The Role of Decentralization in Promoting Effective Schooling in Developing Asia

JERE R. BEHRMAN, ANIL B. DEOLALIKAR, AND LEE-YING SOON

While decentralization of schooling in Asian developing countries has largely been driven by fiscal constraints, it has also been motivated by concerns about the effectiveness of a centralized system in delivering schooling services. The statistics are revealing about some of these concerns: while virtually all of these countries 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 schooling 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 schooling levels.

I. INTRODUCTION

To varying degrees, Asian developing countries (ADCs) have adopted some elements of decentralization in their schooling systems. These include devolution of authority and responsibility for schools from central to regional or local levels, increased local financing of schools, decentralization of school functions, and reforms in the incentive structures of schools and for their teachers. However, it is not clear that the measures adopted generally have led to improvements in schooling, 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 schooling.

This paper contributes to the discussion of decentralization of schooling in ADCs. The first part establishes the background and rationale for these concerns and scrutinizes major issues of schooling in ADCs including school access, quality, financing, management, and information issues related to schooling. The

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 at the University of California-Riverside. Lee-Ying Soon is Associate Professor of Economics, Nanyang Technological University, Singapore. The authors were international consultants for TA 5617-REG: Financing Human Resource Development in Asia when they wrote the first version of this paper. 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.

second part examines various aspects of decentralization—the forms it takes in practice, its potential effects, and factors that influence the success of decentralization.

While virtually all ADCs have had impressive gains in expanding the coverage of schooling, particularly at the primary level, enrollment rates still remain generally low at the secondary and tertiary levels and for many children coming from disadvantaged backgrounds at all levels. Moreover, it is generally perceived that most ADCs have not been as successful as the high performing Asian economies in delivering schooling of high quality, as indicated by international comparisons of achievement test scores in math and reading, and by dropout and grade repetition rates. 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 schooling may be important means for improving schooling in ADCs. 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 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 schooling *management* simply shifts the same problems to levels that are less capable of resolving them. Similarly, decentralization of schooling *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 schooling is very important from the point of view of ADCs because these are the directions in which virtually all these countries are heading. Moreover, designing policies that counter any tendency toward a worsening of inequities needs careful attention.

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 schooling 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 schooling 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 schooling 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 schooling is seriously constrained in ADCs, thus raising the question of whether some sort of financial assistance is appropriate.[1] Demand-side financing is one possibility receiving increased attention from policymakers. In this approach, money is channeled through students rather than through schooling 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 schooling 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

[1]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.

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 schooling 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 schooling and improving the quality of existing ones. Thus, in economies where both access to, and quality of, schooling 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 schooling in a meaningful way. The relevant issue for policy may 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.

II. FRAMEWORK FOR ANALYSIS

The analytical framework frequently employed in the analysis of various aspects of human capital or investments in schooling is that developed by Becker (1967) in his Woytinsky Lecture. In that framework, the individual or household builds up human capital by investing in schooling 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 foregone income, foregone 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 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 schooling to the population. From its viewpoint, the issue translates into how much it should invest in the schooling 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 societywide 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 positive externalities, that is, when benefits cannot be limited to the individual but extend to the community as a whole. For instance, when schooling 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 more-schooled individual. In fact, this is a principal reason given in support of the argument for governmental intervention in the field of schooling. On the other hand, marginal private benefits exceed marginal social benefits if the externalities are negative.

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 schooling than rates dictated by social opportunity costs. Conversely, marginal social costs outstrip marginal private costs when public funds allocated for schooling entail an abandonment or postponement of projects or activities deemed of higher priority in the nation's agenda.

The present paper is not, however, directly concerned with the question of maximizing the net social benefit from investment in schooling. Rather, it is directly concerned with the narrower issue of whether schooling in a given country can be improved through decentralization.

A. The Analytical Framework

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

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

where S is schooling, D is decentralization, and X includes other factors that are direct inputs in the production of S. The relationship between S on the one hand and D (and X) on the other may be positive, negative, or even zero. The a priori expectation of those that favor decentralization is that the relationship is positive. 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.

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,[2] 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.[3] 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 regarding *causality* between them. Further, factors unobserved by analysts,[4] e.g., innate ability and motivation, may well be important determinants of outcomes.

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[2]With random assignment between treatment and control groups, no attrition problems, and where neither the subjects nor those who provided the experimental treatments know which subjects receive treatments and which receive placebos.

[3]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).

[4]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), Deola-

For instance, let us consider the question of what determines, in the production function sense, cognitive achievement C of an individual:

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

where A is 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 generally 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 true determinants of cognitive achievement. Therefore, the regression results may only show that, say, the quality of schools and the state of health of the student population are associated with cognitive achivement, not the extent to which they cause it.

For decentralization, statistics vary for the reason that there are many ways in which schooling can be decentralized. These could include, inter alia, the proportion of budgetary and spending decisions at the local level, the extent of school-based management (SBM), the extent of decentralization of management functions, and the extent of community financing of schooling.

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. Some of these are likely to be unobserved by the analyst; good proxies or other means of controlling for them must be used.

The most obvious statistic for schooling outcome is student test scores. Other indicators that are of the used include school enrollment, transition to secondary school, grade repetition rates, and school dropout rates.

C. Estimation Problems

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 basic textbooks in econometrics and will not be explained here.

likar (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).

D. Implications for Analysis of Endogenous Policies

Governmental policies—including those related to schooling—are often assumed in empirical analysis of their effects to be exogenous. Yet in reality they are not; they are 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 governmental policies on human resources without controlling for the fact that governmental policies themselves are determined, implemented, and monitored as part of a larger set of behavioral decisions. The failure to control for the determinants of governmental policies may cause substantial misestimates of their effectiveness.

E. Intrahousehold Allocations of Human Resource Investments

The nature of intrahousehold allocations may modify the basic human capital investment story because who controls resources within the household may affect the extent and nature of human resource investments. Several studies suggest, for example, that if women control a higher proportion of the resources, more investments are made in the human capital of children (e.g., Thomas 1990).

F. Information Problems and Human Capital Investments

The discussion to this point ignores the impact of information problems related to human resource investment. But 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 services with better information, both about the current situation in the labor market and about future developments. The best candidate for providing resources for doing this is likely to be the government because the needed information has the character of a public good.

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 change from rewarding traits associated with males (e.g., strength) to rewarding traits associated with females (e.g., manual dexterity) can result in a suboptimal allocation of human capital in-

vestment. Such misreading can be lessened by careful monitoring of various changes.

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 should 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 two standard economic justifications for governmental policy interventions related to schooling, as in other areas, are (i) to increase efficiency and (ii) to redistribute resources.[5]

A. Efficiency

Resource allocation is efficient when a change in that allocation cannot be made without diminishing the welfare of at least one member of the population concerned. If there is efficiency, the private rate of return to an activity equals the social rate of return. If there are distortions in prices and costs so that private incentives differ from social incentives, resources are not efficiently allocated. Distortions may reflect, for example, externalities or the impact of governmental regulations such as price ceilings.

B. Distribution

Distribution is a major policy motive distinct from efficiency. Distributional concerns are often focused on poorer members' of society command over resources.[6] Good policies must balance the efficiency and the distributional motives.

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[5]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).

[6]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 Asian developing country, Viet Nam, see Behrman and Knowles (1998b, 1999).

IV. MAJOR ISSUES RELATED TO SCHOOLING IN ADCs

We now consider some of the major issues confronting schooling in ADCs. Although these issues are often discussed separately, they all are intertwined because, in effect, they all relate to the same overall goal of maximizing the net social benefits of investment in schooling, subject to various resource constraints. Thus they are all related to the basic policy motives of efficiency and distribution.

A. School Access

Studies of schooling 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, schooling services would be delivered free of charge to a client's doorstep 24 hours a day every day of the year.

A number of factors affect "access" to the schooling 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 is said to be good. Conversely, if the proportion is low, access is described as poor. The distribution of access across income groups is particularly important in evaluating access. National averages may conceal the fact that only a tiny proportion of children of poor families can attend school.

"Access" does not seem to be a very useful concept, in light of the basic policy motives, because it ignores the social marginal costs or resources with the result that maximizing access is likely to reduce welfare. Of course access can be modified to incorporate the social marginal costs, but then it is not clear what is the advantage of referring to "access" rather than to the efficiency location of schools balance by the appropriate distributional considerations.

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 schooling 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 from an efficiency perspective are those that equate social marginal benefits and social marginal costs, not those that, for example, 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. But this claim misses the point that the efficiency criterion should be the equating of marginal social benefits and costs, which is not necessarily the same as increasing the utilations.

There are at least three types of relevant empirical studies of school quality for Asian 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 ADCs (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.[7] 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 ADCs, 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

[7]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).

average quality of existing schools, but definitely higher than expanding middle schools (Behrman, Ross, and Sabot 2003).

Third, there are studies of determinants of test scores or other indicators of school achievement for developing countries, including ADCs. Table 1 reproduces a summary of such studies as of the early 1990s. Among the five variables summarized from nearly 100 studies in this table, none has statistically significant positive effects for more than two thirds of the studies and only half of them—facilities, teacher schooling, and expenditure per student (with the last of these based on relatively few studies)—have significantly positive effects in half the studies.[8] 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. 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 who do well by linking rewards to the value added of schooling.[9] 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 schooling, 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.

[8]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 schooling 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.

[9]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.

Table 1. **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 Schooling	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).

Finally, there is the issue of a trade-off between access and quality. A common dilemma facing schooling 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. To make the best allocations regarding tradeoffs between access and quality, the basic policy motives of efficiency and distribution should be addressed directly.

C. School Financing

School financing is of major concern in most ADCs. 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 ADCs 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 schooling is concerned, the vast bulk of financing comes from taxation as well as from income of governmental 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.

On of the most difficult of the issues attending public financing is the adequacy of financing. Public financing of schooling is almost always viewed as inadequate, and rarely able to cover all expenses of public schools for teachers' pay, school supplies, and school facilities. As a consequence, public schoolteachers are often perceived to be underpaid, facilities are limited or nonexistent, and equipment is obsolete. These deficiencies also are perceived to undermine quality by setting back school performance as indicated by test scores of students and other measures. They are part of the negative outcomes of attempting to oversubsize public schools instead of charging user fees that reflect the true marginal benefits and costs.

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

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 schooling attainment and experience, particularly in managerial positions, is of critical importance to the efficiency and effectiveness of school management. In general it is perceived that the higher the schooling 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, possibly, 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 governmental funding to existing private schools, and (iv) the acceptance of private financing by existing public schools (Bray 1998).[10,11]

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 schooling 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.

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

[11]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.

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 ADCs, 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 et al. (1996) for Indonesia; and Kingdon (1996) for Uttar Pradesh in India.[12] 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, India, fully private schools were the least cost-effective whereas government-aided schools were the most cost effective; fully governmental 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 schools may be that principals in private schools typically have greater control in 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 strong incentives to exercise their control on school-level decisions in a manner that is compatible with parents' interests.

[12]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 functional forms, which also requires strong assumptions. For such reasons, 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).

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 incentive structures in public schools are 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.[13] In contrast, despite the fact that teachers in profit-oriented private schools were typically poorly paid and less qualified in terms of credentials relative to public schoolteachers, they appeared to be more effective if only because they had to turn up to teach![14] 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. 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 schools can fire teachers whom they re-

[13]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 for their schooling.

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

gard as inefficient. They can also fill vacancies and replace absent teachers quickly. In contrast, public schools are much more constrained in all of these decisions. The finding that districts with a greater percentage of private-aided schools perform better in terms of average performance on statewide 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 often not very 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.[15]

E. Information Issues

Information problems 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 schooling process may find it advantageous to attempt to create and exploit situations in which there is asymmetric information. Teachers

[15]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 some of which are summarized in Knight and Sabot (1990).

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 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 relatively limited schooling.

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 schooling of parents and the local community than more centralized direct information collection procedures. 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 or subsidies regarding information disclosure. For example, schools and other schooling 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 SCHOOLING

To varying degrees, all ADCs have adopted elements of decentralization in their schooling 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 or other local decisionmakers. 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, often with insufficient attention to the basic policy motives of efficiency and distribution.

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 schooling 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 ADCs at least as much as concerns about the effectiveness of the schooling 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).[16] 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

[16]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 levels of—cognitive achievements). Schools with selective admissions may have high cognitive achievement but not much value added.

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 governmental services more responsive to local conditions. Examples of these proposals are decentralization, treating equally all public and private providers of such services, and mechanisms 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 schooling around the world has been based in part 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 local schooling. 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 schooling systems have potential benefits and liabilities. After all, schooling 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 schooling professionals in states and districts. The pendulum has now swung in the opposite direction, as a growing movement in the US now wants to decentralize schooling 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 schooling. These include downsizing of the central schooling 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 schooling, curriculum reform, and school vouchers and demand-side financing.

A. Downsizing of Central Bureaucracies in Schooling

An important correlate of decentralization in schooling is the downsizing of the central schooling 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 schooling 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 schooling 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 schooling 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 schooling 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 increasingly 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 schooling, 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 governmental 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 attempt to ensure that village schools are 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 governmental expenditures on schooling 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 schooling 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 schooling is modest in absolute terms, and reflects the fact that, unlike health and social welfare—where there has been much greater decentralization—schooling 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 schooling in many countries. However, state and federal agencies continue to be major actors in schooling delivery. For this reason, many advocates of decentralization emphasize the need for the federal government to increase the local 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 be key in improving the schooling 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 dis-

tricts. 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 governmental 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." Chicago 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 schooling 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 Schooling

Another form of decentralization that is common in many developing countries, sometimes in part out of necessity given the limited resources provided from more centralized sources, is increased local (mainly community) financing of

schooling. In some countries, particularly in Africa, governmental provision of schooling 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 provide all schooling inputs, they recognize that this is not always possible or practical. Community schools therefore have arisen to make up for governmental shortfalls in resources for local schools. In some cases, community financing has arisen to meet the demand for alternative forms of schooling. 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 percent 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 Schooling 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, governmental resources are inadequate even for providing teachers, and communities therefore 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 may provide schools with the flexibility to adapt their schooling 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 schooling 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 tertiary schooling may be appropriate in a region where a large proportion of secondary school students continue on to the tertiary level 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 inefficiency through providing the wrong mix of education for the local economy.

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 schooling (Hannaway 1993).

F. School Vouchers and Demand-Side Financing

Another form through which schooling decentralization has been implemented is demand-side financing. This involves channeling public funds through students rather than through schooling 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 schooling 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 schooling 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 many developing countries. In many cases, 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 schooling in such areas, and allows students who would otherwise not have gone to school to obtain schooling.

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). Recent estimates suggest that there were significant gains to poor students who were assigned in a lottery to receive vouchers to attend low-cost private schools in this program (Angrist et al. 2002). 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.[17]

VII. POTENTIAL EFFECTS OF DECENTRALIZATION

The general considerations regarding decentralization (all of the second part of this 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.

[17]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).

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 so that enrollments are at the level at which the social marginal benefits of each school level equal the social marginal costs, which has at least three important implications. First, because all levels of schooling probably have positive private marginal benefits at the efficient enrollment levels in ADCs, 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 local levels is likely to be more efficient.[18] From a distributional perspective, there may be reasons for lowering some user fees to below what would be warranted on pure efficiency grounds, particularly 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, nongovernmental 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

[18]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.

schooling institutions—historically the dominant channels of such subsidies. This has the distinct advantage of creating incentives for schooling 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 schooling hierarchy—ultimately, in most ADCs, those in the Ministry of Schooling 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 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 ADCs, as noted in subsection IV.C, that at least some local involvement in 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 schooling, is the question of how effectively local authorities, such as provincial or district schooling officers and school boards, are 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 lo-

cal 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, responsibility for such construction and maintenance of public primary and secondary school buildings now rests almost entirely with municipal and local governments.

If decentralization involves raising resources for public subsidies for schooling locally, it runs the risk of 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 schooling to poorer local governments and municipalities.

Little empirical evidence exists on the effects of financial decentralization in the schooling sector. Evidence from Brazil suggests that the decentralization of primary schooling has resulted in an absolute drop in the overall level of spending on schooling. Between 1988 and 1991, for instance, spending on schooling 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 schooling resulted in a net loss of $2.7 billion in total public spending on schooling. Such a cut in overall funding would be expected to have an adverse impact on the schooling system as a whole unless there were relatively large gains in the effectiveness of resource use.

Likewise, it has been argued that the cost of municipalized schooling 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 perhaps 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 schooling. In addition, monitoring schooling 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 schooling 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 schooling 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 distributional 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 might 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 schooling, 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.[19]

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 schooling. In Brazil, however, decentralization of primary schooling has not improved 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 distributional 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 some 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 schooling provided and polarizing the delivery of schooling services along income lines. This may 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 pro-

[19]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.

viding 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 schooling 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 schooling standards is even more important in a decentralized than in a centralized schooling system.

VIII. FACTORS INFLUENCING THE SUCCESS OF DECENTRALIZATION

Decentralization of schooling is not an end in itself, but it may be an important means to help improve schooling. 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 distributional 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 ADCs 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.

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 schooling 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 schooling 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 distributional 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 schooling to what they perceive to be better uses.

Ultimately, it must be recognized that information problems are probably central to improving schooling and are difficult to resolve. Combinations of changed institutions—including decentralization—and public subsidized information can improve schooling in ADCs. 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 ADCs (as with other countries) have strong vested interests in existing relatively centralized systems. These include governmental 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 schooling 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 schooling establishment is allowed to set the terms on which schooling is provided, it will advocate means of delivering schooling services that are more intensive in teacher services and more rewarding for teachers than would

result if the objective of schooling was to maximize value added of the sector alone. The move toward decentralization, therefore, is likely to be somewhat threatening to the schooling establishment because it is a move toward organization of the schooling system in which the welfare of teachers and school staff is not directly part of the objective function of the schooling 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 schooling decentralization. For example, local schools did not receive the autonomy to select, hire, and discipline teaching staff. These decisions were left to "schooling 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 schooling 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 schooling establishments in most ADCs 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 schooling that are expected to result from schooling reforms. On the other hand, it is important that demand-side pressures be increased and barriers to entry of new providers of schooling 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 governmental 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 schooling 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 opera-

tional 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 may 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 schooling 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 schooling 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 schooling systems, have centralized and standardized curricula and examinations, so local schools have little flexibility in tailoring the content of their schooling programs to local needs and capabilities.

D. Local School Management Capabilities

In most ADCs, 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 schooling 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 distributional (antipoverty) grounds. Of course there is nothing in either the efficiency or the distributional 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 schooling 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 distributional 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 schooling system are important to circumvent some of the information problems and to induce more effective delivery of schooling 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 schooling 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 schooling in ADCs 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 schooling services. While virtually all ADCs 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 schooling 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 ADCs have adopted some elements of decentralization in their schooling 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 schooling. There is not much evidence that decentralization has been successful in improving schooling in ADCs, 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 schooling.

There would be considerable potential gains in further understanding the impact of decentralization in the schooling 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 schooling decentralization efforts and further systematic research undertaken that builds upon the foundations such as outlined in this paper.

SELECTED 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* 36(1): 185-205.

Angrist, J. D., E. Bettinger, E. Bloom, E. M. King and M. Kremer, 2002, "Vouchers for Private Schooling in Colombia: Evidence from a Randomized Natural Experiment," *American Economic Review* 92 (5, December), 1535-59.

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: National Bureau of Economic Research.

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, and R. Sabot, 2003. "Improving the Quality Versus Increasing the Quantity of Schooling." *Topics in the Economics and Growth of Developing Areas of The B.E. Journals of the Economics and Growth of Developing Areas.* Forthcoming.

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*, Vol. 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. 1990, "Intrahousehold Resource Allocation: An Inferential Approach." *Journal of Human Resources* 25(4, Fall):635-64.

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.