvement in the quality of education, so long as it occurs without violating efficiency and equity criteria, is a movement in the direction of maximizing the net social benefit.

A. The Analytical Model

Analyzing the role of decentralization in the promotion of effective schooling requires, first and foremost, the establishment of a relationship between decentralization and effective schooling. Is effective schooling promoted by decentralization? What constitutes effective schooling? What is the meaning of decentralization? The relationship between decentralization and effective schooling can be described in general in the following way:

$$S = S(D, X) \tag{1}$$

where S means effective schooling, D means decentralization, and X means other factors. The equation therefore says that effective schooling depends upon decentralization and other factors.

S is the endogenous (or dependent or left-hand) variable, D and X the exogenous (or independent or right-hand) variables. The relationship between S on the one hand and D and X on the other may be positive, negative, or even zero. In the present study, the a priori expectation is that the relationship is, of course, positive. On the other hand, it is assumed that there is no relationship between D and X . In the language of modeling, equation (1) is a structural or behavioral equation defining a structural or behavioral relation in the system modeled.

In practice, equation (1) may be a system of equations where all three variables are vectors; and some of the elements of vector X may be endogenous variables themselves. In this context, to know the total (direct plus indirect) effects of the exogenous variables on the endogenous variables, the system must be solved. Solving the system (assuming a solution exists) requires collecting all endogenous variables on one side and all exogenous variables on the other and inverting the system. The solution is called the “reduced-form model,” where all endogenous variables have been “reduced” to being dependent only on exogenous variables.

A single equation model where all right-hand variables are exogenous is also called a reduced-form model. Such exogenous variables are sometimes also called determinants.

B. Data Needs

The framework requires data—statistics or indicators to represent the three variables. Data limit the extent to which analyses can be undertaken, and shape most of the estimation problems. There are difficult problems in this area, however. If there were available data from well-designed experiments,⁴ associations between observed human capital outcomes and observed determinants would reveal the underlying causality directly. But for numerous reasons, including costs and ethical concerns, such experimental data are rarely available.⁵ Therefore, while there may be high returns for investments in some aspects of human resources to increase experimental data, most analysis has been, and will continue to be, based on behavioral data. Behavioral data can “speak for themselves” regarding *associations* between outcomes and “determinants” but not

⁴ With random assignment between treatment and control groups, no attrition problems, and where neither the subjects nor those who provided the experimental treatments knew which subjects received treatments and which received placebos.

⁵ Many studies that purport to be based on such natural experiments have been subject to considerable criticism. For example, see Deaton (1995) on Knight and Sabot’s (1990) claim that the difference between labor outcomes in Kenya and the United Republic of Tanzania is a natural experiment regarding the type of government or Welch’s (1995) comments on Card and Krueger’s (1995) claims that such experiences as differences in state minimum wage laws constitute natural experiments. But some of the claims regarding natural experiments are more persuasive in the view of the authors of this paper: for example, the use of multiple births in India as a natural experiment to explore the effect of fertility shocks in Rosenzweig and Wolpin (1980) and of the gender of a new baby to explore the impact of a shock on savings, time allocation, and income in rural India in Deolalikar and Rose (1998).

regarding *causality* between them. Further, factors unobserved by analysts,⁶ e.g., innate ability and student motivation, may well be the true determinants of outcomes.

For instance, let us consider the question of what “determines” cognitive achievement C of an individual:

$$C = C(A, M, H, S) \tag{2}$$

where A means innate ability of the individual, M the intensity of his or her motivation, H the state of his or her health, and S the quality of the school. In practice there are no suitable statistics or indicators for innate ability and for intensity of student motivation. The analyst may be constrained to use only school quality and the state of health of the individual simply because there are good indicators for them, though the former two may well be the “true” determinants of cognitive achievement. Moreover, the regression results will only show that, say, the quality of schools and the state of health of the student population are associated with effective schooling, not that they caused it.

For decentralization, statistics vary for the reason that there are many ways in which education can be decentralized. These could include, inter alia, the proportion of budgetary and spending decisions devolved from the central government to local governments, the presence or absence of school-based management (SBM), the extent of decentralization of management functions to local governments, and the extent of community financing of education.

In the absence of region-specific data on decentralization, it might make sense to include respondent-reported information on school autonomy as the relevant right-hand variable. School principals (head teachers) could be asked in a sample survey of schools to rate, on an ordinal scale, the autonomy they enjoy in making spending, staffing, and curricular decisions. While such school autonomy measures would suffer from the usual problems of self-reported subjective variables, they would at least permit a rough estimation of the relationship between education decentralization and student learning outcomes in a situation where data on decentralization differences across schools or regions are not available from external sources.

⁶ Throughout this paper “unobserved” means unobserved by analysts and policymakers. What is unobserved in this sense, of course, depends on the data set, though there are some widely unobserved factors such as innate ability, innate health, family connections, and preferences. Such factors, while not observed by analysts, are observed (perhaps imperfectly and with learning) by the individuals whose behaviors are being studied, and these individuals make decisions in part based on these factors. Examples of recent studies (or surveys of such studies) that emphasize these unobserved factors and their importance in analysis of behavioral data include Alderman et al. (2001), Behrman (1997), Behrman and Deolalikar (1993), Behrman and Lavy (1998), Behrman and Rosenzweig (1999), Bouis and Haddad (1992), Card (1995), Deolalikar (1996), Foster and Rosenzweig (1996), Glewwe (1996), Glewwe and Jacoby (1995), Hanushek (1995), Heckman et al. (1994), King and Hill (1993), Miller et al. (1995), Munshi (1997), Rosenzweig and Wolpin (1993), Strauss and Thomas (1995), and Thomas et al. (1991).

For other factors affecting schooling, indicators for preschool human resource investment, innate ability of students, the status of their health, nutrition, school quality, time in school, family background characteristics, etc. will be useful. Most of them unobserved by the analyst, they may well be the “true” determinants of schooling outcome. Good proxies must be found for them.

Effective schooling is an outcome. The most obvious statistic for education outcome is student test scores (standing for quality). Other statistics, equally important (especially in a developing country context), include school enrollment (standing for access), transition to secondary school, grade repetition rates, and school dropout rates (all standing for quality).

C. Estimation Problems

The estimation of the coefficients of the exogenous variables, along with the specification of the model itself, is an exercise in econometrics. There are a number of possible problems in obtaining good estimates of the impacts of various aspects of decentralization and other policies on schooling outcomes. These problems include measurement error, omitted variables, simultaneity, and selectivity. These are discussed in elementary textbooks in econometrics and will not be explained here.

D. Qualitative Methods

Econometric methods are data intensive and require the undertaking of detailed household- and school-based sample surveys. The latter require extensive planning in the form of sampling design, questionnaire development and pretesting, and field operations. In addition, considerable resources and time are needed for the collection, supervision, cleaning, and analysis of survey data. For the most part, such approaches are beyond what is possible for the country studies that are summarized in ERD Working Paper No. 21.

An alternative or complementary approach is to conduct individual interviews, focus group discussions, and informal conversations with the actors most affected by school decentralization—students, teachers, parents, and school principals—on how they view, interpret, implement, and experience school decentralization. Such interviews provide qualitative evidence that can be used to evaluate the *process*—as opposed to the outcome—of decentralization. An example of a study that has adopted this approach is that by Fuller and Rivarola (1998), who conducted 80 interviews and focus group discussions in 12 schools in Nicaragua in 1995—2 years after a program launched by the Nicaraguan Government to grant management and budgetary autonomy to all secondary and many primary schools. Fuller and Rivarola used qualitative interview techniques to address three questions: (i) How does a school’s history and community affect the manner in which school autonomy is implemented? (ii) How do parents, teachers, and school principals interpret and provide content to the Ministry of Education’s school autonomy initiative? And (iii) What are the major areas in which decentralized governance in autonomous schools has worked? What are the areas in which it has encountered resistance?

E. Implications for Analysis of Exogenous Policies

Government policies—including those related to education—are usually assumed in analytical models to be exogenous, that is, determined from outside of the system. Yet in reality they are not; they are in fact made by individuals or groups of individuals with various objectives in mind responding to various pressures from a variety of sources. This means that it may be misleading to evaluate the impact of government policies on human resources without controlling for the fact that government policies themselves are determined, implemented, and monitored as part of a larger set of behavioral decisions. The failure to control for the determinants of government policies may cause substantial misestimates of their effectiveness.

On the other hand, endogenizing government policies will necessarily result in an enlargement of data needs and an expansion of the analytical model. This must be carefully weighed against the realities of data availability and the analyst's own statistical or econometric capability.

F. Intrahousehold Allocations of Human Resource Investments

The nature of intrahousehold allocations may modify the basic human capital investment story because these may differ from the way in which the individual allocates his or her resources. Households may have preferences for innate ability, gender, sector, or discipline, and so on, in the allocation of their investment. They may, for instance, give preference to brighter members of the household, or to women, or to urban rather than rural areas, or to the social rather than the physical sciences. The pattern of benefits and costs of investment in human resources for the household as a whole then becomes different from the pattern relevant to the individual. The treatment of the household as though it were an individual in the calculation of benefits and costs is then no longer justified. Taking all of these considerations into account requires the formulation of human resource investment behavior from a social instead of a household or individual viewpoint.

G. Information Problems and Human Capital Investments

The discussion to this point ignores the impact of information problems on human resource investment. The problem is particularly serious in many of the DMCs. There is likely to be considerable uncertainty among individuals and households regarding the value added, characteristics, and impact on productivities of different schools. The uncertainty may pertain to different callings or professions and the rates of return to human capital specific to them. These information problems may result in the making of decisions by individuals and households with outcomes that are suboptimal from a social viewpoint.

These information problems have a number of important implications.

First, it is probably desirable to develop mechanisms for providing both demanders and suppliers of schooling and other education services with better information, both about the current situation in the labor market and about future developments. The best candidate for doing this

will be the government, first because the needed information has the character of a public good and second because the government has the most extensive access to sources of information.

Second, future social developments may be difficult (if at all possible) to predict but efforts must be exerted to anticipate them. For example, a failure on the part of individuals and households to anticipate a social change from rewarding gender traits associated with males (e.g., strength) to rewarding gender traits associated with females (e.g., manual dexterity) can result in a suboptimal allocation of human capital investment. Such misreading can be minimized by careful monitoring of various aspects of social change.

Third, uncertainty and imperfect information regarding good matches of heterogeneous individuals with heterogeneous jobs, job turnover, job demand, etc. may mean that there are high returns to investing in job seeking and in improving information about job options. The government can make the identification and elimination of mismatches a part of its human resources development policy or labor productivity policy.

III. EFFICIENCY AND EQUITY CONSIDERATIONS

The private sector, pursuing its objective of maximizing profit, generates the supply of schools for the population. If the market is completely free, that is, rid of taxes and subsidies of various sorts, the resulting allocation of resources to education and other activities will be efficient, achieving maximum output from the given quantities of resources. The problem, however, is that such efficiency in allocation is not necessarily a guarantee of equity in distribution. Production may be maximum because the resources used to produce them are efficiently allocated but it may be accruing to only a few members of the population instead of equitably to all of them. For this reason, policy intervention related to schooling is usually deemed desirable. The two standard economic justifications for government policy interventions in this area are (i) to increase efficiency/productivity and (ii) to redistribute resources.⁷

A. Efficiency in Resource Allocation

Resources are said to be used efficiently in the economic sense if they obtain the maximum product possible given resource and technological constraints as well as the distribution of resource ownership. In welfare terms, resource allocation is said to be efficient when a change in that allocation cannot be made without diminishing the welfare of one or some of the members of the population concerned. In practice, neither efficiency in resource allocation nor equity in distribution is achieved in the process of production. Because of distortions in the prices and costs in the economic

⁷ These two justifications include some other common concerns about policies, such as questions of access and quality of services, and sustainability of overall economic development and of particular programs, as discussed below (also, see Behrman and Knowles 1998a).

system, resources are not efficiently allocated and production is not maximized. Resources tend to go into “protected” sectors, realizing profits despite their inefficiency. Government policy may then go toward removing or reducing the protection so that inefficient firms will be weeded out; or toward providing subsidies for this or that sector that it deems vital to society, such as education, so that resources will be attracted to the sector. For example, when the government dismantles tariffs or abolishes various regulatory measures, it stimulates the affected industries to improve their productivity and competitiveness, thus increasing society’s benefits from them. It can, of course, also do the opposite. The introduction of complex regulatory measures and the raising of taxes on vital economic activities discourage investment and misdirect resources with the result that social benefits decline while social costs rise. Only a leveling of the playing field will ensure achievement of efficiency and maximum production.

It follows that government policies must be carefully crafted if they are to achieve their efficiency or productivity objectives, so that they deliver necessary encouragement or discouragement to appropriate targets.

B. Equity in Distribution

Equity in distribution is a major policy motive distinct from efficiency. Distribution concerns are for the most part focused on poorer members’ of society command over resources.⁸ Policies in the education field are an example of policies aimed at improving equity. Since society in general wants to assure, for example, that everyone, not just the rich or middle class, have at least an elementary education, the government subsidizes elementary education so that the poor, who will otherwise be unable to afford it, have an elementary education. Scholarships given to poor students to enable them to continue studying are another means for improving equity in the distribution of investments in human resources.

The focus on equity considerations may well prejudice efficiency or productivity considerations, however. For instance, the same amount of investment may generate greater increases in productivity among people endowed with good health who do not need the investment than among those burdened with debilitating diseases who need it. Even government support to schools can have a perverse productivity impact if proportionately more of it goes to poor schools that remain poor despite the support and less to those that are able to help themselves.

As in relation to efficiency and productivity, the point of this discussion is to call attention to the extreme necessity to fine-tune policies so that they achieve their equity objective without jeopardizing their productivity objective.

It is obvious that in the determination of policy directed at investment in human resources, care must be exercised to weigh the two sides of policy before it is promulgated. For policy has

⁸ Many policies, whatever their official justification however, distribute resources to middle- and upper-class households. For some examples of human resource-related policies in one DMC, Viet Nam, see Behrman and Knowles (1998b, 1999).

not only intended effects but unintended effects as well. Failure to take this fact into account can result in the side effects overwhelming the central effects or, worse, reversing them, thereby calling into question the wisdom of policy making to begin with.

IV. MAJOR ISSUES OF EDUCATION IN DEVELOPING MEMBER COUNTRIES

We will now consider some of the major issues confronting education in DMCs. Although these issues are often discussed separately (as in the following paragraphs) they all are intertwined because, in effect, they all relate to the same overall goal of maximizing the net social benefits of investment in education, subject to various resource constraints. Some leading examples of these issues are now considered.

A. School Access

Studies of education issues frequently identify “access” and “quality” as program objectives in the attainment of the larger equity and efficiency objectives of society as a whole. “Access” is usually defined as the absence of economic and physical barriers that keep a prospective client away from a service delivery point. Optimal levels of access are defined in this literature to be those that maximize utilization and impact. Thus, for example, taking access to the limits, education services would be delivered free of charge to a client’s doorstep 24 hours a day every day of the year. Conversely, the least optimal level of access can be attained if the tuition charge for the education service is so high it could be paid only by the wealthy.

A number of factors affect “access” to the education system: these include, primarily, the level of user fees or tuition fees, distance, and travel costs. The lower (higher) these tuition fees the more (fewer) poor children can attend school. The shorter (longer) the distance to school the easier (more difficult) the access for children living in remote locations. The lower (higher) the costs of travel the more (less) affordable it is to children of poor families. Tuition fees will be discussed further in subsection IV.C.

The concrete result of access is enrollment—the number of children of different cohorts able to attend their respective school grades. If the proportion of these children to their total cohort is high, access can be said to be good. Conversely, if the proportion is low, access can be described as poor. The distribution of access across income groups is particularly important in the reckoning of access. National averages may conceal the fact that only a tiny proportion of children of poor families can attend school. The Gini coefficient of access across income groups may be larger than is suggested by the aggregate measure.

Access can have implications for efficiency as well. Improved access (e.g., bringing services closer to clients) is generally more than the level of access that would maximize utilization of schooling and other education services because marginal costs exceed marginal benefits as access increases. For instance, the subsidization of transport fares to and from remote regions or areas

to enable a few poor children in those regions or areas to attend school is clearly inferior, from an efficiency perspective, to the assignment of that subsidy to transport to nearer regions that have a greater number of children.

B. School Quality

School “quality” is usually defined to include all the school-related factors that enter into the determination of the value added of schooling. For instance, for cognitive achievement, school quality is one of a number of inputs into learning, together with individual, family, household, and nonschool community characteristics. The dimensions of school quality include teacher education and training, materials such as textbooks, and physical structures, as well as less easily observable factors, such as teacher morale and school management styles. Optimal levels of school quality are those that maximize schooling utilization and impact. Thus, for example, schools are criticized for their poor quality if they do not provide highly trained staff or a full range of options, citing studies that utilization increases with quality defined by such indicators.

There are at least three types of relevant empirical studies of school quality for DMCs and other developing countries.

First, there are some studies that suggest that better school quality induces higher enrollments that date back at least to Birdsall’s (1985) work on Brazil. Other more recent studies, including those for DMCs (see Behrman and Knowles [1999] for Viet Nam), report that school quality is distributed among communities to favor higher-income households.

Second, there are a few studies on the impact of indicators of school quality on wages in developing countries.⁹ Behrman and Birdsall (1983) present estimates for Brazil, for example, that indicate that the rates of return in terms of labor market earnings to schooling quality are at least as high as those to increasing time in schooling, holding quality constant; and that, further, the usual rates of return to schooling that are estimated from data on grades of completed schooling overstate substantially the true rates of return to grades completed because there is a correlation between school quality and grades completed. Another and more recent study of the impact of school quality on wages in one of the DMCs, Pakistan, finds that the social rates of return to increasing school quality in rural primary schools is about the same as that for expanding the number of rural primary schools of the average quality of existing schools, but definitely higher than expanding middle schools (Behrman et al. 1997).

Third, there are studies of determinants of test scores or other indicators of school achievement for developing countries, including DMCs. The table reproduces a summary of such studies as of the early 1990s. Among the five variables summarized from nearly 100 studies in

⁹ There are more such studies for developed countries, particularly the United States. See, for example, the set of studies on school quality in a symposium edited by Moffitt (1996). Among these studies is one that investigates, using special twins data, the response of household allocations of schooling quality and earnings endowments and finds that this response is positive so that children with greater endowments receive more and higher-quality schooling, which means that evaluations of the impact of schooling quality on wages need to control for such endowments to avoid biases (Behrman, Rosenzweig, and Taubman 1996).

this table, none has statistically significant positive effects for more than two thirds of the studies and only half of them—facilities, teacher education, and expenditure per student (with the last of these based on relatively few studies)—have significantly positive effects in half the studies.¹⁰ The teacher/pupil ratio that is widely used as an index of the quality of schooling has significant coefficients in half the studies, but the sign is the opposite of that presumed in half these significant cases. One interpretation of this phenomenon is that the basic problem emanates from the differences in the efficiency of teachers with some teachers of bigger (smaller) classes being more (less) efficient than those of smaller (bigger) classes. Moreover, schools have varying efficiencies in the delivery of schooling services. If so, what may be useful is the creation of incentive systems to induce better practices, which reward schools and the teachers and staff in them that do well by linking rewards to the value added of schooling.¹¹ But the limited success in identifying the effectiveness of school inputs also in part reflects methodological problems—e.g., the lack of control for endogeneity of school attendance and school characteristics. These and other related results suggest that at most there are some specific inputs into schooling that appear to have fairly widespread impacts, namely instructional materials, teacher education, and facilities. For some of these specific inputs, the returns to improvements may be quite high. There is also evidence that school effects are larger than the effects of specific identifiable inputs. That is, some schools are much better at teaching students than others for reasons that are not very clear from the available quantitative studies. This means that there is the potential for increasing substantially the effectiveness of school systems if better practices are adopted widely, but it may be difficult to know from a centralized perspective what inputs would have these positive effects.

Table. The Significance of Selected Schooling Inputs on Learning in School from 96 Studies in Developing Countries

Input	Number of Studies	Positive (Significant)	Negative (Significant)	Insignificant
Teacher Salary	13	4	2	7
Schoolteacher/Pupil Ratio	30	8	8	14
Teacher Education	63	35	2	26
Teacher Experience	46	16	2	28
School Facilities	34	22	3	9

Source: Harbison and Hanushek (1992); also reproduced in Hanushek (1995).

¹⁰ Just counting the studies with different results weighs all the studies equally, as Kremer (1995) notes, despite the differences in numbers of observations, procedures, and controls. Hedges et al. (1994) examine the same studies using a meta-analysis that corrects for some of these differences, and find a relation between spending on education and output. But such an approach does not control for the possible problems inherent in most of these studies related to what determines the school inputs and how that may bias the estimates.

¹¹ The apparent limited effectiveness of teachers' salaries in studies surveyed in Harbison and Hanushek (1992) is not evidence against such a strategy because these results are from experiences in which teachers' salaries generally have *not* been linked to performance, but to credentials and tenure.

Finally, there is the issue of a trade-off between access and quality. A common dilemma facing education planners in developing countries is the allocation of scarce resources to the expansion of school facilities versus improvement of existing school facilities (say, by raising the pupil/teacher ratio). Deolalikar (1996) presents evidence for Kenya that suggests that the two interventions have diametrically opposite effects on the enrollment of poor and nonpoor children at the primary school level. An expansion of primary school facilities increases enrollment of the poorest children but has no impact on enrollment of children in the richest income groups. On the other hand, an improvement in the teacher/pupil ratio at the primary school level increases the enrollment rate of children in the rich groups, but actually *reduces* the enrollment of poor children. One reason for this reduction might be that improvements in the teacher/pupil ratio often take place at the expense of other schooling inputs, such as bursaries and scholarships, which primarily help poor students attend primary school. Another reason may be that improvements in the teacher/pupil ratio are often financed out of higher user fees and supplements, which in turn can have an adverse effect on the enrollment rate of poor children. Deolalikar's findings thus suggest that there are strong distribution implications in the relative emphasis on schooling quantity versus quality.

C. School Financing

School financing is of major concern in most DMCs. As already noted, concern about decentralization is a phenomenon largely driven by the hope that it can relieve strained public sector finances—which became much more strained in a number of DMCs during the financial crisis of the late 1990s.

There are several questions that should be addressed on school financing, such as where the financing comes from, what form it takes, what its extent is, who dispenses it, and to whom. As far as public education is concerned, the vast bulk of financing comes from taxation as well as from income of government enterprises. Some of it sometimes comes from grants from friendly countries or official development assistance. A small portion of it is generated by user fees or tuition fees of students.

The most difficult of the issues attending public financing is the adequacy of financing. Public financing of education is almost always inadequate, and rarely able to cover all necessary expenses of public schools for teachers' pay, school supplies, and school facilities. As a consequence, public schoolteachers are invariably underpaid, facilities are limited or nonexistent, and equipment is obsolete. No doubt these deficiencies undermine quality by setting back school performance as indicated by test scores of students and other measures.

The question of who dispenses public finance for education gives rise to the issue of, among other things, decentralization. Is administration of financing by central government more effective in the attainment of access and quality objectives than administration by local government units (LGUs)? Or is LGU administration superior to central government administration? The decentralization argument obviously responds in favor of LGUs.

Furthermore, to the extent that it is not exhausted by payments to teachers and disbursements for supplies, facilities, and equipment, the financing can cover scholarships and other grants to students. These grants can be the traditional grants given to students in schools or can be “demand-side” grants, i.e., grants extended directly to students in the form of vouchers to enable them to enroll in the school of their choice. There is increasing evidence that demand-side scholarships create incentives to schools to improve the quality of their services so that they will be able to attract scholarship holders.

Finally, the choice of what financing mechanisms to use may be closely linked with the effectiveness of management. Management that functions on the basis of a systematic plan and that follows an orderly priority system is certainly better suited to administering public financing than a poorly organized management system. Conversely, some forms of financing, for instance, by directly involving demanders, may be more effective in inducing better management than more centralized systems.

D. School Management

School management matters centrally in the evaluation of issues of access and quality. Also, there are many aspects of management that are tied directly to the decentralization of schooling.

To begin with, the qualifications of school administrators, the principal mainly, in terms of education attainment and experience, particularly in managerial positions, is of critical importance to the efficiency and effectiveness of school management. In general it can be assumed that the higher the education qualifications and the longer the experience in managerial work of the principal or administrator, the more responsive and dependable the school management.

The decentralization argument posits that the greater the degree of independence granted to management, all else being equal, the better the performance of management, and vice versa. The expansion of the area of freedom of management implies decentralization and, in the extreme, privatization. Decentralization involves the transfer of functions from central to lower level units of administration, i.e., from the central department to LGUs. In turn, privatization may take the following forms: (i) the transfer of ownership of public schools to private individuals or groups, (ii) the development of private schools in parallel with public schools, (iii) the granting of increased government funding to existing private schools, and (iv) the acceptance of private financing by existing public schools (Bray 1998).^{12, 13}

¹² Many private schools receive public funding just as many public schools receive private contributions, both of which factors are often ignored in the literature.

¹³ There is a wide variety of private schools, ranging from elite private schools catering to children from privileged backgrounds to those run by religious or other not-for-profit organizations to those that cater to children who have been unable to utilize the public school system. This variety is important to keep in mind when trying to compare public and private schools.

In addition to relieving the pressure on public sector financing, it is often argued that decentralization of schools through privatization results in more cost-effective education through inducing better management. A few studies on developing countries present estimates that are consistent with this possibility, based on examining schooling outcomes (typically some type of test scores) while controlling for costs, enrollments, etc. across public and private schools. Some of the studies are also careful in making the distinction between public and private management of schools and public and private sources of funding.

However, a positive association between private schooling and cost-effectiveness does not necessarily imply that it is private schooling per se that is responsible for private schools' better performance. To illustrate, if students with greater ability or from privileged homes choose to attend private schools, then the fact that students from private schools perform better might be due only to their advantageous background and not to the greater effectiveness of private schools. More generally, whenever there is endogenous school choice, i.e., children or their parents choose among different school types in a nonrandom fashion based on their unobserved characteristics, simple associations cannot be interpreted to have causal relationships. To derive policy implications, it is critical to control for these choices when comparing schooling outcomes across school types.

A number of studies, including ones for several DMCs, attempt to control for choices of schools in their assessments of the impact of different school types—Jimenez et al. (1991) for Colombia, Dominican Republic, Philippines, United Republic of Tanzania, and Thailand; James, King, and Suryadi (1996) for Indonesia; and Kingdon (1996) for Uttar Pradesh in India.¹⁴ These studies find that decentralized schools (whether in financing, management, or both) tend to be more cost effective. But the relationships between decentralization and efficiency can be complex. Increases in private funding lead to a lowering of costs per student (holding test scores constant) but only at a diminishing rate. Thus, the average public school (which has local funding of 7 percent) gains more from increased local funding than the average private school (which has local funding of 30 percent). On the other hand, Bashir (1997) finds that in primary schools in Tamil Nadu State, India, fully private schools were the least cost effective whereas government-aided schools were the most cost effective; fully government schools were in between. King and Özler (2000), in their study of Nicaraguan school decentralization, find that de facto decentralization (measured by the proportion of decisions made locally) increases student achievement; de jure status does not have a significant effect.

Clearly, more careful research is needed on explaining differences in cost-effectiveness. Lockheed and Jimenez (1994) suggest that one reason for the greater cost-effectiveness of private

¹⁴ Control for choice of school with the data usually available is very difficult. Generally, it is impossible to find exogenous variables that plausibly affect the choice of type of school but do not directly affect what is learned in school, as would be required to identify the effects of type of school on what is learned through using instrumental variable estimates. Jimenez et al. (1991) basically control for school choice not through such exclusions, but through choices of functional form, which also requires strong assumptions. However, among others, Riddell (1993), who has carefully reviewed the evidence of Jimenez et al., stresses the need for caution in interpreting their results (cited in Bray 1998).

schools may be that principals in private schools typically have greater control on school-level decisions, such as selection and utilization of teachers and their services, choice of textbooks, adaptation of curriculum, and improvements of instructional practice that influence student outcomes. When coupled with the fact that principals in private schools are more directly accountable to students' parents, they have every incentive to exercise their control on school-level decisions in a manner that is compatible with parents' interests.

Because the issue of teacher selection and utilization of teacher services has drawn much recent attention, particularly in the context of decentralization and school cost-effectiveness, it is useful to consider the issue in greater detail. In a review of the empirical literature on cost-effectiveness of various schooling inputs (including teacher inputs), Pritchett and Filmer (1997) find a tendency for public sector allocation of schooling inputs to be biased toward teacher-related inputs over other pedagogical inputs (such as instructional materials). They argue that the pervasiveness of such allocation of resources is only consistent with decision making that gives an overly large weight to teacher welfare. Why should decision makers act in this way? Pritchett and Filmer suggest that the answer is that decision makers are cognizant of the fact that teachers vote while books do not. Students and parents may not be well aware of the optimal mix of inputs in the pedagogical process and in any case typically are not organized well enough to influence centralized decision making regarding school inputs.

There is support for the view that the incentive structure in public schools is inadequately geared toward improving student outcomes. Two studies for India provide examples. First, Dreze and Gazdar (1997), on the basis of surveys of 15 villages in four districts of Uttar Pradesh, found teacher absenteeism to be endemic among public primary schools. And when teachers were present, they were engaged only to a limited extent in instruction, prompting the authors to describe schools as essentially "child-minding" centers. Parents were well aware of shirking among teachers and perceived this behavior to be one of the fundamental problems with schooling.¹⁵ In contrast, despite the fact that teachers in profit-oriented private schools were typically poorly paid and less qualified relative to public schoolteachers, they appeared to be more effective if only because they had to turn up to teach!¹⁶ Second, Duraiswamy et al. (1997) examine public, private-aided (which account for 20–30 percent of all schools at the primary and secondary levels), and private-unaided schools in eight districts of Tamil Nadu State. In some cases, salaries of teachers in unaided schools were a quarter of those in public schools. While the salaries of teachers in private-aided schools are paid by the state, the private management of these schools has the option of hiring teachers whom they regard as better (instead of being assigned teachers from Madras). In principle, private-aided

¹⁵ Access to primary schools did not appear to be too significant a problem in the sample villages. This was consistent with research on rural Uttar Pradesh that indicates that only about 2 percent of the rural population lived more than 2 kilometers from a primary school (a little worse than the corresponding figure for India as a whole). However, this can be a significant distance in view of prevailing social and cultural norms. For example, female children are not encouraged to travel outside the village independently. This obviously creates one more hurdle in their education.

¹⁶ Bray (1998) characterizes Kingdon's (1996) study to provide evidence consistent with that in Dreze and Gazdar (1997).

schools can fire teachers whom they regard as inefficient. They can also fill vacancies and replace absent teachers quickly. In contrast, public schools are much more constrained in all of these dimensions. The finding that districts with a greater percentage of private-aided schools perform better in terms of average performance on state-wide test scores is consistent with the hypothesis that decentralizing management practices within public schools may lead to better schooling outcomes.

Finally, in addition to preference for better-qualified administrators, appropriate incentive systems for teachers could be instituted. Teacher motivation is a critical factor in determining schooling outcomes and thus it is often suggested that a portion of teachers' salaries be associated with student performance. In practice, unfortunately, such schemes are rarely successful. Kremer (1995) illustrates the point with reference to Kenya's policy of judging primary schools on the basis of results achieved in a national exam held in the eighth grade. Schools have responded to the incentives, but the incentives are too narrow: many schools seem to indulge in the practice of allowing only the best students to take the exam while forcing others to repeat the seventh grade. Moreover, such narrowly defined incentives may also encourage cheating and leakage of exam questions.¹⁷

E. Information Issues

Information issues are pervasive in all the issues discussed above. Were there no information problems, for example, many of the management issues would not be problems. Misallocations of resources would be very visible and easily correctable by central authorities, at least if the central authorities had sufficient enforcement powers.

From an efficiency perspective, information is likely *not* to be produced and disseminated by private suppliers until the point at which the social marginal benefits equal the social marginal costs. This is because there are usually strong increasing returns to the provision of information with the result that the marginal cost curve is downward sloping (or even zero if information is a pure public good) over a wide range. Therefore, private entities cannot charge a price equal to the marginal cost and cover their costs. Only by charging a higher price and restricting information to a lower level than that at which the marginal cost equals the marginal benefit can a private entity cover its costs. A further complication is that various participants in the education process may find it advantageous to attempt to create and exploit situations in which there is asymmetric information. Teachers who want the option to shirk or to "moonlight," for example, find it advantageous if there is asymmetric information about their time use so that neither their superiors in the schooling system nor parents of students know how they are using their time. As another example, schools that succeed in attracting better and more motivated students have incentives

¹⁷ Kingdon (1996) does not use the school test scores in her comparison of public and private schools because of widespread cheating in these examinations. Instead, she uses standardized tests of numeracy and literacy designed by the Educational Testing Service, Princeton, New Jersey, for a series of studies that are summarized in Knight and Sabot (1990).

to obscure the difference between the cognitive achievement levels (or indicators of success) of their students and the value added of the schools themselves.

From the perspective of distribution, particularly regarding schooling of students from poorer households, information problems tend to increase inequalities. This is because the poor are usually less able to access and process information, in part because they tend to have received a relatively limited education.

In a rapidly changing world with great heterogeneities and substantial shocks, moreover, information imperfections are unavoidable. This is a major reason to be concerned with designing institutions and mechanisms that convey better information. Local demand-based financing, for example, may more effectively convey the preferences regarding education of parents and the local community than any more centralized direct information collection procedure. Likewise, school-employer relations may improve information for the schools about the training that employers want, and for the employers about the characteristics of students. But because markets are unlikely to provide sufficient information on their own, as noted above, it is likely to be desirable for there to be some regulations regarding information disclosure. For example, schools and other education institutions might be required to make public information on the valued added in test performance and placement of their students so that potential clients may be better informed. It may be difficult to design perfect indicators of performance, but that does not mean that improvements cannot be made in the provision of useful information.

V. DECENTRALIZATION AND EDUCATION

To varying degrees, virtually all DMCs have adopted elements of decentralization in their education systems. Along with the devolution of authority and responsibility for schools from central to local levels, decentralization also typically involves increased local financing of schools. In terms of functions that have been decentralized, the curriculum and testing remain centralized practically everywhere. On the other hand, functions such as the selection of teachers, textbooks, and other instructional materials, and facility construction and maintenance, are being left increasingly to schools. Reforming the incentive structure—particularly of public schools and their teachers—to be more responsive to the needs of students and parents may lead to large payoffs. Throughout the region there are policy debates about whether decentralization should be pursued further, or whether some or all the elements of decentralization introduced so far should be reversed. Often these debates are related to discussion of such particular issues as school access, school quality, school financing, school management, and information related to schooling—and to interpretations of rather limited empirical evidence.

Decentralization may have an important impact on schooling and other human resource investments, mainly through its effect on the marginal cost curve. The higher the price charged, in reflection of higher costs, the less the quantity demanded by the public for schooling. Therefore, the efficiency with which education services are provided is of interest because of pressures on

fiscal deficits. In fact, as already noted, it would appear that fiscal concerns have often motivated interest in decentralization in DMCs at least as much as concerns about the effectiveness of the education sector.

The production of human resources-related services can be viewed similarly to the production of other services. To illustrate, consider the issue of what determines cognitive achievement by schools. Schools are institutions that use certain inputs (e.g., time of students, time of teachers, textbooks, and other materials) to produce products (e.g., greater cognitive achievement).¹⁸ How well such products are produced relates to various dimensions of economic efficiency, just as in other productive institutions in society. The school authority in this example can do best by using the resources that it employs fully and well in an engineering sense and by ensuring (i) allocative efficiency in distributing inputs among the production of various products; (ii) input choice efficiency to choose the right quantities of teachers' services, textbooks, and other inputs; and (iii) output compositional efficiency regarding the right quantities of increments in reading and math and other products, given the relative incremental values or prices that society places on these products. These three dimensions of efficiency are interdependent, which adds to the complexity of attaining them.

Information inadequacies further exacerbate the problems in attaining efficiency, as noted in subsection IV.E. For example, if the school authority had perfect knowledge of all the relative incremental social values (prices) of inputs and outputs and of the production technology, it could issue regulations to the schools to produce the socially optimal combination of reading and math increments and other products by purchasing the right combination of teachers' services and textbooks and other inputs, and then allocating them among reading and math and other products efficiently. It then could see that the regulations were followed through monitoring and could impose strong sanctions for any behavior that differed from that prescribed.

But in the real world, the situation is much more complex and information is quite imperfect. There are many more inputs and many more outputs, and the intensity efforts of some inputs (e.g., students, teachers) reflect behavioral choices. Information is quite imperfect regarding the social values for incremental outputs, the nature of the production technology for the outputs of interest, and even the social values for incremental inputs since, in some of the relevant markets, (e.g., the market for teachers) there may be substantial distortions due either to market failures (such as externalities) or policy distortions (laws and regulations relating to employment practices). Therefore, there may be an important role for improved information on schooling, as well as for the design of institutions that induce efficient behavior.

These information problems, particularly in the presence of heterogeneities (in prices, preferences, and endowments) and changing conditions are at the heart of proposals to make government services more responsive to local conditions. Examples of these proposals are decentralization, treating equally all public and private providers of such services, and mechanisms

¹⁸ Schools often are characterized by the levels of test scores or other outcomes, but what is of interest in assessing school performance is the "value added" (e.g., increases in—not the levels of—cognitive achievements). Schools with selective admissions may have high cognitive achievement but not much value added.

such as voucher systems and community groups through which at least some financial resources are channeled to increase the effective voice of clients for publicly subsidized services (rather than have all subsidies go directly through the supplying agencies). On a priori grounds, such proposals appear attractive.

But these possibilities are not without problems, many of which are rehashed in the interchange between Prud'homme (1995) and McLure (1995) on decentralization. Prud'homme, for example, claims that the "pure" case of complete decentralization can (i) increase disparities because interregional disparities are likely to be relatively great in comparison with intraregional disparities; (ii) jeopardize macro stability by shifting all fiscal functions to local jurisdictions; and (iii) undermine efficiency and increase corruption because local electorates are unlikely to express effectively their demand preferences, particularly in the presence of local power monopolies, and because decentralization focuses only on pressures for demand efficiency but not for production efficiency, particularly if there are economies of scale or of scope. McLure argues that this case of "pure decentralization" is a "person of straw" of little interest, and that Prud'homme's proposed remedies of differential decentralization of different functions (e.g., revenue versus expenditure functions, and stabilization versus local service provision, for different geographic areas and for different sectors) in fact is "little more than the conventional wisdom in this area" (p. 221). Prud'homme's position is probably useful as a reminder that decentralization needs to be more than a mantra to be repeated in the presence of inefficiencies; that a priori logic suggests that different functions might best be decentralized to different degrees in the interest of efficiency and distribution; that decentralization can be done badly; and that, in the inevitable presence of information problems, the development of competitive mechanisms and better monitoring potentially have great importance.

VI. DECENTRALIZATION IN PRACTICE

A great deal of decentralization in education around the world has been based on the assumption that the quality of instruction will improve by shifting decision making and accountability closer to children, classrooms, and schools. Moving the responsibility of decision making to local schools implies redistributing power from central bureaucrats to principals, teachers, and parents, who presumably have a greater stake in the content and quality of education. Proponents of decentralization believe that granting power and authority to these stakeholders will make schooling more responsive to the needs of local communities, and will more fully exploit the knowledge, creativity, and initiative of agents at the school and community levels.

At the same time, it is important to remember that both centralized and decentralized education systems have potential benefits and liabilities. After all, education in the United States (US) was very much a local responsibility up until the late 19th century (Fiske 1996). In response to the perceived inefficiencies and local corruption associated with the decentralized system, a movement arose in the early 20th century to centralize school administration under the leadership of education professionals in states and districts. The pendulum has now swung to the other extreme,

as a growing movement in the US now wants to decentralize education once again through such means as vouchers, charter schools, and school-based management (SBM). As Fiske puts it, “...every reform aimed at correcting abuses contains the seeds of the next set of problems.”

A number of specific reforms typically accompany decentralization of education. These include downsizing of the central education administration, devolution of administrative and financial authority to lower levels of government (such as provincial or local governments or school districts), SBM, community financing of education, curriculum reform, and school vouchers and demand-side financing. These are discussed further in the following paragraphs.

A. Downsizing of Central Bureaucracies in Education

An important correlate of decentralization in education is the downsizing of the central education administration. Decentralization results in the elimination of superfluous layers of bureaucracy, thereby improving the chains of command in decision making and delivering a larger proportion of financial and human resources directly to local governments, schools, and students. The money thus saved can be made available either to local governments, school districts, or directly to schools. However, more important than a mere reduction in the size of the central bureaucracy is a fundamental change in the role of a scaled-down central administration. The latter effectively becomes a service center that is accountable to schools and provides timely and appropriate support to local schools and communities.

B. Devolution of Authority to Local Governments

The most important aspect of decentralization is the devolution of spending, staffing, and education content (e.g., curriculum, testing) authority from a central administration to lower levels of government. In most developing countries, this has meant shifting decision-making power from central ministries of education down to the provincial, district, and municipal levels. Typically, decentralization is part of a larger devolution of administrative and budgetary authority from the central government to local governments, generally resulting from major political reform. During the 1980s, for example, decentralization in the administration and delivery of education and health took place in many countries in Latin America as a logical response to the process of political democratization taking place in these countries.

In Chile, decentralization of education took the form of municipalization—the formal transfer of public school administration at the primary and secondary levels to the municipalities, while technical-vocational schools were, for the most part, transferred to the private sector. The process of municipalization was implemented at a rapid pace in Chile, such that between 1980 and March 1982, 84 percent of all state-operated primary and secondary institutions had been transferred to the municipalities, a process that was completed by 1986 (Latorre et al. 1991).

In India, decentralization has accompanied the process of economic liberalization, as the country’s parliament has recognized the limitations of large, centralized bureaucracies in solving

the economic and social problems of communities. An innovative and unprecedented opportunity to empower local communities to control the important resources that affect them was offered by India's Parliament in the 73rd and 74th constitutional amendments—namely, the local government or Panchayati Raj Act of 1992. The Act gave control to elected village and urban councils (“*panchayati raj* institutions” or PRIs) over a wide range of social and development activities of governments, including education, health care, nutrition, and safe drinking water and sanitation. PRI members are elected. To redress historical inequities, the Act requires a third of PRI members to be women, who need to have a similar representation in PRI leadership positions. Scheduled castes and tribes are also required to have a representation on PRI councils in proportion to their population. The PRIs are funded by block grants from the state and central government budgets as well as from some local taxes (Fiske 1996).

In some states in India, village *panchayats* are already successfully organizing their communities to make better use of existing services, for example, by arranging transport to health units for medical emergencies, particularly for women in labor, maintaining hand-pumps and improving the village environment, and maintaining volunteer posts for village supply of contraceptives. In these states, village panchayats also ensure that the village school is adequately maintained, that teachers turn up for work, and that children attend school regularly.

Similarly, greater fiscal decentralization was mandated in the Philippines by the Local Government Code of 1991. Subsequent to its implementation, local government expenditures on education rose nearly sevenfold—from P0.8 billion in 1991 to P5.7 billion in 1996. This resulted in a large increase in the percentage of public spending on education accounted for by LGUs—from about 2.1 percent in 1990 to 8.3 percent in 1994 (ADB 1998b). Despite the increase, the share of LGUs in total public spending on education is modest in absolute terms, and reflects the fact that, unlike health and social welfare—where there has been much greater decentralization—education in the Philippines remains primarily the responsibility of the central Government.

Decentralization involves determining the appropriate level of government to which services should be transferred. Municipalities have been the focus of decentralization policies in education in many countries. However, state and federal agencies continue to be major actors in education delivery. For this reason, many advocates of decentralization emphasize the need for the federal government to guarantee the autonomy of decision making and public participation and to ensure cooperation among local governments.

C. School-Based Management

SBM is another avenue of decentralization that has been adopted by some countries to increase school autonomy and to devolve decision making to teachers and sometimes to parents, students, and community leaders as well. The idea behind SBM is that devolution of management authority and spending power to local governments is not enough. The school is where teaching and learning ultimately take place, and hence SBM is thought to hold the key to improving the education system by engaging those closest to the action in key decisions.

SBM typically involves the creation of a school committee or board—comprising teachers, parents, and community members—that, through legislative action, is empowered to make decisions in three areas: budget, personnel and staffing, and curriculum/programs. Thus, these “on-site administrators” become responsible for the distribution of money, allocation of resources, changes in instructional programs, the school calendar, and the school day. Obviously, the scope of local empowerment varies greatly across countries and across school districts. There are few developing countries where school committees have full authority over all three areas of decision making. Typically, school committees can simply control the use of funds allocated by a central authority, and exercise control in defining the types of support services needed and selecting the providers of those services. In other cases, school committees have authority in determining and implementing instructional improvements within the broad confines of a centrally mandated curriculum. In yet other situations, school committees have the authority to devise and implement their own staff development plans, but have no say in the hiring and firing of teachers, as teacher recruitment is handled by a central government authority (such as a teachers’ service commission).

A dimension in which the implementation of SBM varies across countries, regions, and school districts is in the extent of teacher collaboration. In an ideal SBM situation, teachers should play a key role in staff development, mentoring, and curriculum development, and become key partners in school and staff supervision and evaluation.

Another dimension in which the implementation of SBM varies from one context to another is the extent to which parents and community are involved as true partners in school decision making.

In the US, several states, such as Colorado, Florida, Kentucky, North Carolina, and Texas, have mandated some form of participatory decision making at every school. In addition, hundreds of districts in other states are engaged in the process. Large urban school systems, such as those in Chicago, Miami, Los Angeles, San Diego, and Rochester (New York) have taken steps toward “site-based management.” The City of Chicago, in fact, is a leader in this area, and has empowered local school councils that include administrators, teachers, parents, and community members to “hire and fire” school principals and make critical decisions about a school’s budget and programs.

In New Zealand, decentralization of education has meant that local schools are run by boards of trustees consisting of five elected parents, the school principal, an elected staff representative, and, in secondary schools, a student and four other people chosen to provide expertise or balance. A locally written charter that spells out the school’s goals and plans, but includes a compulsory section on curriculum, governs each school’s operation. Schools are still funded from the national treasury on a per pupil basis, and schools typically receive their entitlements in the form of a block grant or “bulk funding” plan that covers all expenses, including teacher salaries (Fiske 1996).

D. Community Financing of Education

Another form of decentralization that is common in many developing countries, often out of sheer necessity, is increased local (mainly community) financing of education. In some countries, particularly in Africa, government provision of education has all but collapsed owing to severe fiscal crises. This has resulted in a large increase in the number of community-financed schools in these countries. In Asia, there has long been a tradition of community-run schools in countries as disparate as Bhutan, People's Republic of China (PRC), Indonesia, Malaysia, and Nepal (Bray 1998). For instance, in 1990, 41 percent of all full-time primary teachers and 10 percent of all full-time secondary teachers in the PRC were employed by communities. In Nepal, communities operated 18 percent of secondary schools in 1991 with little or no support from the Government.

The main reason for the existence of community schools is to meet excess demand for schooling. While most communities would prefer the government to fully provide all schooling inputs, they recognize that this is not always possible or practical. Community schools therefore have arisen to make up for government shortfalls. In some cases, community financing has arisen to meet the demand for alternative forms of education. For instance, the minority Chinese community in Malaysia has formed community schools that extend the standard national curriculum by teaching Chinese language, history, and culture. In 1995, independent Chinese schools enrolled more than a quarter of the pupils in private secondary schools and represented 3.3% of total (public plus private) secondary school enrollments in Malaysia (Tan 1988). Similarly, in the mid-1980s, enrollments in community schools run by Islamic communities (and that fall under the control of the Ministry of Religious Affairs rather than the Ministry of Education and Culture) constituted 14, 12, and 9 percent of total primary, lower secondary, and upper secondary enrollments, respectively (World Bank 1989).

There are several ways in which community financing is typically provided. The most common government-community sharing formula is for the community to take responsibility for school capital—land, buildings, furniture—and for the government to provide teachers. While some community schools rely on parental and community cash contributions for capital projects, others, especially those in rural areas, encourage inputs in kind—typically, construction materials for buildings and food for students and teachers. In some rural community schools, community inputs in the form of labor for construction and maintenance, as well as for planting and harvesting crops that could be used in school meals, are encouraged.

Most governments typically provide teachers to community schools, and even prohibit communities from employing their own teachers, so that they can retain more control over curriculum and quality standards. However, in some countries, such as PRC, Myanmar, and Nepal, government resources are inadequate even for providing teachers, and communities therefore have to employ their own (Bray 1998). Even in countries where the government provides teachers in community schools, it is not unusual for communities to supplement teacher salaries, especially when official teacher salaries are very low. In such cases, communities typically raise the recurrent amount needed for teacher salary supplements through school “supplementary” fees.

E. Curriculum Reform

Curriculum reform essentially provides schools with the flexibility to adapt their education programs to meet the needs of their students. The objective of such reform is to promote quality and equality for all students through curriculum, instruction, and testing initiatives that are based on a realistic assessment of student preparedness and community needs. Often in developing countries, administrators see a centrally mandated and standardized curriculum as a way of instituting and implementing minimum instructional quality across disparate regions. However, this is often an elusive goal, and simply results in increasing the irrelevance of education for students in poor and underserved regions. For instance, there are often large interregional variations within a country in the proportion of secondary school students who go on to university. A curriculum that prepares secondary students for higher education may be appropriate in a region where a large proportion of secondary school students do this but inappropriate in another region where most secondary school students directly enter the labor force. In addition, an unrealistically rigorous national curriculum and high standards for national examinations can result in substantial internal inefficiency by raising dropout and repetition rates in poor regions.

While it is often thought that curriculum development requires a level of expertise that can only be provided by centralized and large agencies, there is a body of research showing that the professional interaction that results when teachers in local schools assemble to write curricula is a powerful force for improving education (Hannaway 1993).

F. School Vouchers and Demand-Side Financing

Another form through which education decentralization has been implemented is demand-side financing. This involves channeling public funds through students rather than through education institutions in the form of school vouchers, stipends, student loans, and targeted bursaries. School vouchers have been the most common form of demand-side financing in many developed countries and some developing countries. Under the school voucher system, the government provides students, particularly those from poor backgrounds, with vouchers that can be used to pay for tuition and entrance fees at any school, private or public. Under most voucher programs, there is a limit on the value of a voucher, which is typically equal to the cost of tuition at lower-priced private schools but is significantly less than the cost of tuition at the highest-priced private schools.

There are two main arguments for school vouchers. First, a voucher program enables access to higher-quality, private education for poor students who would ordinarily not be able to afford it. Second, by making public schools compete with private schools for students, the system puts pressure on public schools to improve the quality of the education that they offer. The net result is increased efficiency and greater accountability in both public and private schools.

As King et al. (1998) have argued, the issue of providing poor students with a choice between public and private schools is secondary in developing countries. In most of these countries, students, especially at the secondary level, do not have any access to public schooling because of insufficient

public school capacity. This is especially true in remote, poor regions. A voucher system encourages private-sector delivery of education in such areas, and allows students who would otherwise not have gone to school to obtain an education.

While the “school-choice” movement has gained enormous political momentum in industrial countries (particularly the US), there are few developing countries that have moved in this direction. Colombia is a notable exception. It launched a national voucher program in 1991 under which vouchers were targeted to the poorest students, with poverty status being determined geographically (on the basis of census data on poverty). In 1995, students in 1,800 private schools in 217 municipalities used about 90,000 vouchers. Voucher students accounted for 8 percent of all students in private secondary schools (King et al. 1998). No country in Asia has a national voucher program. The Government of Thailand, however, is considering instituting a voucher scheme at the secondary level to expand secondary school enrollments.¹⁹

VII. POTENTIAL EFFECTS OF DECENTRALIZATION

The general considerations regarding decentralization (all of the second part of this working paper) and the discussion of the issues that underlie some of the considerations of decentralization (Section VI) both suggest that the potential effects of decentralization may depend critically on what is being decentralized and on how it is being decentralized. Therefore, the potential effects of some major aspects of possible decentralization are covered here in separate subsections.

A. Impact of Financial Decentralization

The starting point for considering financial decentralization is establishing the extent of user fees for public schools. (It is not clear that there should be public regulations regarding user fees for nonpublic schools.) If such fees are paid and maintained at a local level, their collection and expenditure are important components of decentralized financing. From an efficiency perspective, user fees should be set equal to the private marginal benefits of each school level, which has at least three important implications. First, because all levels of schooling probably have positive private marginal benefits in DMCs, there should be positive user fees for all levels of schooling. Second, if the private marginal benefits are higher for upper secondary and tertiary schooling than for basic schooling, then user fees should be higher for these schooling levels (and vice versa). Third, at least for basic schooling, the marginal private benefits are likely to differ geographically in part because of marginal cost and quality differentials, so setting the rates at

¹⁹ Thailand has one of the lowest secondary school enrollment rates of any country at its level of per capita income (Deolalikar et al. 1997; ADB 1998c).

local levels is likely to be more efficient.²⁰ From a distribution perspective, there may be reasons for lowering some user fees to below what would be warranted on pure efficiency grounds, particularly for basic schooling and for targeted poor students. These concerns will almost certainly vary widely geographically.

Beyond user fees are public subsidies for schooling that should be determined by the efficiency (i.e., divergences between the social and private marginal rates of return) and distribution considerations that were discussed in subsection III.B. There are at least three major questions related to decentralization of these subsidies.

First is the question of the types of schools that subsidies should apply to. From an efficiency perspective, they should vary by school level, quality, and orientation to the extent that there are variations in the degree to which the marginal social rates of return exceed the marginal private rates of return by school level, quality, and orientation. But there is not an obvious reason that they should vary by ownership of the school, whether it be pure public, mixed, nongovernment organization (NGO), pure private, or some other combination.

Second is the question of the extent to which these subsidies should be channeled through the demand side (i.e., through households using vouchers or through community groups). On a priori grounds, one attractive dimension of financial decentralization is probably to increase substantially demand-based financing in which public subsidies are transferred through parents or community groups rather than, as in supply-side financing, entirely through schools and other education institutions—historically the dominant channels of such subsidies. This has the distinct advantage of creating incentives for education institutions to be more responsive to the demands of their major clients, and thereby limiting the effects of one major information problem that is pervasive in the traditional centralized system. Thus, there is potential for significant improvements in access, quality, and management as perceived by parents and communities. In contrast, supply-side financing creates incentives for teachers and staff to focus on satisfying those who are in the next higher rank of the education hierarchy—ultimately, in most DMCs, those in the Ministry of Education in the capital city, a group that is not likely to be very well informed about local conditions, preferences, and perceptions. Arguably, some of the subsidies should still be channeled through the supply side, even if most are channeled through the demand side, because there will still need to be some accountability to more centralized authorities with regard to information and disclosure requirements.

Third is the question of the extent to which the resources for public subsidies for local schooling should be raised locally. There seems inevitably to be some opposing considerations on this point. On the one hand, one of the advantages of decentralization is to accommodate better heterogeneities in preferences and perceptions, so local decisions regarding the value of raising funds to finance local schools may be more efficient than more centralized decisions. There is also some evidence from DMCs, as noted in subsection IV.C, that at least some local involvement in

²⁰ For higher schooling levels, the labor markets are likely to be more integrated and centered on major metropolitan areas so there may not be important differences in private marginal benefits by locality.

financing local schools leads to greater parental involvement in schooling and more successful schooling. On the other hand, schools may have social benefits beyond private benefits either from an efficiency perspective or from a distribution perspective that accrue to the nation rather than just the locality. For this reason, it is desirable to raise some of the funds nationally and transfer them to localities in which the social benefits, for efficiency and distribution reasons, are relatively large. But such a process inevitably involves some element of negotiation and compromise, in part because of the imperfect information about local conditions that motivates much of the decentralization in the first place.

Aside from the question of local authority over setting user fees and raising public subsidies for education, is the question of how effectively local authorities, such as provincial or district education officers and school boards, will be able to utilize the budgetary funds transferred to LGUs and schools as part of financial decentralization. The local units have considerable discretion over how these resource transfers or block grants are spent. There is concern in some quarters that local governments and schools, lacking experience and skills in managing such funds, may use these funds inappropriately. In addition, there could be a significant waste of budgetary funds through local corruption and fraud in the absence of effective controls and audits.

On the other hand, it is possible that local governments and schools might be able to use the funds more effectively, as they have better information about local needs and local costs of goods and services. Data for the Philippines show that school construction costs were lower when local governments rather than the central Government carried out construction projects (ADB 1998b). In the Philippines, as part of the devolution moves in construction and maintenance of local infrastructure, responsibility for such construction and maintenance of public primary and secondary school buildings rests almost entirely with municipal and local governments.

If decentralization involves raising the resources for public subsidies for education locally, it runs the risk of unfairly favoring more prosperous municipalities and regions relative to those that have a weaker revenue base. Again, this is not an argument against decentralization; it simply suggests that the central government needs to compensate for such regional differences by providing larger national subsidies for education to poorer local governments and municipalities.

Little empirical evidence exists on the effects of financial decentralization in the education sector. Evidence from Brazil suggests that the decentralization of primary education has resulted in an absolute drop in the overall level of spending on education. Between 1988 and 1991, for instance, spending on education at the federal level dropped from \$8.1 billion to \$3.9 billion; state-level spending remained at approximately \$7.6 billion; and that in municipalities rose from \$3.2 billion to \$4.7 billion (Workman 1997). Thus, the municipalization of education resulted in a net loss of \$2.7 billion in total public spending on education. Such a cut in overall funding would be expected to have an adverse impact on the education system as a whole.

Likewise, it has been argued that the cost of municipalized education has proven a strain on small municipal budgets in Chile (Latorre et al. 1991). This situation has been exacerbated in poorer municipalities with fewer resources, a lower tax base, and thus smaller overall operating budgets.

In India, the process of fiscal decentralization is still under way. States had until June 1995 to set up their panchayati raj institutions, and the first elections were held only in 2000, so it is too early to fully assess the overall impact of the changes. However, the experience of the “early starter” states in India suggests that the local tax bases, on which the panchayati raj institutions must raise their revenues, are often weak.

However, many of the negative effects of fiscal and financial decentralization should be viewed as teething problems that accompany any fundamental reform. It is useful to quote Hannaway’s (1995, p. 14) view of India’s “democratic decentralization”: “In the short run, there may be tremendous inefficiencies, but for many in India these inefficiencies will be well worthwhile if, in the long run, a culture of participation and vigilance emerges at the community level.”

B. Impact of Management Decentralization

From an efficiency perspective, all else being equal, management decentralization is desirable because it leads to greater responsiveness to local conditions and preferences, thus leading to more effective education. In addition, monitoring education delivery may be easier if the community is involved in it. At a very minimum, the involvement of teachers in school management is likely to improve their morale and thereby the quality of education they impart to students.

Financial decentralization of the types discussed in subsection VII.C, without management decentralization, is unlikely to be very effective. Only if local school managers and teachers can make real decisions regarding the education process is financial decentralization likely to attain its desired results. On the other hand, management decentralization without much financial decentralization may also not be very effective. If local school managers are very restricted in the ways that they can use finances, they may not be able to make changes that increase the productivity and effectiveness of their schools. If there are centralized restrictions on teacher salary scales that tie salaries to tenure and credentials, for example, local flexibility may be severely constrained in fact, even if it is substantial in principle.

From a distribution perspective, management decentralization also has considerable potential. Managers who are more decentralized are more likely to be able to understand and accommodate the special needs and constraints of students from poorer households. For example, greater flexibility in school hours may be critical if children from poorer households are constrained by work or by sibling-care responsibilities while their parents are working.

There are at least two major questions about management decentralization that need to be addressed. First is the widespread concern, among those who question the wisdom of too much decentralization, over whether local managers have sufficient skills to manage well, particularly during the transition from more centralized systems. SBM, in particular, requires teachers and principals to function both as teachers and as skilled managers. Since this has not been their traditional function, they need to be trained in management and accounting practices. Otherwise, SBM would take decision-making power out of the hands of able administrators and put it into the hands of a group of arbitrary and contentious amateurs. Therefore, in a number of cases,

management decentralization has been accompanied by management training programs. For instance, as part of India's devolution of social service delivery to panchayati raj institutions, the Indian Government has embarked on a large national training program to equip the million plus women and scheduled caste members of the village panchayats to manage local government effectively and transform them into effective agents of social change. The training programs highlight the role that they can play in achieving goals like universal primary education, assurance of sanitation and safe drinking water, eradication of child malnutrition, and full immunization coverage.

The second widespread concern is that decentralized managers will not be monitored as well as under more centralized systems at the same time that they have greater responsibilities, so that the possibilities for sustained abuse or incompetence increase with management decentralization. This would seem to imply that it is important that information be made more available so that the local community can come to a judgment about the degree of management success and that there be competition (fostered in part by demand-side decentralization as discussed in subsection VII.A), so that parents can be effective in acting on their perceptions of the relative quality of different local schooling options by moving their children from one school to another.²¹

The experience of Brazil suggests that management decentralization may not always result in local schools making the "correct" decisions, at least in the short run. It is usually assumed that local actors are more responsive than national actors to local demands, and as such would be expected to consider more favorably wage increase demands by teachers. Salary increases for teachers are regarded as one of the most important prerequisites for improving the quality of education. In Brazil, however, decentralization of primary education has not done much to improve teacher salaries. Indeed, teacher salaries are significantly lower in municipal school systems than in schools run by the state government (Workman 1997).

C. Impact of Curricular Decentralization

From both efficiency and distribution perspectives, curricular decentralization has the positive potential of more general management decentralization, permitting greater accommodation to local preferences and perceptions, as well as to local pedagogical strengths and weaknesses. But some tensions are evident regarding the extent of desired decentralization of curricular decisions. First of all, local managers may be more sensitive to local conditions, but possibly less sensitive to broader conditions in the more integrated national labor markets in which local students will be using the skills developed in local schools. Second, the practice of adapting local curricula and testing standards to the cognitive ability of local students runs the risk of exacerbating interregional disparities in the content and quality of education provided and polarizing the delivery

²¹ Very small or isolated communities may have no viable alternative local options for the lower levels of schooling. For this purpose, distance learning by means such as radio may be important to create competition.

of education services along income lines. This will put students in poor and minority municipalities and communities at a disadvantage in the national labor market relative to those in prosperous communities. Third, there may be problems in providing information about the value added of different schools if there is excessive heterogeneity in local curricular offerings.

This suggests that there should continue to be a role for some centralized education agencies even within a system of decentralized curricula. The national government should take on a regulatory role to ensure that students from all municipalities and communities meet at least some basic learning and skills standards. Indeed, it could be argued that the regulatory role of the national government in setting and enforcing minimum education standards is even more important in a decentralized than centralized education system.

VIII. FACTORS INFLUENCING THE SUCCESS OF DECENTRALIZATION

Decentralization of education is not an end in itself, but it may be an important means to help improve education. Factors that influence the success of decentralization, therefore, should be interpreted to mean factors that influence desirable decentralization. Some of these factors are now discussed one by one, though a number of these factors, of course, interact.

A. Information

As noted above, information problems are central to the efficiency and, in at least some respects, to the distribution arguments for decentralization. Moreover, there are certain respects in which information may critically affect the success of decentralization.

One basic question about which information is scant is what can be expected from decentralization of different types and in different contexts. Some systematic studies from DMCs and from other developing countries are available, to which references were made in Section VII. But these are limited. There are also a priori arguments about the impact of different aspects of decentralization that were reviewed in that section. But these often hinge on empirical magnitudes about which knowledge is limited. The basic contribution of the present study is to improve somewhat this information basis.

A second fundamental question about information is the extent to which clients in decentralized systems can make informed choices and thus use demand-side pressures to improve the delivery of education services. As discussed in subsection IV.E, private markets are unlikely to provide sufficient information from a social perspective for these purposes. It is therefore desirable to have public subsidization of information that will help potential clients evaluate the value added of different schools and other education institutions. That still leaves open the question of what information will serve this purpose, a question that probably has no perfect answer. *What is desired is a set of measures of the returns to different types of schooling.* Longitudinal data on improvements in cognitive achievement tests and tracer studies of past graduates may provide some useful

information. But there are dangers of encouraging “teaching the tests” or of means of making the learning gains appear greater than they are by selective giving/reporting of test results. Independent tests can alleviate the latter problem, but probably not the former.

A third basic question relates to how to provide information that can be used for assessments of distributions among localities of resources raised at the regional or national level. As argued in subsection VII.A, there may be good efficiency and distribution reasons for redistribution of some resources among localities. But the same information problems that make some aspects of decentralization attractive make it difficult to know what criteria should be used for such redistribution. For pure distribution purposes it would be desirable to have criteria that are related to the nature of the distribution targets (e.g., poverty incidence) and that are not manipulable by schools. However, the problems are more severe (and related to those mentioned in the previous paragraph) if, in the interests of transparent and effective stewardship of public funds, assessment of the effectiveness of the use of funds is used in part to guide their distribution across localities. This information problem is another reason why it would be desirable to increase substantially demand-side financing so that those with better information at the local level could channel public subsidies for education to what they perceive to be better uses.

Ultimately, it must be recognized that information problems are probably central to improving education and are difficult to resolve. Combinations of changed institutions—including decentralization—and public subsidized information can improve education in DMCs. Information problems are unlikely to be eliminated entirely though, and they will change in their form, so ongoing attention will need to be paid to means of lessening their impact.

B. Vested Interests

Most DMCs (as with other countries) have strong vested interests in existing relatively centralized systems. These include government bureaucrats at the national and regional levels who find a more centralized system more desirable for patronage reasons, and large numbers of school staff and teachers who, in most countries, constitute a considerable percentage of public employees. The latter are likely to resist change both because they are unsure that they will have a payoff and because their own livelihoods may appear to be threatened. One way of viewing the education establishment is that it is attempting to maximize an objective function that not only includes learning by students but also includes the welfare of the teachers. If the education establishment is allowed to set the terms on which education is provided, it will advocate means of delivering education services that are more intensive in teacher services and more rewarding for teachers than would result if the objective of education was to maximize value added of the sector alone. The move toward decentralization, therefore, is likely to be somewhat threatening to the education establishment because it is a move toward organization of the education system in which the welfare of teachers and school staff is not directly part of the objective function of the education system any more than the welfare of employees in other sectors is part of the objective functions that are being maximized.

Colombia provides an example of vested interests opposing the process of decentralization. The teachers' union in that country vigorously resisted proposals for school decentralization, as much of its political muscle came from its ability to negotiate national contracts. Using its power to strike, the union substantially whittled down the scope of education decentralization. For example, local schools did not receive the autonomy to select, hire, and discipline teaching staff. These decisions were left to "education councils" in which teachers were represented. A system of teacher evaluation was established, but measures of student outcome, such as test scores, were excluded from consideration as evaluation indicators (Fiske 1996). Thus, the organized teacher lobby prevented full-scale municipalization of basic education and school autonomy.

A combination of "carrot and stick" is probably the best means to ease the transition from centralized to decentralized systems. On the carrot side, most members of the education establishments in most DMCs do indeed value the importance of learning and agree that current systems are not working well enough, so that changes are needed. They need to be persuaded of the potential gains in terms of their own, as well as society's, objectives of improvements in education that are expected to result from education reforms. On the other hand, it is important that demand-side pressures be increased and barriers to entry of new providers of education services be reduced (e.g., with equal treatment of all schools, independent of type of ownership), so that there are competitive pressures for change to occur that cannot be blocked too easily by those with vested interests in the perpetuation of centralized government monopolies for such services.

Just as there are vested interests in centralized systems that can slow the process of decentralization reform, vested interests can emerge and take control of decentralized education systems to subvert the reform process. In India, there is evidence that in some states the local elite has captured control of the new panchayati raj institutions. This has occurred despite the constitutional mandate requiring adequate representation of women, scheduled castes, and minorities in these institutions.

C. Incomplete Decentralization

Decentralization is best viewed as a package of fiscal, management, and curricular reforms. Linkages among budget, personnel, instructional, and operational decisions mean that decentralized authority ostensibly given to local governments and local schools over one class of decisions will be severely limited by centralized constraints on other classes of decisions. For decentralization to work effectively, all elements of the decentralization package need to be implemented simultaneously. In a worst-case scenario, implementing one element of the package without the other elements can make the quality of schools and student learning worse than before. Indeed, this is probably the main reason for the limited observed success of decentralization in most developing countries.

Examples abound of the inefficiency of this "second-best" solution to education decentralization. Even in the school districts in the US that ostensibly practice full school autonomy, local schools have discretion over the selection of supplementary textbooks but not over the resources

available for education materials. Discretion over the latter resides with the parent school district. This means that few schools have full choice over the selection of supplementary textbooks. In many developing countries with decentralized school management, local schools have no authority to hire, fire, or discipline teachers, as teacher recruitment and placement decisions are made by a centralized agency, such as a teachers' service commission. Likewise, most developing countries, even those with ostensibly decentralized education systems, have centralized and standardized curricula and examinations, so local schools have little flexibility in tailoring the content of their education programs to local needs and capabilities.

D. Local School Management Capabilities

In most DMCs, local school management capabilities are quite limited, though there are examples of extraordinarily capable local school managers. This is in part because the skills that were developed in traditional centralized systems are not the same skills that are needed for decentralized systems. Because there is a social interest in facilitating improvements in the education system, there may well be a social interest—beyond the private interest in training programs to improve the relevant management skills of local school managers—that is justified on efficiency grounds. There may be a social interest in improving such skills, particularly for school managers who will be working in poorer areas on distribution (antipoverty) grounds. Of course there is nothing in either the efficiency or the distribution justifications for such subsidies that means that such training should be subsidized only for managers of certain types of schools.

E. Local Parental and Community Capabilities

Local parental and community capabilities may be critical, particularly for the success of demand-based mechanisms, to induce more effective and responsive schooling. Because there is a social interest in facilitating improvements in the education system, there may well be a social interest—beyond the private interest in providing support for such community groups to improve their capabilities for dealing with schools—that is justified on efficiency grounds. It would appear that, currently, these capabilities are greater in communities with more educated and higher-income adults. Therefore, on distribution grounds, it would appear to be the case that such support is warranted, for poorer communities particularly. But it should be recognized that in some poorer communities the creation and empowerment of community groups might not be easy because such moves may threaten well-established and traditional powerful interests.

F. Competition

Mechanisms for increasing competition in the education system are important to circumvent some of the information problems and to induce more effective delivery of education services. For this reason, factors that are important include the empowerment of clients (parents, students,

communities) through demand-based financing of public subsidies that are warranted on efficiency or distribution grounds, equal treatment of all potential providers of education services with no discrimination by type of ownership, and encouragement of methods such as distance learning that might bring widespread competition even into relatively isolated communities.

IX. CONCLUSIONS

There have been considerable pressures for decentralization of education in DMCs in recent years. These pressures have largely been driven by fiscal constraints but have also been motivated by concerns over the effectiveness of a centralized system in delivering education services. While virtually all DMCs have made impressive gains in expanding the coverage of primary schooling, enrollment rates remain generally lower than the level that, many argue, would be desirable at secondary and tertiary levels, particularly for children coming from disadvantaged backgrounds. The quality of education is also a cause for concern, judging by dropout and grade repetition rates, national achievement test performances, and international comparisons of achievement test scores.

All DMCs have adopted some elements of decentralization in their education systems. These include devolution of authority and responsibility for schools from central to local levels, increased local financing of schools, decentralization of school functions, and reform of the incentive structure of schools and their teachers. However, it is not often clear that the measures adopted have led to improvements in education. There is not much evidence that decentralization has been successful in improving education in DMCs, in part because of inattention to the importance of collecting critical data for such evaluations (including baseline data with longitudinal follow-up for randomly selected treatment and control groups) and perhaps in part because decentralization measures in most countries so far have been incomplete, with decentralization strategies adopted in parts and not as a whole. There is still no clear understanding of the economic and institutional conditions under which decentralization leads to more effective education.

However, it is hoped that this working paper has contributed to the overall perspective for analyzing education decentralization in DMCs in the region and to knowledge of education developments and correlates and possible effects of some particular aspects of education decentralization. But, in terms of assessing systematically, with appropriate data, education decentralization in the region, it has only scratched the surface.

There would be considerable potential gains in further understanding the impact of decentralization in the education sector by extending the type of analysis undertaken in this project. For instance, given that decentralization is often correlated with unobserved community characteristics, such as its governance structures, motivation of its leaders, and the quality of its schoolteachers, it is important to control for these fixed effects in analyzing the impact of decentralization on student outcomes. This can only be accomplished by obtaining longitudinal data from future education decentralization efforts (including baseline data and random assignment of which areas are phased in initially) and further systematic research undertaken that builds upon the foundations established by this project.

REFERENCES

- Alderman, H., J. R. Behrman, V. Lavy, and R. Menon, 2001. "Child Nutrition, Child Health, and School Enrollment: A Longitudinal Analysis." *Journal of Human Resources*.
- Ashenfelter, O., and A. Krueger, 1994. "Estimates of the Economic Return to Schooling from a New Sample of Twins." *American Economic Review* 84(5, December):1157-74.
- ADB (Asian Development Bank), 1998a. *Financing of Education in Indonesia*. Asian Development Bank-University of Hong Kong.
- , 1998b. "Education Finance in the Philippines." ADB/IBRD Philippines Education Sector Study (TA No. 3072-PHI). Asian Development Bank, Manila. Mimeo.
- , 1998c. *Restructuring and Improving Secondary Education, Volume 1: Project Proposal*. Asian Development Bank, Manila.
- ADB and World Bank, 1999. *Philippine Education for the 21st Century. The 1998 Philippine Education Sector Study*. Manila.
- Bacolod, M., and E. M. King, 2000. "The Effects of Family Background and School Quality on Low and High Achievers: Determinants of Academic Achievement in the Philippines." World Bank, Washington, D.C. Mimeo.
- Bashir, 1997. "The Cost Effectiveness of Public and Private Schools: Knowledge Gaps, New Research Methodologies, and an Application in India." In C. Colclough, ed., *Marketizing Education and Health in Developing Countries: Miracle or Mirage?* Oxford: Clarendon Press.
- Becker, G. S., 1967. "Human Capital and the Personal Distribution of Income: An Analytical Approach." University of Michigan, Woytinsky Lecture, republished in G. S. Becker, *Human Capital*, 2nd ed. New York: NBER.
- Behrman, J. R., 1997. "Conceptual and Measurement Issues and Policies." In J. R. Behrman and N. Stacey, eds., *Social Benefits of Education*. Ann Arbor, MI: University of Michigan Press.
- Behrman, J. R., and N. Birdsall, 1983. "The Quality of Schooling: Quantity Alone is Misleading." *American Economic Review* 73:928-946.
- Behrman, J. R., and A. B. Deolalikar, 1993. "Unobserved Household and Community Heterogeneity and the Labor Market Impact of Schooling: A Case Study for Indonesia." *Economic Development and Cultural Change* 41(3, April):461-88.
- Behrman, J. R., and J. C. Knowles, 1998a. "Population and Reproductive Health: An Economic Framework for Policy Evaluation." *Population and Development Review* 24(4, December):697-738.
- , 1998b. "The Distributional Implications of Government Family Planning and Reproductive Health Services in Vietnam." Paper prepared for the Rockefeller Foundation, Philadelphia. Mimeo.
- , 1999. "Household Income and Child Schooling in Vietnam?" *World Bank Economic Review* 13(2, May):211-56.
- Behrman, J. R., and V. Lavy, 1998. "Child Health and Schooling Achievement: Association, Causality and Household Allocations." University of Pennsylvania. Mimeo.

- Behrman, J. R., and M. R. Rosenzweig, 1999. "Ability' Biases in Schooling Returns and Twins: A Test and New Estimates." *Economics of Education Review* 18:159-67.
- Behrman, J. R., and R. Schneider, 1994. "An International Perspective on Schooling Investments in the Last Quarter Century in Some Fast-Growing East and Southeast Asian Countries." *Asian Development Review* 12(2):1-50.
- Behrman, J. R., A. B. Deolalikar, and L. Y. Soon, 2002. The Role of Education Decentralization in Promoting Effective Schooling in Bangladesh, Indonesia, and Philippines. ERD Working Paper No. 23, Asian Development Bank, Manila. Forthcoming.
- Behrman, J. R., M. R. Rosenzweig, and P. Taubman, 1994. "Endowments and the Allocation of Schooling in the Family and in the Marriage Market: The Twins Experiment." *Journal of Political Economy* 102(6, December):1131-74.
- , 1996. "College Choice and Wages: Estimates Using Data on Female Twins." *Review of Economics and Statistics* 73(4, November):672-85.
- Behrman, J. R., D. Ross, R. Sabot, and M. Tropp, 1997. "Improving the Quality Versus Increasing the Quantity of Schooling." University of Pennsylvania. Mimeo.
- Birdsall, N., 1985. "Public Inputs and Child Schooling in Brazil." *Journal of Development Economics* 18(1, May-June):67-86.
- Biswal, B. P., 1998. "The Implications of Private Tutoring on School Education in LDCs." *Journal of Policy Reform*.
- Bouis, H. E., and L. J. Haddad, 1992. "Are Estimates of Calorie-Income Elasticities Too High? A Recalibration of the Plausible Range." *Journal of Development Economics* 39(2, October): 333- 64.
- Bray, M., 1998. Financing Education in Developing Asia: Patterns, Trends, and Policy Implications. Working Paper Prepared for the Asian Development Bank.
- Card, D. E., 1995. "Earnings, Schooling, and Ability Revisited." *Research in Labor Economics* 14:23-48.
- Card, D., and A.B. Krueger, 1995. *Myth and Measurement: The New Economics of the Minimum Wage*. Princeton, NJ: Princeton University Press.
- Deaton, A., 1995. "Data and Econometric Tools for Development Analysis." In J. R. Behrman and T. N. Srinivasan, eds., *Handbook of Development Economics*, Vol. 3A. Amsterdam: North-Holland Publishing Co..
- Deolalikar, A. B., 1996. "Child Nutrition and Child Growth in Kenya: Socioeconomic Determinants." *Journal of International Development* 8(3):375-93.
- Deolalikar, A. B., and E. Rose, 1998. "Gender and Savings in Rural India." *Journal of Population Economics* 11(4):453-70.
- Deolalikar, A. B., R. Hasan, H. Khan, and M.G. Quibria. 1997. "Competitiveness and Human Resource Development in Asia." *Asian Development Review* 15(2):131-63.
- Dreze, J., and H. Gazdar, 1997. "Uttar Pradesh: The Burden of Inertia." Manuscript.
- Duraiswamy, P., E. James, J. Lane, and J.P. Tan, 1997. Is There a Quantity-Quality Tradeoff as Enrollments Increase? Policy Research Working Paper 1768, World Bank, Washington, D.C.

- Fiske, E., 1996. Decentralization of Education: Politics and Consensus. Directions in Development Series, World Bank, Washington, D.C.
- Foster, A. D., and M. R. Rosenzweig, 1996. "Technical Change and Human-Capital Returns and Investments: Evidence from the Green Revolution." *American Economic Review* 86(4, September):931-53.
- Fuller, B., and M. Rivarola, 1998. "Nicaragua's Experiment to Decentralize Schools: Views of Parents, Teachers, and Directors." Development Economics Research Group, The World Bank, Washington, D.C. Mimeo.
- Glewwe, P., 1996. "The Relevance of Standard Estimates of Rates of Return to Schooling for Education Policy: A Critical Assessment." *Journal of Development Economics* 51(2, December): 267-90.
- Glewwe, P., and H. Jacoby, 1995. "An Economic Analysis of Delayed Primary School Enrollment and Childhood Malnutrition in a Low Income Country." *Review of Economics and Statistics* 77(1, February):156-69.
- Hannaway, J., 1993. "Decentralization in Two School Districts: Challenging the Standard Paradigm." In J. Hannaway and M. Carnoy, eds., *Decentralization and School Improvement: Can We Fulfill the Promise?* San Francisco: Jossey-Bass Publishers.
- , 1995. "The Problems and Promise of Top-Down Decentralization: The Case of India." Paper prepared for the World Bank's Seminar on Education Decentralization, Washington, D.C., 2 June.
- Hanushek, E. A., 1995. "Interpreting Recent Research On Schooling in Developing Countries." *The World Bank Research Observer* 10(2, August):227-46.
- Harbison, R. W., and E. A. Hanushek, 1992. *Education Performance of the Poor: Lessons from Rural Northeast Brazil*. New York: Oxford University Press for the World Bank.
- Heckman, J. J., R. L. Roselius, and J. A. Smith, 1994. "U.S. Education and Training Policy: A Re-evaluation of the Underlying Assumptions Behind the 'New Consensus'." In L. Solmon and A. Levenson, *Labor Markets, Employment Policy and Job Creation*. Boulder, CO: Westview Press.
- Hedges, L.V., R. Laine, and R. Greenwald, 1994. "Does Money Matter? A Meta-Analysis of Studies of the Effects of Differential School Inputs on Student Outcomes." *Education Researcher* 23(3):5-14.
- James, E., E. M. King, and A. Suryadi, 1996. "Finance, Management, and Costs of Public and Private Schools in Indonesia." *Economics of Education Review* 15(4):387-98.
- Jimenez, E., M. E. Lockheed, and V. Paqueo, 1991. "The Relative Efficiency of Private and Public Schools in Developing Countries." *The World Bank Research Observer* 6(2, July):205-18.
- King, E. M., and M. Anne Hill, eds. 1993. *Women's Education in Developing Countries: Barriers, Benefits, and Policies*. Baltimore and London: The Johns Hopkins University Press for the World Bank.
- King, E., P. Orazem and D. Wolgemuth, 1998. Central Mandates and Local Incentives: The Colombia Education Voucher Program. Working Paper Series on Impact Evaluation of Education Reforms

- No. 6 (February), World Bank, Washington, D.C.
- King, E. M., and B. Özler, 2000. What's Decentralization Got to Do With Learning? The Case of Nicaragua's Education Reform. Development Research Group, Impact of Education Reforms Working Paper No. 9 (revised), World Bank, Washington, D.C.
- Kingdon, G. G., 1996. "The Quality and Efficiency of Private and Public Education: A Case-Study of Urban India." *Oxford Bulletin of Economics and Statistics* February:57-82.
- Knight, J. B., and R. H. Sabot, 1990. *Education Productivity and Inequality: The East African Natural Experiment*. New York: Oxford University Press.
- Kremer, M. R., 1995. "Research on Schooling: What We Know and What We Don't: A Comment on Hanushek." *World Bank Research Observer* 10(2, August):247-54.
- Latorre, C. Luz, I. Nunez, L. E. Gonzalez, and R. Hevia, 1991. "La municipalizacion de la education: una mirada desde los administradores del sistema." PIIE, Santiago.
- Lockheed, M., and E. Jimenez, 1994. Public and Private Schools in Developing Countries. HRO Working Paper No. 43, World Bank, Washington, D.C.
- Maglen, L., and R. G. Manasan. 1999. "Education Costs and Financing in the Philippines." Technical Background Paper No. 2 in Asian Development Bank and World Bank, *Philippine Education for the 21st Century. The 1998 Philippine Education Sector Study*.
- Manasan, R. G., 2002. The Philippines: The Role of Education Decentralization in Promoting Effective Schooling. ERD Working Paper No. 24, Asian Development Bank, Manila. Forthcoming.
- Masum, M. G., 2000. "The Role of Education Decentralization in Promoting Effective Schooling: Bangladesh." Asian Development Bank, Manila. Unpublished.
- McLure, C. E., Jr., 1995. "Comment on Prud'homme." *The World Bank Research Observer* 10:221-26.
- Miller, P., C. Mulvey, and N. Martin, 1995. "What Do Twins Studies Tell Us about the Economic Returns to Education? A Comparison of US and Australian Findings." *American Economic Review* 85:586-99.
- Mingat, A., and J. P. Tan, 1996. The Full Social Returns to Education. Human Capital Working Papers, World Bank, Washington, D.C.
- Moffitt, R. A., 1996. "Introduction," Symposium on School Quality and Education Outcomes." *Review of Economics and Statistics* 78(4, November):559-61.
- Munshi, K., 1997. "Farmers as Econometricians: Social Learning and Technology Diffusion in the Indian Green Revolution." Boston University. Mimeo.
- Pritchett, L., and D. Filmer, 1997. What Education Production Functions Really Show. Policy Research Working Paper 1795, World Bank, Washington, D.C.
- Prud'homme, R. 1995. "The Dangers of Decentralization." *The World Bank Research Observer* 10:201-20.
- Psacharopoulos, G., 1994. "Returns to Investment in Education: A Global Update." *World Development* 22(9, September):1325-44.
- Riddell, A., 1993. "The Evidence on Public/Private Education Trade-Offs in Developing Countries."

- International Journal of Education Development* 13(4):373-86.
- Rosenzweig, M. R., and K. Wolpin, 1980. "Testing the Quantity-Quality Model of Fertility: Results of a Natural Experiment—Twins." *Econometrica* 48(1, January):227-40.
- , 1993. "Credit Market Constraints and the Accumulation of Durable Production Assets in Low-Income Countries: Investments in Bullocks." *Journal of Political Economy* 101(2, April):223-45.
- Srinivasan, T. N., 1994. "Data Base for Development Analysis: An Overview." *Journal of Development Economics* 44(1, June):3-26.
- Strauss, J., and D. Thomas, 1995. "Human Resources: Empirical Modeling of Household and Family Decisions." In J. R. Behrman and T. N. Srinivasan, eds., *Handbook of Development Economics*, Volume 3A. Amsterdam: North-Holland Publishing Company.
- Sussangkarn, C., 1990. "Thailand." In Asian Development Bank, *Human Resource Policy and Economic Development*. Economics and Development Resource Center, Asian Development Bank, Manila.
- Tan, L. E., 1988. "Chinese Independent Schools in West Malaysia: Varying Responses to Changing Demands." In J. Cushman and G. Wang, eds., *Changing Identities of the Southeast Asian Chinese since World War II*. Hong Kong: Hong Kong University Press.
- Thomas, D., J. Strauss, and M. H. Henriques, 1991. "How Does Mother's Education Affect Child Height?" *Journal of Human Resources* 26(2, Spring):183-211.
- Triaswati, N., 2000. "The Role of Education Decentralization in Promoting Effective Schooling: The Philippines." Asian Development Bank, Manila. Unpublished.
- UNDP, 1993. *Human Development Report 1993*. United Nations Development Programme, New York.
- , 1996. *Human Development Report 1996*. United Nations Development Programme, New York.
- Welch, F., 1995. "Myth and Measurement: The New Economics of the Minimum Wage." *Industrial and Labor Relations Review*.
- Workman, D., 1997. "Decentralization in Brazil: Case Studies in Health Care and Primary Education." Policy Research Project on Public Policies in Brazil, Lyndon B. Johnson School of Public Affairs, The University of Texas at Austin.
- World Bank, 1989. "Indonesia: Basic Education Study." East Asia and Pacific Regional Office, Country Department III, Washington, D.C.

PUBLICATIONS FROM THE ECONOMICS AND RESEARCH DEPARTMENT

ERD WORKING PAPER SERIES (WPS)

(Published in-house; Available through ADB Office of External Relations; Free of Charge)

- | | |
|---|---|
| <p>No. 1 Capitalizing on Globalization
—<i>Barry Eichengreen, January 2002</i></p> <p>No. 2 Policy-based Lending and Poverty Reduction: An Overview of Processes, Assessment and Options
—<i>Richard Bolt and Manabu Fujimura, January 2002</i></p> <p>No. 3 The Automotive Supply Chain: Global Trends and Asian Perspectives
—<i>Francisco Veloso and Rajiv Kumar, January 2002</i></p> <p>No. 4 International Competitiveness of Asian Firms: An Analytical Framework
—<i>Rajiv Kumar and Doren Chadee, February 2002</i></p> <p>No. 5 The International Competitiveness of Asian Economies in the Apparel Commodity Chain
—<i>Gary Gereffi, February 2002</i></p> <p>No. 6 Monetary and Financial Cooperation in East Asia—The Chiang Mai Initiative and Beyond
—<i>Pradumna B. Rana, February 2002</i></p> <p>No. 7 Probing Beneath Cross-national Averages: Poverty, Inequality, and Growth in the Philippines
—<i>Arsenio M. Balisacan and Ernesto M. Pernia, March 2002</i></p> <p>No. 8 Poverty, Growth, and Inequality in Thailand
—<i>Anil B. Deolalikar, April 2002</i></p> <p>No. 9 Microfinance in Northeast Thailand: Who Benefits and How Much?
—<i>Brett E. Coleman, April 2002</i></p> <p>No. 10 Poverty Reduction and the Role of Institutions in Developing Asia
—<i>Anil B. Deolalikar, Alex B. Brillantes, Jr., Raghav Gaiha, Ernesto M. Pernia, Mary Racelis with the assistance of Marita Concepcion Castro-Guevara, Liza L. Lim, Pilipinas F. Quising, May 2002</i></p> <p>No. 11 The European Social Model: Lessons for Developing Countries
—<i>Assar Lindbeck, May 2002</i></p> | <p>No. 12 Costs and Benefits of a Common Currency for ASEAN
—<i>Srinivasa Madhur, May 2002</i></p> <p>No. 13 Monetary Cooperation in East Asia: A Survey
—<i>Raul Fabella, May 2002</i></p> <p>No. 14 Toward A Political Economy Approach to Prolicy-based Lending
—<i>George Abonyi, May 2002</i></p> <p>No. 15 A Framework for Establishing Priorities in a Country Poverty Reduction Strategy
—<i>Ron Duncan and Steve Pollard, June 2002</i></p> <p>No. 16 The Role of Infrastructure in Land-use Dynamics and Rice Production in Viet Nam's Mekong River Delta
—<i>Christopher Edmonds, July 2002</i></p> <p>No. 17 Effect of Decentralization Strategy on Macroeconomic Stability in Thailand
—<i>Kanokpan Lao-Araya, August 2002</i></p> <p>No. 18 Poverty and Patterns of Growth
—<i>Rana Hasan and M. G. Quibria, August 2002</i></p> <p>No. 19 Why are Some Countries Richer than Others? A Reassessment of Mankiw-Romer-Weil's Test of the Neoclassical Growth Model
—<i>Jesus Felipe and John McCombie, August 2002</i></p> <p>No. 20 Modernization and Son Preference in People's Republic of China
—<i>Robin Burgess and Juzhong Zhuang, September 2002</i></p> <p>No. 21 The Doha Agenda and Development: A View from the Uruguay Round
—<i>J. Michael Finger, September 2002</i></p> <p>No. 22 Conceptual Issues in the Role of Education Decentralization in Promoting Effective Schooling in Asian Developing Countries
—<i>Jere R. Behrman, Anil B. Deolalikar, and Lee-Ying Son, September 2002</i></p> |
|---|---|

ERD TECHNICAL NOTE SERIES (TNS)

(Published in-house; Available through ADB Office of External Relations; Free of Charge)

- | | |
|---|---|
| <p>No. 1 Contingency Calculations for Environmental Impacts with Unknown Monetary Values
—<i>David Dole, February 2002</i></p> <p>No. 2 Integrating Risk into ADB's Economic Analysis of Projects
—<i>Nigel Rayner, Anneli Lagman-Martin, and Keith Ward, June 2002</i></p> | <p>No. 3 Measuring Willingness to Pay for Electricity
—<i>Peter Choynowski, July 2002</i></p> <p>No. 4 Economic Issues in the Design and Analysis of a Wastewater Treatment Project
—<i>David Dole, July 2002</i></p> |
|---|---|

ERD POLICY BRIEF SERIES (PBS)

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

- | | | | |
|-------|--|-------|--|
| No. 1 | Is Growth Good Enough for the Poor?
— <i>Ernesto M. Pernia, October 2001</i> | No. 6 | Achieving the Twin Objectives of Efficiency and Equity: Contracting Health Services in Cambodia
— <i>Indu Bhushan, Sheryl Keller, and Brad Schwartz, March 2002</i> |
| No. 2 | India's Economic Reforms
What Has Been Accomplished?
What Remains to Be Done?
— <i>Arvind Panagariya, November 2001</i> | No. 7 | Causes of the 1997 Asian Financial Crisis: What Can an Early Warning System Model Tell Us?
— <i>Juzhong Zhuang and Malcolm Dowling, June 2002</i> |
| No. 3 | Unequal Benefits of Growth in Viet Nam
— <i>Indu Bhushan, Erik Bloom, and Nguyen Minh Thang, January 2002</i> | No. 8 | The Role of Preferential Trading Arrangements in Asia
— <i>Christopher Edmonds and Jean-Pierre Verbiest, July 2002</i> |
| No. 4 | Is Volatility Built into Today's World Economy?
— <i>J. Malcolm Dowling and J.P. Verbiest, February 2002</i> | No. 9 | The Doha Round: A Development Perspective
— <i>Jean-Pierre Verbiest, Jeffrey Liang, and Lea Sumulong, July 2002</i> |
| No. 5 | What Else Besides Growth Matters to Poverty Reduction? Philippines
— <i>Arsenio M. Balisacan and Ernesto M. Pernia, February 2002</i> | | |

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
— <i>Seiji Naya, April 1982</i> | | Pacific Trade and Development Conference
— <i>Seiji Naya, March 1983</i> |
| No. 2 | Development Issues for the Developing East and Southeast Asian Countries and International Cooperation
— <i>Seiji Naya and Graham Abbott, April 1982</i> | No. 15 | A Survey of Empirical Studies on Demand for Electricity with Special Emphasis on Price Elasticity of Demand
— <i>Wisarn Pupphavesa, June 1983</i> |
| No. 3 | Aid, Savings, and Growth in the Asian Region
— <i>J. Malcolm Dowling and Ulrich Hiemenz, April 1982</i> | No. 16 | Determinants of Paddy Production in Indonesia: 1972-1981—A Simultaneous Equation Model Approach
— <i>T.K. Jayaraman, June 1983</i> |
| No. 4 | Development-oriented Foreign Investment and the Role of ADB
— <i>Kiyoshi Kojima, April 1982</i> | No. 17 | The Philippine Economy: Economic Forecasts for 1983 and 1984
— <i>J.M. Dowling, E. Go, and C.N. Castillo, June 1983</i> |
| No. 5 | The Multilateral Development Banks and the International Economy's Missing Public Sector
— <i>John Lewis, June 1982</i> | No. 18 | Economic Forecast for Indonesia
— <i>J.M. Dowling, H.Y. Kim, Y.K. Wang, and C.N. Castillo, June 1983</i> |
| No. 6 | Notes on External Debt of DMCs
— <i>Evelyn Go, July 1982</i> | No. 19 | Relative External Debt Situation of Asian Developing Countries: An Application of Ranking Method
— <i>Jungsoo Lee, June 1983</i> |
| No. 7 | Grant Element in Bank Loans
— <i>Dal Hyun Kim, July 1982</i> | No. 20 | New Evidence on Yields, Fertilizer Application, and Prices in Asian Rice Production
— <i>William James and Teresita Ramirez, July 1983</i> |
| No. 8 | Shadow Exchange Rates and Standard Conversion Factors in Project Evaluation
— <i>Peter Warr, September 1982</i> | No. 21 | Inflationary Effects of Exchange Rate Changes in Nine Asian LDCs
— <i>Pradumna B. Rana and J. Malcolm Dowling, Jr., December 1983</i> |
| No. 9 | Small and Medium-Scale Manufacturing Establishments in ASEAN Countries: Perspectives and Policy Issues
— <i>Mathias Bruch and Ulrich Hiemenz, January 1983</i> | No. 22 | Effects of External Shocks on the Balance of Payments, Policy Responses, and Debt Problems of Asian Developing Countries
— <i>Seiji Naya, December 1983</i> |
| No. 10 | A Note on the Third Ministerial Meeting of GATT
— <i>Jungsoo Lee, January 1983</i> | No. 23 | Changing Trade Patterns and Policy Issues: The Prospects for East and Southeast Asian Developing Countries
— <i>Seiji Naya and Ulrich Hiemenz, February 1984</i> |
| No. 11 | Macroeconomic Forecasts for the Republic of China, Hong Kong, and Republic of Korea
— <i>J.M. Dowling, January 1983</i> | No. 24 | Small-Scale Industries in Asian Economic Development: Problems and Prospects
— <i>Seiji Naya, February 1984</i> |
| No. 12 | ASEAN: Economic Situation and Prospects
— <i>Seiji Naya, March 1983</i> | No. 25 | A Study on the External Debt Indicators |
| No. 13 | The Future Prospects for the Developing Countries of Asia
— <i>Seiji Naya, March 1983</i> | | |
| No. 14 | Energy and Structural Change in the Asia-Pacific Region, Summary of the Thirteenth | | |

- Applying Logit Analysis
—*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 Lutgarda Labios, January 1985*
- No. 29 Cause and Effect in the World Sugar Market: Some Empirical Findings 1951-1982
—*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
—*Ifzal 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 on 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 Ifzal 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
—*Ifzal 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. Tadler, 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
—*I. Ali, December 1990*
- 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, February 1993*
- No. 59 The Need for Fiscal Consolidation in Nepal: The Results of a Simulation
—*Filippo di Mauro and Ronald Antonio Butiong, July 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
—*Sudipto Mundle, U. Shankar, and Shekhar Mehta, October 1995*
- 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
—*Ashfaq 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
— <i>Evelyn Go, May 1981</i> | in Monsoon Asia
— <i>Harry T. Oshima, October 1983</i> |
| No. 2 | Domestic Savings in Selected Developing Asian Countries
— <i>Basil Moore, assisted by A.H.M. Nuruddin Chowdhury, September 1981</i> | No. 21 The Significance of Off-Farm Employment and Incomes in Post-War East Asian Growth
— <i>Harry T. Oshima, January 1984</i> |
| 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
— <i>Dal Hyun Kim and Graham Abbott, September 1981</i> | No. 22 Income Distribution and Poverty in Selected Asian Countries
— <i>John Malcolm Dowling, Jr., November 1984</i> |
| No. 4 | By-Passed Areas, Regional Inequalities, and Development Policies in Selected Southeast Asian Countries
— <i>William James, October 1981</i> | No. 23 ASEAN Economies and ASEAN Economic Cooperation
— <i>Narongchai Akrasanee, November 1984</i> |
| No. 5 | Asian Agriculture and Economic Development
— <i>William James, March 1982</i> | No. 24 Economic Analysis of Power Projects
— <i>Nitin Desai, January 1985</i> |
| No. 6 | Inflation in Developing Member Countries: An Analysis of Recent Trends
— <i>A.H.M. Nuruddin Chowdhury and J. Malcolm Dowling, March 1982</i> | No. 25 Exports and Economic Growth in the Asian Region
— <i>Pradumna Rana, February 1985</i> |
| No. 7 | Industrial Growth and Employment in Developing Asian Countries: Issues and Perspectives for the Coming Decade
— <i>Ulrich Hiemenz, March 1982</i> | No. 26 Patterns of External Financing of DMCs
— <i>E. Go, May 1985</i> |
| No. 8 | Petrodollar Recycling 1973-1980. Part 1: Regional Adjustments and the World Economy
— <i>Burnham Campbell, April 1982</i> | No. 27 Industrial Technology Development the Republic of Korea
— <i>S.Y. Lo, July 1985</i> |
| No. 9 | Developing Asia: The Importance of Domestic Policies
— <i>Economics Office Staff under the direction of Seiji Naya, May 1982</i> | No. 28 Risk Analysis and Project Selection: A Review of Practical Issues
— <i>J.K. Johnson, August 1985</i> |
| No. 10 | Financial Development and Household Savings: Issues in Domestic Resource Mobilization in Asian Developing Countries
— <i>Wan-Soon Kim, July 1982</i> | No. 29 Rice in Indonesia: Price Policy and Comparative Advantage
— <i>I. Ali, January 1986</i> |
| No. 11 | Industrial Development: Role of Specialized Financial Institutions
— <i>Kedar N. Kohli, August 1982</i> | No. 30 Effects of Foreign Capital Inflows on Developing Countries of Asia
— <i>Jungsoo Lee, Pradumna B. Rana, and Yoshihiro Iwasaki, April 1986</i> |
| No. 12 | Petrodollar Recycling 1973-1980. Part II: Debt Problems and an Evaluation of Suggested Remedies
— <i>Burnham Campbell, September 1982</i> | No. 31 Economic Analysis of the Environmental Impacts of Development Projects
— <i>John A. Dixon et al., EAPI, East-West Center, August 1986</i> |
| No. 13 | Credit Rationing, Rural Savings, and Financial Policy in Developing Countries
— <i>William James, September 1982</i> | No. 32 Science and Technology for Development: Role of the Bank
— <i>Kedar N. Kohli and Ifzal Ali, November 1986</i> |
| No. 14 | Small and Medium-Scale Manufacturing Establishments in ASEAN Countries: Perspectives and Policy Issues
— <i>Mathias Bruch and Ulrich Hiemenz, March 1983</i> | No. 33 Satellite Remote Sensing in the Asian and Pacific Region
— <i>Mohan Sundara Rajan, December 1986</i> |
| No. 15 | Income Distribution and Economic Growth in Developing Asian Countries
— <i>J. Malcolm Dowling and David Soo, March 1983</i> | No. 34 Changes in the Export Patterns of Asian and Pacific Developing Countries: An Empirical Overview
— <i>Pradumna B. Rana, January 1987</i> |
| No. 16 | Long-Run Debt-Servicing Capacity of Asian Developing Countries: An Application of Critical Interest Rate Approach
— <i>Jungsoo Lee, June 1983</i> | No. 35 Agricultural Price Policy in Nepal
— <i>Gerald C. Nelson, March 1987</i> |
| No. 17 | External Shocks, Energy Policy, and Macroeconomic Performance of Asian Developing Countries: A Policy Analysis
— <i>William James, July 1983</i> | No. 36 Implications of Falling Primary Commodity Prices for Agricultural Strategy in the Philippines
— <i>Ifzal Ali, September 1987</i> |
| No. 18 | The Impact of the Current Exchange Rate System on Trade and Inflation of Selected Developing Member Countries
— <i>Pradumna Rana, September 1983</i> | No. 37 Determining Irrigation Charges: A Framework
— <i>Prabhakar B. Ghate, October 1987</i> |
| No. 19 | Asian Agriculture in Transition: Key Policy Issues
— <i>William James, September 1983</i> | No. 38 The Role of Fertilizer Subsidies in Agricultural Production: A Review of Select Issues
— <i>M.G. Quibria, October 1987</i> |
| No. 20 | The Transition to an Industrial Economy | No. 39 Domestic Adjustment to External Shocks in Developing Asia
— <i>Jungsoo Lee, October 1987</i> |
| | | No. 40 Improving Domestic Resource Mobilization through Financial Development: Indonesia
— <i>Philip Erquiaga, November 1987</i> |
| | | No. 41 Recent Trends and Issues on Foreign Direct Investment in Asian and Pacific Developing Countries
— <i>P.B. Rana, March 1988</i> |
| | | No. 42 Manufactured Exports from the Philippines: A Sector Profile and an Agenda for Reform
— <i>I. Ali, September 1988</i> |
| | | No. 43 A Framework for Evaluating the Economic Benefits of Power Projects
— <i>I. Ali, August 1989</i> |
| | | 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
—*Ifzal 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
—*Ifzal 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 1993*
- 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
—*Douglas H. Brooks, January 1998*
- 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)

- No. 1 Poverty in the People's Republic of China: Recent Developments and Scope for Bank Assistance
—*K.H. Moinuddin, November 1992*
- No. 2 The Eastern Islands of Indonesia: An Overview of Development Needs and Potential
—*Brien K. Parkinson, January 1993*
- No. 3 Rural Institutional Finance in Bangladesh and Nepal: Review and Agenda for Reforms
—*A.H.M.N. Chowdhury and Marcella C. Garcia, November 1993*
- No. 4 Fiscal Deficits and Current Account Imbalances of the South Pacific Countries: A Case Study of Vanuatu
—*T.K. Jayaraman, December 1993*
- No. 5 Reforms in the Transitional Economies of Asia
—*Pradumna B. Rana, December 1993*
- No. 6 Environmental Challenges in the People's Republic of China and Scope for Bank Assistance
—*Elisabetta Capannelli and Omkar L. Shrestha, December 1993*
- No. 7 Sustainable Development Environment and Poverty Nexus
—*K.F. Jalal, December 1993*
- No. 8 Intermediate Services and Economic Development: The Malaysian Example
—*Sutanu Behuria and Rahul Khullar, May 1994*
- No. 9 Interest Rate Deregulation: A Brief Survey of the Policy Issues and the Asian Experience
—*Carlos J. Glower, July 1994*
- No. 10 Some Aspects of Land Administration in Indonesia: Implications for Bank Operations
—*Sutanu Behuria, July 1994*
- No. 11 Demographic and Socioeconomic Determinants of Contraceptive Use among Urban Women in the Melanesian Countries in the South Pacific: A Case Study of Port Vila Town in Vanuatu
—*T.K. Jayaraman, February 1995*
- No. 12 Managing Development through Institution Building
—*Hilton L. Root, October 1995*
- No. 13 Growth, Structural Change, and Optimal Poverty Interventions
—*Shiladitya Chatterjee, November 1995*
- No. 14 Private Investment and Macroeconomic Environment in the South Pacific Island Countries: A Cross-Country Analysis
—*T.K. Jayaraman, October 1996*
- No. 15 The Rural-Urban Transition in Viet Nam: Some Selected Issues
—*Sudipto Mundle and Brian Van Arkadie, October 1997*
- No. 16 A New Approach to Setting the Future Transport Agenda
—*Roger Allport, Geoff Key, and Charles Melhuish, June 1998*
- No. 17 Adjustment and Distribution: The Indian Experience
—*Sudipto Mundle and V.B. Tulasidhar, June 1998*
- No. 18 Tax Reforms in Viet Nam: A Selective Analysis
—*Sudipto Mundle, December 1998*
- No. 19 Surges and Volatility of Private Capital Flows to Asian Developing Countries: Implications for Multilateral Development Banks
—*Pradumna B. Rana, December 1998*
- No. 20 The Millennium Round and the Asian Economies: An Introduction
—*Dilip K. Das, October 1999*
- No. 21 Occupational Segregation and the Gender Earnings Gap
—*Joseph E. Zveglich, Jr. and Yana van der Meulen Rodgers, December 1999*
- No. 22 Information Technology: Next Locomotive of Growth?
—*Dilip K. Das, June 2000*

STATISTICAL REPORT SERIES (SR)

- | | |
|--|---|
| <p>No. 1 Estimates of the Total External Debt of the Developing Member Countries of ADB: 1981-1983
—<i>I.P. David, September 1984</i></p> <p>No. 2 Multivariate Statistical and Graphical Classification Techniques Applied to the Problem of Grouping Countries
—<i>I.P. David and D.S. Maligalig, March 1985</i></p> <p>No. 3 Gross National Product (GNP) Measurement Issues in South Pacific Developing Member Countries of ADB
—<i>S.G. Tiwari, September 1985</i></p> <p>No. 4 Estimates of Comparable Savings in Selected DMCs
—<i>Hananto Sigit, December 1985</i></p> <p>No. 5 Keeping Sample Survey Design and Analysis Simple
—<i>I.P. David, December 1985</i></p> <p>No. 6 External Debt Situation in Asian Developing Countries
—<i>I.P. David and Jungsoo Lee, March 1986</i></p> <p>No. 7 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
—<i>P. Hodgkinson, October 1986</i></p> <p>No. 8 Study of GNP Measurement Issues in the South Pacific Developing Member Countries. Part II: Factors Affecting Inter-country Comparability of Per Capita GNP
—<i>P. Hodgkinson, October 1986</i></p> | <p>No. 9 Survey of the External Debt Situation in Asian Developing Countries, 1985
—<i>Jungsoo Lee and I.P. David, April 1987</i></p> <p>No. 10 A Survey of the External Debt Situation in Asian Developing Countries, 1986
—<i>Jungsoo Lee and I.P. David, April 1988</i></p> <p>No. 11 Changing Pattern of Financial Flows to Asian and Pacific Developing Countries
—<i>Jungsoo Lee and I.P. David, March 1989</i></p> <p>No. 12 The State of Agricultural Statistics in Southeast Asia
—<i>I.P. David, March 1989</i></p> <p>No. 13 A Survey of the External Debt Situation in Asian and Pacific Developing Countries: 1987-1988
—<i>Jungsoo Lee and I.P. David, July 1989</i></p> <p>No. 14 A Survey of the External Debt Situation in Asian and Pacific Developing Countries: 1988-1989
—<i>Jungsoo Lee, May 1990</i></p> <p>No. 15 A Survey of the External Debt Situation in Asian and Pacific Developing Countries: 1989-1992
—<i>Min Tang, June 1991</i></p> <p>No. 16 Recent Trends and Prospects of External Debt Situation and Financial Flows to Asian and Pacific Developing Countries
—<i>Min Tang and Aludia Pardo, June 1992</i></p> <p>No. 17 Purchasing Power Parity in Asian Developing Countries: A Co-Integration Test
—<i>Min Tang and Ronald Q. Butiong, April 1994</i></p> <p>No. 18 Capital Flows to Asian and Pacific Developing Countries: Recent Trends and Future Prospects
—<i>Min Tang and James Villafuerte, October 1995</i></p> |
|--|---|

SPECIAL STUDIES, COMPLIMENTARY (SSC)

(Published in-house; Available through ADB Office of External Relations; Free of Charge)

- | | |
|--|--|
| <p>1. Improving Domestic Resource Mobilization Through Financial Development: Overview <i>September 1985</i></p> <p>2. Improving Domestic Resource Mobilization Through Financial Development: Bangladesh <i>July 1986</i></p> <p>3. Improving Domestic Resource Mobilization Through Financial Development: Sri Lanka <i>April 1987</i></p> <p>4. Improving Domestic Resource Mobilization Through Financial Development: India <i>December 1987</i></p> <p>5. Financing Public Sector Development Expenditure in Selected Countries: Overview <i>January 1988</i></p> <p>6. Study of Selected Industries: A Brief Report <i>April 1988</i></p> <p>7. Financing Public Sector Development Expenditure in Selected Countries: Bangladesh <i>June 1988</i></p> <p>8. Financing Public Sector Development Expenditure in Selected Countries: India <i>June 1988</i></p> <p>9. Financing Public Sector Development Expenditure in Selected Countries: Indonesia <i>June 1988</i></p> <p>10. Financing Public Sector Development Expenditure in Selected Countries: Nepal <i>June 1988</i></p> <p>11. Financing Public Sector Development Expenditure in Selected Countries: Pakistan <i>June 1988</i></p> <p>12. Financing Public Sector Development Expenditure in Selected Countries: Philippines <i>June 1988</i></p> <p>13. Financing Public Sector Development Expenditure in Selected Countries: Thailand <i>June 1988</i></p> <p>14. Towards Regional Cooperation in South Asia: ADB/EWC Symposium on Regional Cooperation in South Asia <i>February 1988</i></p> <p>15. Evaluating Rice Market Intervention Policies: Some Asian Examples <i>April 1988</i></p> <p>16. Improving Domestic Resource Mobilization Through Financial Development: Nepal <i>November 1988</i></p> <p>17. Foreign Trade Barriers and Export Growth</p> | <p><i>September 1988</i></p> <p>18. The Role of Small and Medium-Scale Industries in the Industrial Development of the Philippines
<i>April 1989</i></p> <p>19. The Role of Small and Medium-Scale Manufacturing Industries in Industrial Development: The Experience of Selected Asian Countries
<i>January 1990</i></p> <p>20. National Accounts of Vanuatu, 1983-1987
<i>January 1990</i></p> <p>21. National Accounts of Western Samoa, 1984-1986
<i>February 1990</i></p> <p>22. Human Resource Policy and Economic Development: Selected Country Studies
<i>July 1990</i></p> <p>23. Export Finance: Some Asian Examples
<i>September 1990</i></p> <p>24. National Accounts of the Cook Islands, 1982-1986
<i>September 1990</i></p> <p>25. Framework for the Economic and Financial Appraisal of Urban Development Sector Projects <i>January 1994</i></p> <p>26. Framework and Criteria for the Appraisal and Socioeconomic Justification of Education Projects <i>January 1994</i></p> <p>27. Guidelines for the Economic Analysis of Projects
<i>February 1997</i></p> <p>28. Investing in Asia
<i>1997</i></p> <p>29. Guidelines for the Economic Analysis of Telecommunication Projects
<i>1998</i></p> <p>30. Guidelines for the Economic Analysis of Water Supply Projects
<i>1999</i></p> |
|--|--|

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)
4. Urban Poverty in Asia: A Survey of Critical Issues
Edited by Ernesto Pernia, 1994
\$20.00 (paperback)
5. Indonesia-Malaysia-Thailand Growth Triangle: Theory to Practice
Edited by Myo Thant and Min Tang, 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
J. Zhuang, David Edwards, D. Webb, & Ma. Virginita Capulong
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)
12. Handbook for the Economic Analysis of Water Supply Projects
Asian Development Bank, 1999
\$15.00 (hardbound)
13. Handbook for the Economic Analysis of Health Sector Projects
Asian Development Bank, 2000
\$10.00 (paperback)

SPECIAL STUDIES, OUP (SS,OUP)

(Co-published with Oxford University Press; Available commercially through Oxford University Press Offices, Associated Companies, and Agents)

1. Informal Finance: Some Findings from Asia
Prabhu Ghatte 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 Tang, and Hiroshi Kakazu
1st ed., 1994 \$36.00 (hardbound)
Revised ed., 1998 \$55.00 (hardbound)
5. Urban Poverty in Asia: A Survey of Critical Issues
Edited by Ernesto Pernia, 1994
\$18.00 (paperback)
6. Critical Issues in Asian Development: Theories, Experiences, and Policies
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)
10. Fiscal Management and Economic Reform in the People's Republic of China
Christine P.W. Wong, Christopher Heady, and Wing T. Woo, 1995
\$15.00 (paperback)
11. Current Issues in Economic Development: An Asian Perspective
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. Social Sector Issues in Transitional Economies of Asia
Edited by Douglas H. Brooks and Myo Thant, 1998
\$25.00 (paperback)
\$55.00 (hardbound)
15. 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)