

IMPROVING THE DISTRIBUTION OF OPPORTUNITIES

Wealth to us is not mere material, but an opportunity for achievement.

—Thucydides, 460–400 B.C.

The main asset of most poor people is their human capital. Investing in the human capital of the poor is a powerful way to augment their assets, redress asset inequality, and reduce poverty. This chapter examines the quality of education, associating the distribution of education with growth and poverty reduction. It then asks how to make education at all levels more productive. To be sure, access to good quality education is important in that it enhances people's capabilities to generate income. This is not enough, however. To be more productive, they need to be able to combine their human capital with other productive assets, such as land and equity capital, and with job opportunities in an open market.

Chapter 2 discussed the importance of undistorted or balanced asset augmentation. This chapter focuses on assets that the poor possess, primarily human capital, and those on which they rely most heavily, such as land. For growth to have an impact on poverty, the assets of the poor, especially their human capital, need to be augmented and distributed more equitably.¹ Yet inequality in education and health outcomes is staggeringly high, reflecting market failures and underinvestment in the human capital of the poor. Asset distribution represents the distribution of opportunities and is a precondition for individual productivity and income. While redistributing existing assets and incomes is politically difficult, building new assets such as human capital is widely accepted.

To be sustained, development must be equitable and inclusive. Ensuring adequate public spending in education and health care is important, but does not by itself guarantee progress. A multidimensional strategy to empower people is needed. Actions to highlight include the following:

- Augment assets of the poor by ensuring access to high-quality education and health services
- Increase attention to the distributive effect of public investment and reduce subsidies to the types of education and health care that benefit the rich
- Facilitate full use of human capital by empowering the poor with land, credit, training, and job opportunities
- Complement all human capital investments with economic reforms and market openness, which increase the productivity of education.

Potential Benefits of Education

Education and good health improve people's ability to shape their lives—strengthening their functioning in society and contributing to their welfare directly. Educating women, for example, not only increases their income-earning capacity, but also improves their reproductive health, lowers infant and child mortality, and benefits both current and future generations. Investing in human capital is therefore crucial for economic growth, poverty reduction, and environmental protection. The benefits of investing in human capital are well known, but some of the linkages with other dimensions of development—security, social justice, and sustainability—are better understood today than they were 10 years ago.²

Investing in people can protect workers and improve security—an important aspect of quality of life. Education and good health increase the poor's ability to cope with changes in their environment. They allow them to switch jobs and provide some protection against economic downturns and financial crises (chapter 5).

Social exclusion reduces an individual's incentive to attend school and to work (Bourguignon 1999; Loury 1999). Investment in human capital, if well distributed and targeted to the poor, can facilitate social inclusion. Better education and health services to vulnerable, often excluded groups, such as those who are illiterate, disabled, elderly, chronically ill, or separated by language barriers, can help them overcome social obstacles and increase their productivity.

Investing in people may also help protect the environment. Better-educated women have healthier and, in many cases, fewer children, thereby reducing demographic pressure on natural resources and the environment.

With more education, people can assimilate more information and employ instruments to protect the environment and better manage resources (chapter 4).

Investing in people improves human rights and social justice, which provides direct satisfaction. Basic education enables the poor to learn about their civil and political rights; to exercise those rights by voting and running for office; and to voice their concerns, seek legal redress, and exercise public oversight. That helps in building institutions, improving governance, and fighting corruption (chapter 6).

These benefits are far from automatic. Many studies show that additional years of education per person increase real output or growth rates. However, a few researchers suggest that human capital accumulation has an insignificant or negative impact on economic and productivity growth (Benhabib and Spiegel 1994; Griliches 1997; Islam 1995; Pritchett 1996). More government spending on education, if misallocated, might contribute little to poverty reduction and instead increase inequality and rent seeking. As Murphy, Shleifer, and Vishny (1991, p. 503) point out: "A country's most talented people typically organize production by others... When they start new firms, they innovate and foster growth, but when they become rent seekers, they only redistribute wealth and reduce growth."

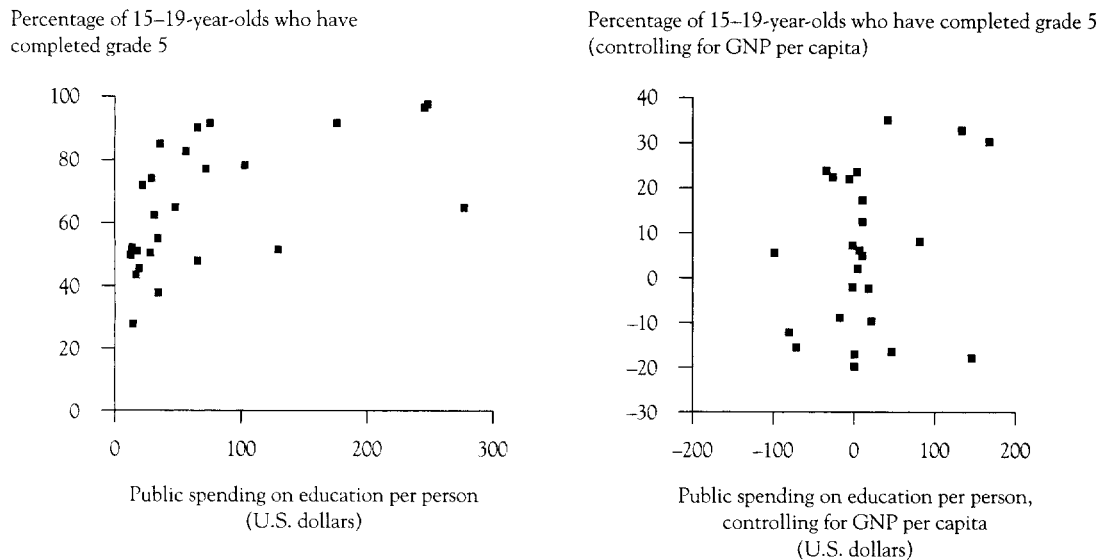
Quantity Is Not Enough—Quality Matters

Since 1980, developing countries have invested substantial amounts of public resources in education services (see figure 1.11). In the 1990s, more than three-quarters of school-age children in developing countries were enrolled in schools, up from less than half in the 1960s. Illiteracy rates dropped from 39 to 30 percent between 1985 and 1995 (World Bank 1999a).

Progress has been uneven across regions. Enrollment rates fell in Sub-Saharan Africa: the proportion of 6–11 year olds enrolled in schools dropped from 59 percent in 1980 to 51 percent in 1992 (World Bank 1999a). Lack of access to basic education remains a major challenge in many countries. Increasing public spending is desirable, but not sufficient for the following reasons.

Public Spending Is Only Weakly Related to Outcomes

Cross-country analyses reveal a weak relationship between the generosity of education spending and education outcomes. Using cross-country data, Filmer and Pritchett (1999b) examined the correlation between government education spending per student and the percentage of people aged 15 through 19 who had completed grade five. The correlation appeared positive and significant at first, but after controlling for per capita income, the correlation was found to be fairly weak (figure 3.1). A similarly weak correlation

*Public spending on education is only weakly related to education outcomes***Figure 3.1. Relationship between Public Spending Per Capita and Educational Attainment, Various Years**

Note: Expenditures refer to public spending on preprimary, primary, and secondary education only. Thirty-five developing countries were included in the study.

Sources: Education outcome data are updated from Filmer and Pritchett (1999b) combined with expenditure data from the United Nations Educational, Social, and Cultural Organization (UNESCO) database.

was found between government health spending and mortality rates for children under five years old (Filmer and Pritchett 1999c).

Why is public spending only weakly related to outcomes? What makes the difference is the quality and distribution of education services and the productivity of human capital. For developing countries that already allocate a substantial share of public resources to social services, further spending may not improve education outcomes for the poor. Reallocating public spending and improving its efficacy often can improve outcomes, especially when public resources are subsidizing education for the wealthy. Economywide strategies and policies also matter: subsidies to attract foreign capital may, under certain circumstances, bias the rate of return against human capital.³ Labor market distortions create disincentives for investing in education. In addition, to be productive, people must have access to other productive assets, including land, credit, equity, and job opportunities in open and competitive markets.

Variability in School Quality

Despite progress on access to education, the quality of schooling varies considerably across countries and regions. An extensive literature explored how best to define and measure the quality of schooling: whether inputs, processes, or student achievements should be used in assessments (see, for example, Behrman and Birdsall 1983; Card and Krueger 1992; Greaney and Kellaghan 1996; Lockheed and Verspoor 1991). We measured quality as a combination of indicators that reflect inputs, defined by expenditure per student and the number and quality of teachers; processes, that is, the length of school terms and the curriculum content; and outputs, measured by cognitive achievements, attitudes, test scores, and dropout rates.

In high-income countries where these indicators are well developed, student achievement varies widely, even in countries with universal basic education. Functional literacy rates for young adults, 16–25 years old, in some industrial countries vary from 45 percent in the United States to 80 percent in Sweden, while the secondary net enrollment rates in these countries are all above 85 percent (World Bank 1999a).

In developing countries, where achievement indicators are scarce, less accurate indicators, such as repetition and dropout rates, have been used to assess education outcomes. Data generated by these imperfect measurements showed considerable variation in the quality of schools (table 3.1). Repetition and dropout rates for primary school are much lower and test scores higher in East Asia than in Latin American countries, where incomes are higher. While public education spending rose in some Latin American countries in the 1990s, average primary dropout rates also increased.⁴ Other studies, based on the limited available data on internationally comparable test scores, also show that generous public spending did not guarantee high-quality education.

What explains the large variations in quality? Education outcomes depend on both demand and supply factors, and thus on policies and incentive structures that affect the whole economy. Macroeconomic stability, represented by international terms of trade and GDP volatility, for example, is found to be the most significant determinant of educational attainment in Latin America. Using data from 18 household surveys, Behrman, Duryea, and Szekely (1999) found that the debt crisis of the 1980s contributed to the slowdown in the accumulation of schooling in Latin American countries. Kaufmann and Wang (1995) found that macroeconomic policies affect social sector investment projects. As a country opens to international trade and investment, the rate of return to education rises. People demand higher quality education and are willing to pay more for it. Stronger demand, higher private

*Repetition and dropout rates vary enormously across countries***Table 3.1. Primary School Repetition and Dropout Rates, Selected Years**
(percent)

Country	Primary school repetition rate		Primary school dropout rates			Public spending on education (percentage of GNP)		
	1980s	1990s	1970	1980	1990	1970s	1980s	1990s
Argentina	—	6	36	34	34	1.65	1.79	3.07
Brazil	20	18	78	78	80	2.95	4.04	3.60
Chile	—	6	23	24	23	4.60	4.52	2.84
Colombia	17	9	43	43	44	2.05	2.75	3.43
Mexico	10	8	11	12	28	2.90	4.06	4.45
Peru	17	15	34	30	30	3.30	3.09	3.40
Venezuela, RB	10	11	41	32	52	4.30	5.09	4.56
Average Latin America	15	10	38	36	42	3.11	3.62	3.62
China	—	3	15	15	15	1.45	2.45	2.20
Indonesia	10	9	20	20	23	2.65	1.38	1.34
Korea, Republic of	—	—	5	6	1	2.80	3.89	3.92
Malaysia	—	—	1	1	4	5.10	6.61	5.37
Philippines	2	—	25	25	30	2.40	2.02	2.54
Thailand	8	—	57	23	13	3.35	3.58	3.88
Average East Asia	7	6	21	15	14	2.96	3.32	3.21

— Not available.

Sources: World Bank data; UNESCO for expenditure data.

investments, better-paid teachers, and more motivated students produce higher educational achievements, with differing time lags. The higher the demand for education, the higher its quality, and vice versa. If a country devotes public resources to subsidize physical capital instead of basic education, it can bias the rates of return against unskilled labor and hurt the poor (see table A2.4 on capital subsidies).

At the micro level, many studies have examined the links between schooling quality and student performance. Behrman and Knowles (1999) found a strong positive association between the quality of teaching staff, the quality of current inputs, and children's success at school. Hanushek and Kim (1995) found that conventional measures of school resources, that is, pupil-teacher ratios and educational spending, did not affect student test performance. In cross-country regressions, test scores were positively related to growth rates of real per capita GDP, indicating a potential feedback from growth to strong demand and good student performance. Lee and Barro

(1997) found that family background, strong communities, school inputs, and length of school terms are positively related to student performance; however, they cannot fully explain why East Asian countries experienced better education outcomes than did other developing countries. That suggests that other factors may be at play, including those associated with a more open and export-oriented economic environment.

Consequences of Poor Quality

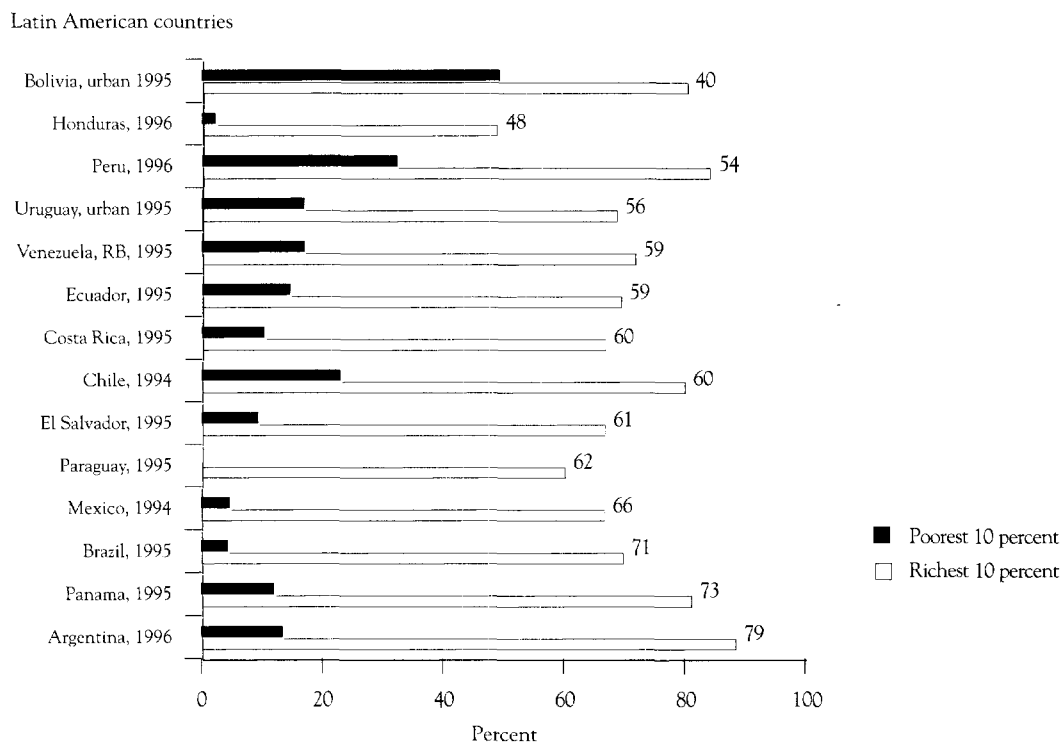
Low-quality schooling disproportionately hurts the poor and limits their future earning opportunities. For example, Vietnamese students from high-income households enjoy greater access to high-quality education (Behrman and Knowles 1999). In Latin America, most students from low-income families attend public schools, which offer half the hours of instruction and cover only half the curriculum compared with the private schools. The higher the family's income, the greater the aversion to public schools (IDB 1998).

Estimates based on household surveys from Latin America show that students from lower-income deciles received an inferior primary education. Quality, measured by students' labor market performance, was 35 percent lower for low-income students than for those at the next-higher income decile (IDB 1998, p. 54). Figure 3.2 shows the enormous gaps in secondary school completion rates for the rich and poor. Because private education is feasible only for the wealthy, the poor quality of public schooling severely reduces the income-generating potential of children from poor families.

Quality and Quantity: A Tradeoff?

Improvements in quality complement the expansion of access to education. If poor children can go only to low-quality schools, they have few opportunities to obtain high-paying jobs and parents are disinclined to send them to school. When education coverage is not universal, the best strategy is to focus on policy interventions that raise demand for both the quantity and the quality of education. For example, programs to reduce child labor and keep children in school—such as school lunches and cash stipends—would go well with teacher training to improve quality.

However, with growing populations and tight budgets, the synergies of quantity and quality can turn into tradeoffs, especially if the quality measures selected are not closely linked with student learning. What quality measure should be used for intervention? Should it be student incentives, or length of school terms, or the quality of teaching staff? Evidence shows that reduction of pupil-teacher ratios, which is expensive, has little impact on

Figure 3.2. Secondary School Completion Rates for 20–25-Year-Olds by Household Income Level, Selected Latin American Countries and Years

Note: Numbers next to bars are gaps in completion rates (percent). The surveys for Argentina include only Greater Buenos Aires. Source: IDB (1998, p. 27).

student learning (Mingat and Tan 1998).⁵ Despite the relatively high pupil-teacher ratio in the 1980s and 1990s, Korean students' average scores on international science and mathematics tests were among the highest. Spending more to hire more teachers might imply a tradeoff against wider coverage and broader distribution of education, which would be inefficient and inequitable, particularly where many children still have no access to basic education (Mingat and Tan 1998).

Achieving Equitable Education and Social Inclusion

Equal access to education and health services is among the basic human rights to which everyone is entitled. As with land and physical capital, an equitable distribution of human capital is important for broad-based growth

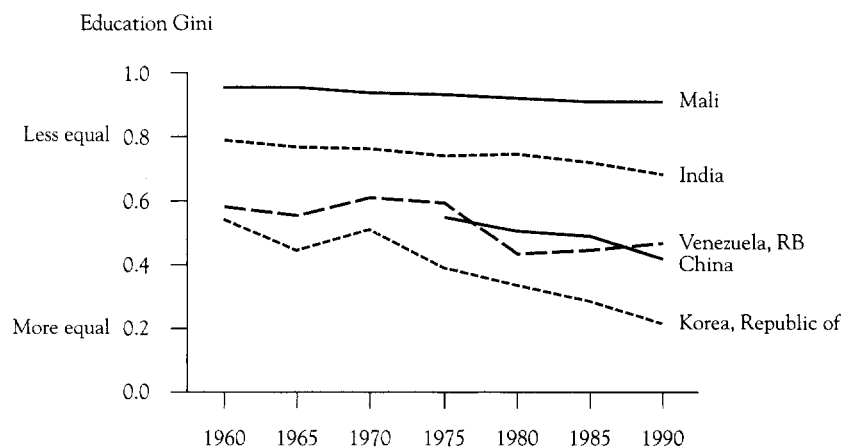
and poverty reduction. Moreover, equitable distribution of opportunities is preferable to the redistribution of existing assets, because investing in people creates new assets and improves social welfare.⁶ Ensuring access by the poor by distributing education services more equally is a win-win policy that is gaining support in both industrial and developing countries.

Why the focus on the distribution of education? This is because ensuring access to basic education by the poor is closely related to a better distribution of education. Given limited public resources for education, concentrating public investment on education for the poor usually implies a reallocation of public spending away from subsidies to the types of education services that benefit the rich. Such policies are politically unpopular, and many countries have been unable to implement them. However, as shown in this section, there are compelling reasons why a government should pursue such policies.

Measuring Dispersions in Education Outcomes

Since the days of Adam Smith, education has been linked to equitable social and economic progress. There is a small but growing literature on schooling inequality or the distribution of education (see, for example, Lam and Levinson 1991; Londoño 1990; Maas and Criel 1982; Ram 1990). As data became available for measuring the distribution of education, the disparities became more apparent. Using standard deviation of schooling attainment, Birdsall and Londoño (1997) investigated the impact of initial asset distributions on growth and poverty reduction and found a significant correlation between initial educational inequality and reduced income growth.

Later, researchers constructed education Gini coefficients, which are similar to the Gini coefficients widely used to measure distributions of income, wealth, and land. The Gini coefficient ranges from 0, which represents perfect equality, to 1, which represents perfect inequality (see annex 3 for the two methods used to calculate the Gini coefficient). Education Gini coefficients can be calculated using enrollment, financing, or attainment data, recognizing that different cohorts in a population were educated at different times. López, Thomas, and Wang (1998) estimated Gini coefficients of educational attainment for 20 countries and found significant differences in the distribution of schooling. Korea had the fastest expansion in education coverage and the fastest decline in the education Gini coefficient; it dropped from 0.51 to 0.22 in 20 years. India's education Gini coefficient declined moderately, from 0.80 in 1970 to 0.69 in 1990. Education Gini coefficients for Colombia, Costa Rica, Peru, and Venezuela have been increasing slowly since the 1980s, showing that inequality is on the rise (figure 3.3).

Figure 3.3. Gini Coefficients of Education, Selected Countries, 1960–90

Source: López, Thomas, and Wang (1998).

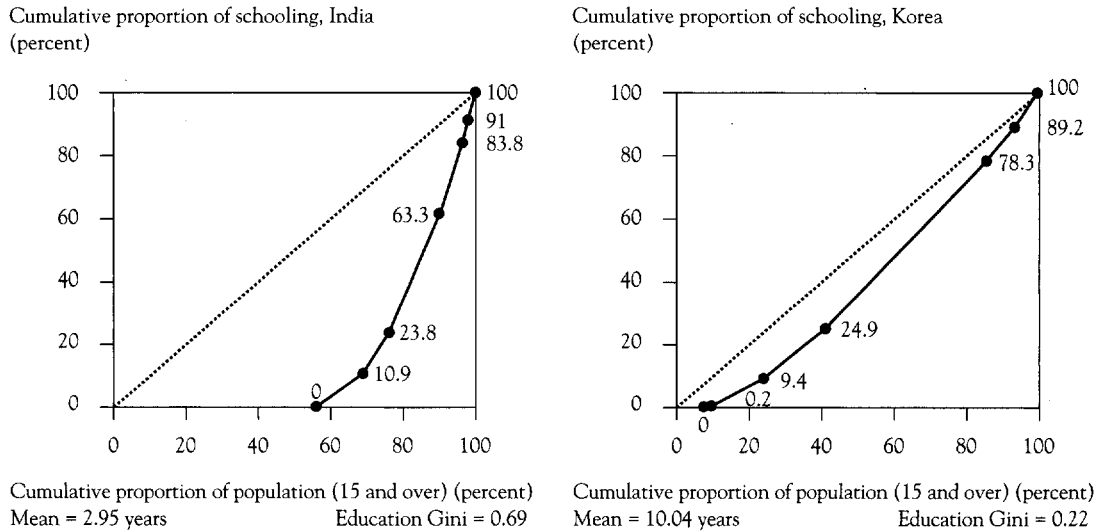
An examination of education Lorenz curves for India and Korea in 1990 shows a great range among developing countries (figure 3.4). Despite progress in expanding primary and secondary enrollment in India, more than half of the population (age 15 and older) did not receive any education while 10 percent of the population received nearly 40 percent of total cumulated years of schooling. Providing universal access to basic education remains a huge challenge for the country.

Korea expanded its basic education program more rapidly, with a far more equitable distribution in educational attainment, as indicated by a flatter Lorenz curve and a smaller Gini coefficient. Even in 1960, when Korea's per capita income was similar to that of India, Korea's education Gini coefficient was 0.55, much lower than that of India in 1990. Note that the distribution of education in Korea was more equitable than that of income, but the distribution of education in India was much more skewed than that of income between 1970 and 1990.⁷

A distribution of education as skewed as that of India implies a huge social loss from the underutilization of potential human capital. Assuming that ability or talent is normally distributed across population groups, production increases to its optimum when the dispersion of education matches the distribution of human ability. When the distribution of education is too skewed to match the distribution of ability, there is a deadweight loss to the society of underdeveloped and underutilized talent. In this case, societies

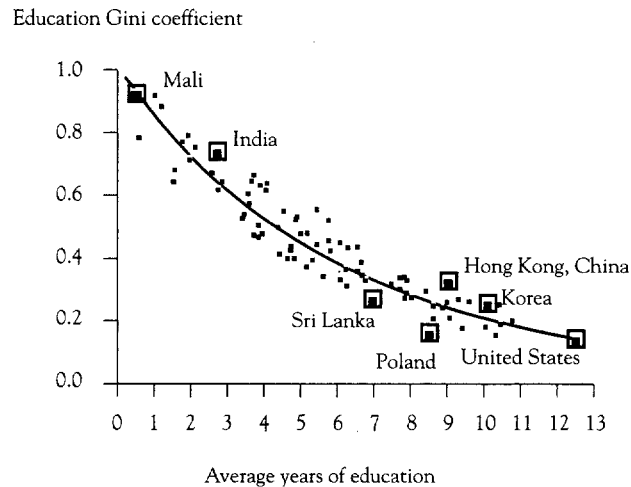
The distribution of education varies enormously, from highly skewed to more equal

Figure 3.4. Education Lorenz Curves for India and Korea, 1990



would be better off to massively expand basic education, especially by improving access to education by the poor.

Examining the cross-country pattern of the distribution of education, we found that education Gini coefficients decline as the average education and income levels increase, although there clearly are other possibilities. Does the education Gini have to get worse before it gets better? As suggested by Londoño (1990) and Ram (1990), there is a “Kuznetsian tale” with distribution of education. That is, as a country moves from the zero to maximum level of education, the variance first increases and then declines. However, country analysis suggests that this may not be the case if Gini coefficients are used to measure inequality. In addition to the industrial countries, Argentina, Chile, and Ireland had relatively low education Gini coefficients from the 1960s to the 1990s. The Gini coefficient for education in Korea and some other countries declined dramatically. Only a few countries—Colombia, Costa Rica, Peru, and Venezuela—have seen a significant worsening of the education Gini coefficient. So worsening distribution of education is not inevitable (figure 3.5). Among 85 countries for which education Gini coefficients were calculated, Afghanistan and Mali had the

*Education Ginis decline as average education level rises***Figure 3.5. Education Gini Coefficients for 85 Countries, 1990**

Source: Thomas, Wang, and Fan (2000).

least equitable distributions in the 1990s at approximately 0.90, while most industrial countries were at the lower end, with the United States and Poland having the most equitable distribution (Thomas, Wang, and Fan 2000). Similar to the large variations in the distribution of education, other studies found large variations in health outcomes across income groups (box 3.1).

Causes of Inequality in Education

Disparities in education is one of many aspects of poverty, but they are also associated with misallocation of public investment, war, wealth gaps, gender gaps, social exclusion, and economic crises. Numerous studies found that parents' education and household income, as well as wealth, affect children's education attainments.

Wealth Gaps. Using data from the National Family Health Survey collected in Indian states in 1992 and 1993, Filmer and Pritchett (1999a) found that the wealth gap, defined as the difference between the top 20 percent of an asset index and the bottom 40 percent, accounted for a large proportion of differences in enrollment rates. Enrollment rates varied from 4.6 percent in Kerala to 42.6 percent in Bihar.

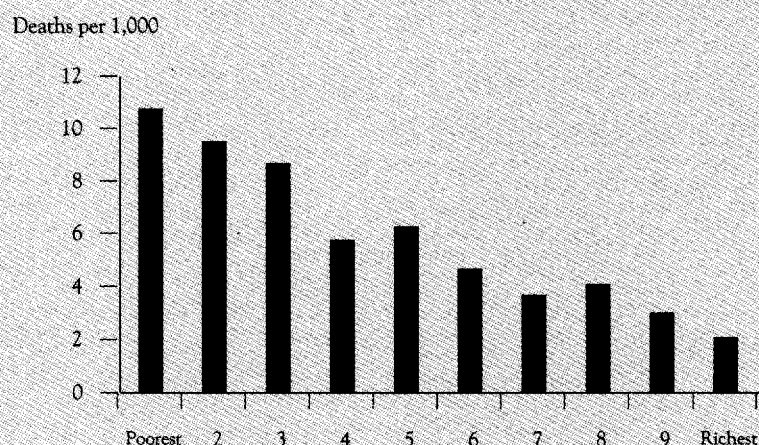
Box 3.1. Health Gaps between the Rich and the Poor Are also Large

Health gaps between the rich and the poor are as large as education gaps, which reflects the difficulties of reaching the poorest people outside the mainstream of economic life. Many studies find that the poorest of the poor are in the worst health (Behrman and Deolalikar 1988), and they are often hit hardest by wars, external shocks, and social and political upheavals. Child mortality rates among the poorest of the poor are often much higher than

those among people who have higher incomes. Figure 3.6 shows that in Brazil, child mortality rates were high among the poorest 10 percent of the population, and fell as wealth rose. It indicates that the poorest of the poor are in worse health than others. They suffer from infectious diseases much more than richer people do. Therefore, they are more dependent on good public policies than the rich (Bonilla-Chacin and Hammer 1999).

The poor are sicker than other people

Figure 3.6. Mortality of Children Two Years Old and Younger by Wealth, Brazil, 1996



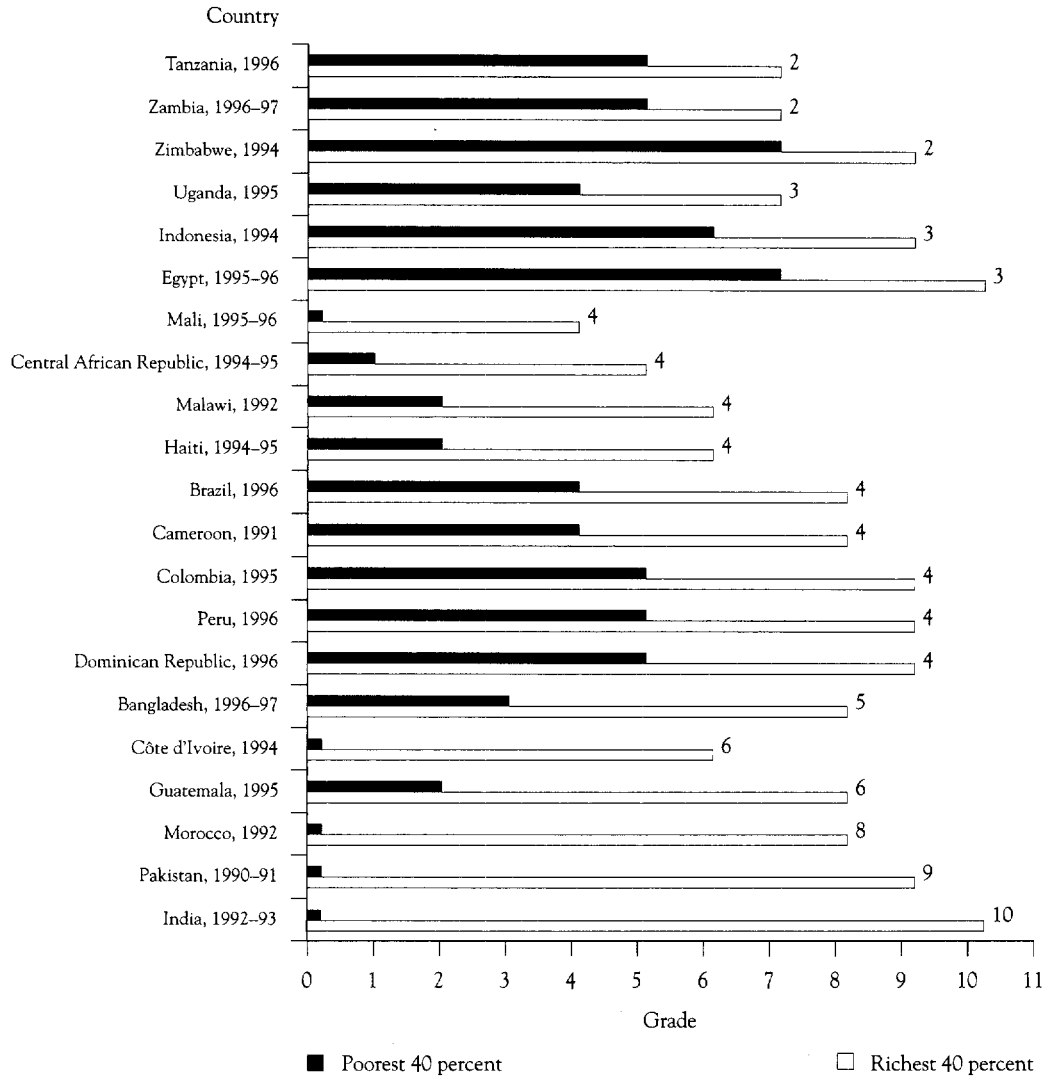
Source: Bonilla-Chacin and Hammer (1999).

In some countries, the differences in educational outcomes between the rich and the poor are staggering. A study of youths aged 15–19 in 20 countries showed that the poorest 40 percent of the population in five countries had a median of zero years of completed schooling; more than half of this group completed less than one year of school (figure 3.7). The education difference between the richest and poorest groups reached as high as 10 grades in India. Similar disparities in education attainment are found in Latin America (figure 3.8).

One implication of this large wealth gap is that demand for education is not independent of other endowments. Providing access to education

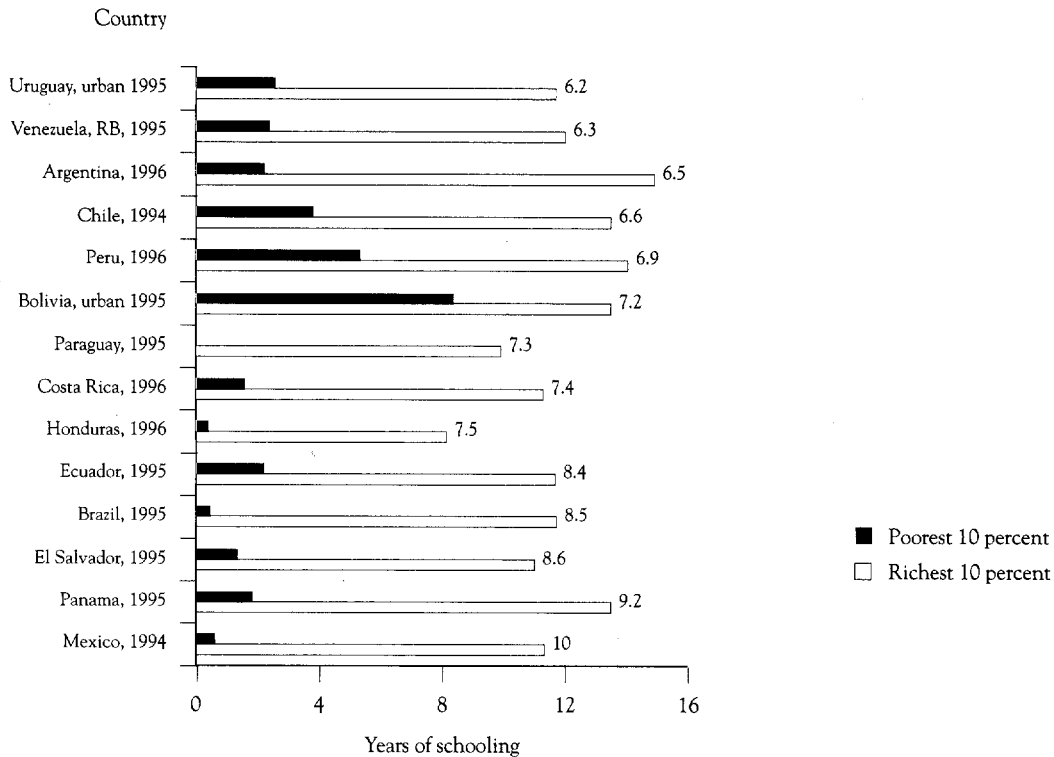
Differences in grade attainment for rich and poor households are enormous in some countries

Figure 3.7. Median Grade Attainment for 15–19-Year-Olds from Rich and Poor Households, Selected Countries and Years



Note: Numbers next to bars are the gaps (in grades) between rich and poor.
 Source: Filmer and Pritchett (1999b).

Figure 3.8. Years of Schooling for 25-Year-Olds from Rich and Poor Households in Latin America



Note: Numbers next to bars are the gaps (in years of schooling) between rich and poor. The surveys for Argentina include only Greater Buenos Aires.

Source: IDB (1998, p.27).

(supply) is not sufficient. Addressing many structural and social inequalities influencing demand, such as gender gaps and the distribution of other productive assets such as land (discussed later), is important as well.

Social Exclusion. People who are excluded from mainstream society are less likely to be educated. Loury (1999) showed how social exclusion changes human behavior and reduces the demand for schooling in inner cities of the United States. One reason that students drop out of school is because their peers have dropped out. In Bolivia, the inability of parents to speak Spanish is associated with higher mortality rates for children under two years old. In India, members of scheduled castes have higher mortality rates than other groups (Bonilla-Chacin and Hammer 1999).

Gender Gaps. In some countries gender gaps are an important cause of education inequality. Among many studies addressing gender gaps in education, Schultz (1998) found that some 65 percent of world inequality is between countries, 30 percent is between households in a country, and 5 percent is between gender inequality. Bouis and others (1998) found a significant difference in human capital investments, such as in nutrition, health care, and educational attainment, between boys and girls in the rural Philippines. In Bangladesh, which has the largest gender gap out of the countries reviewed, women's attitudes toward their daughters' education have been slow to change (Amin and Pebley 1994). However, recent efforts have resulted in encouraging progress (box 3.2). Knight and Shi (1991) found that educational opportunities were still unevenly distributed in China despite considerable progress. The pattern of educational attainment is affected by gender as well as by other factors, such as income of the provinces, rural-urban differences in income, and family background. Though on the decline, gender discrimination persists in China's rural areas (see Dubey and King 1996; King and Hill 1993; and World Bank 2000g for cross-country experiences).

The correlation is strong between inequality in education and gender gaps in literacy. Using a sample of 85 countries for which education Gini coefficients are available, Thomas, Wang, and Fan (2000) found that

Box 3.2. Supporting Girls' Education in Bangladesh

A revolution is taking place in schools across Bangladesh. Enrollment trends are changing and now more girls than boys can often be seen in schools.

The educational attainment of women in Bangladesh is among the lowest in the world, and the gender gap is among the largest. In 1997, the female-male illiteracy gap was as high as 23 percentage points. According to 1991 census data, only 20 percent of women could read and write, and only one in three students in secondary schools were girls.

In 1994, the government launched a program to increase support for female secondary education, to raise the female literacy rate from 16 to 25 percent, and to create employment opportunities for

women. With support from the World Bank and other development partners, the program is being implemented successfully and has made Bangladesh a South Asia pioneer in this area.

The incentive program for girls, including fee exemptions and cash stipends, has generated tremendous enthusiasm for female education and has boosted the enrollment of girls in secondary schools. Girls' enrollment in the project districts is above expectations: enrollments rose every year and for every class. A total of 554,077 girls were awarded stipends in 1996, and the number was greater in 1997. In the Fulbaria Mohammad Ali High School in Savar, near Dhaka, girls outnumber boys four to one; a situation that was unthinkable a few years ago.

Source: Robboy (1999).

correlation coefficients between gender differences in illiteracy and education Gini coefficients increased significantly from 0.53 in the 1970s to 0.69 in the 1990s. While educational inequality declined, gender inequality accounted for much of the remaining disparities in educational attainment (figure 3.9). Reducing gender gaps in education is crucial to addressing the inequality in education.

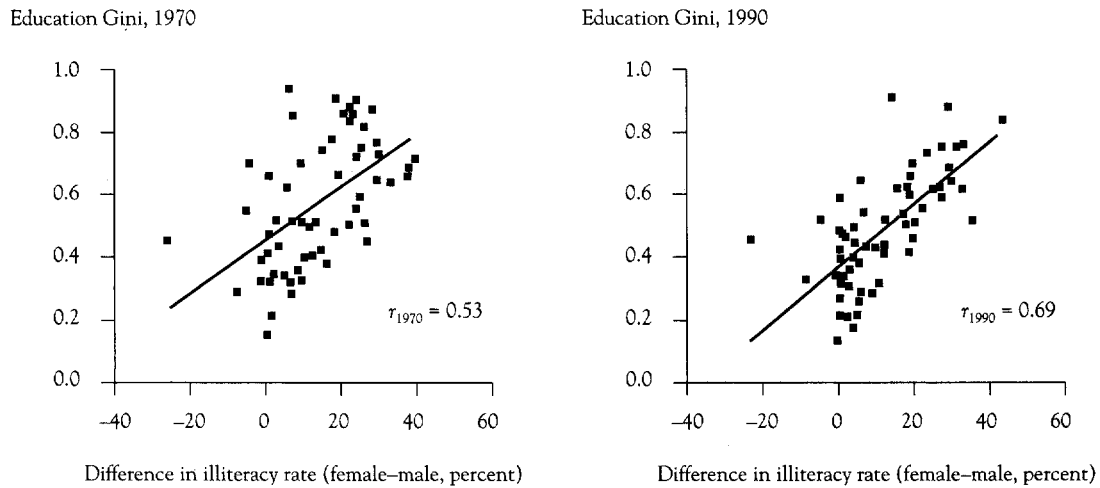
Consequences of Large Dispersions in Education Outcomes

A society cares about the unequal distribution of education because it directly affects human welfare. Unequal distribution of education is both a source and a consequence of poverty and social exclusion. Poor children who drop out of school eventually form a core of disadvantaged citizens who will be left out of mainstream economic and social life. Unless such people can obtain training later in life to find a meaningful job, poverty reduction and social inclusion will remain out of reach.

A highly skewed distribution of education tends to be associated with reduced per capita income growth, even after controlling for labor and

While education inequality has been declining, gender inequality accounts for much of what remains

Figure 3.9. Gender Gaps and the Inequality of Education, 1970 and 1990



Note: The figures include data for 85 countries.

Sources: Education Gini coefficients from Thomas, Wang, and Fan (2000); gender gap in illiteracy from World Bank (1999d).

physical capital (López, Thomas, and Wang 1998). Unlike land and physical capital, which are tradable across firms and individuals, education and skills are not perfectly tradable. As a consequence, both the distribution and level of education enter the production function and affect the level and growth of output. Using panel data from 20 developing countries, López, Thomas, and Wang (1998) demonstrated the negative association between skewed distribution of education and economic growth. When a large part of the population is not educated, the low productivity of the labor force discourages investment in physical capital, and economic growth suffers (see regression analyses in table A2.1 and annex 3).

The distribution of education also holds strong implications for the poverty-reducing impact of growth. Ravallion and Datt (1999), using data from 15 Indian states between 1960 and 1994, found that the poverty-reducing association of growth varied according to initial conditions: growth contributed less to poverty reduction in states with initially lower literacy rates, farm productivity, and rural standard of living relative to urban areas. In Kerala, where basic education is well distributed and literacy rates are the highest, for males and females, a percentage point increase in the growth rate was more strongly associated with poverty reduction.

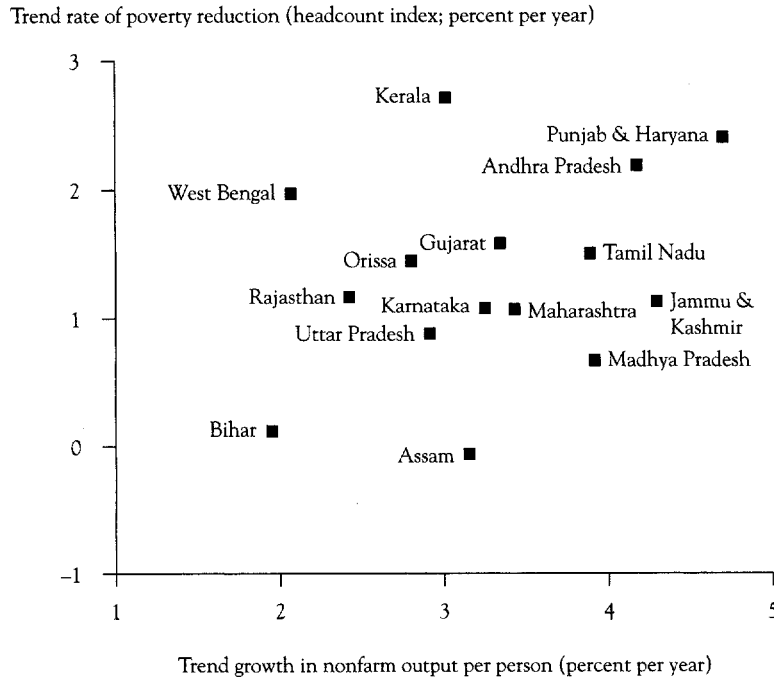
In Assam and Bihar, which had similar nonfarm growth rates to that of Kerala, but low literacy rates and higher inequality in basic education, growth contributed little to poverty reduction (figure 3.10). For example, Bihar, with the lowest female literacy rate among the states studied, 29 percent, showed a 32 percent gender gap in literacy rates, and 6 million children ages 6–10 were not enrolled in school between 1992 and 1993. Other states, such as Maharashtra and Madhya Pradesh, had higher growth rates but lower poverty reduction rates than that of Kerala. More than fast growth, pro-poor growth is needed for poverty reduction. If all Indian states had an elasticity of poverty reduction like Kerala, poverty, as measured by the headcount index, would have fallen at a rate of 3.5 percent, instead of 1.3 percent, a year since 1960.

Improving the Efficacy of Public Spending

Markets alone cannot provide equitable access to basic education by the poor. As partly a public good, education provides positive spillovers that are not fully captured by individuals and firms. However, the market fails mainly at the lower end of the income distribution: without public investment in the education of the poor, society's investment in education would be suboptimal. Yet, as we have seen, public spending is only weakly associated with education outcomes, partly because of a bias toward the better-off. Increasing public spending is desirable, but not enough to deal with the

Growth has a stronger poverty reducing impact in states with more equitable education such as Kerala

Figure 3.10. Trend Rates of Poverty Reduction and Nonfarm Output Economic Growth in India, 1960-94



Note: Trend rates of growth estimated by ordinary least squares regressions of the logarithms on time.
 Source: Ravallion and Datt (1999).

inadequate human development outcome, therefore, we now turn to improving the allocation and efficacy of spending.

Allocate More Public Spending to the Education of the Poor

The composition of government expenditures on education and health influences human development outcomes. Public spending needs to concentrate on areas where market failure is pervasive and where positive spillover is largest: in primary and secondary schooling, especially for the poor. Given limited public resources, the balance needs to shift more toward investments in primary and secondary education. Additionally, the private sector and public-private partnerships should be encouraged to provide higher education where market failure is minimal.

Korea showed how a strong emphasis on primary and secondary education could eliminate illiteracy and reduce educational inequality. Korea allocated two-thirds of its public education spending to primary schooling in the 1960s and early 1970s (table 3.2). Public spending on secondary education rose from 22 percent in 1965 to 33 percent in 1990. Yet, public expenditures on higher education rarely exceeded 12 percent of the total public spending between 1965 and 1990. Tertiary education was mainly financed by private investments. Before the 1990s, India spent a larger share on higher education than did Korea and a smaller, but increasing, share on primary education. In the mid-1990s, India increased its spending on elementary schools and adult literacy programs from 20 to 31 percent of its total public spending on education, which was still far below that of Korea. To provide broader access to education and reduce the inequality, more remains to be done to improve the allocation of public investment in India.

Measured by public spending per student, public subsidies to higher education have been falling in many countries, but not fast enough to enable reallocation of public funds to basic education (table 3.3). Resource allocation is still biased against primary and secondary education in most countries. In the United States, the allocation of public spending has been balanced for more than 30 years, with subsidies to primary schooling at more than 20 percent of gross national product (GNP) per capita, the highest in the world. In Korea, due to the large number of students in primary schools, government support per student did not sufficiently emphasize primary education in the 1960s, even though more than 60 percent of total spending was allocated to primary education. This pattern was reversed in the 1980s, when public spending per primary school student exceeded that per college student. Associated with a strong emphasis on basic education, Korea was able to reduce education inequality rapidly. The United States has maintained the lowest education Gini coefficient in the world since 1965.

Venezuela, in contrast, has favored higher education over basic education for more than four decades. While total public spending on education

Table 3.2. Public Spending by Level of Education, Korea, Selected Years
(percentage of total expenditures on education)

<i>Levels</i>	1965	1970	1975	1980	1985	1990
Primary	64.7	67.4	52.2	47.9	44.5	43.2
Secondary	21.8	20.9	37.1	33.8	37.7	33.1
Higher education	13.3	8.2	10.7	11.4	11.5	9.6

Source: UNESCO database.

Table 3.3. Public Expenditure Per Student by Level, 1960s to 1990s

Country	Level	Public expenditure per student (percent of GNP per capita)				Education Gini coefficient (national average, all levels)	
		1960s	1970s	1980s	1990s	1980	1990
Argentina	Primary	—	3.06	6.49	8.32	0.29	0.27
	Secondary	26.17	10.43	—	—		
	Tertiary	59.29	23.58	17.45	19.84		
Chile	Primary	6.92	6.08	12.53	9.20	0.32	0.31
	Secondary	—	12.01	12.58	8.80		
	Tertiary	151.71	67.46	79.69	23.36		
Korea, Republic of	Primary	6.21	7.86	12.79	14.86	0.34	0.22
	Secondary	8.64	7.39	10.76	11.88		
	Tertiary	36.67	28.02	10.49	5.83		
Mexico	Primary	4.34	—	3.97	7.18	0.50	0.38
	Secondary	—	—	8.61	13.93		
	Tertiary	70.72	—	32.43	35.66		
United States	Primary	22.05	28.45	26.28	19.83	0.12	0.15
	Secondary	—	—	18.77	23.86		
	Tertiary	73.73	58.84	37.85	22.91		
Venezuela, RB	Primary	8.50	7.37	4.80	2.39	0.39	0.42
	Secondary	21.26	17.60	18.34	7.07		
	Tertiary	121.76	100.00	65.74	37.38		

— Not available.

Sources: Public expenditure data are from the UNESCO database; education Gini coefficients are from Thomas, Wang, and Fan (2000).

has increased from 4.3 percent of GNP in the 1970s to 5.1 percent in the 1980s and 4.6 percent in the 1990s, its allocation has worsened. In fact, the subsidies to primary and secondary education were reduced in the 1990s. This misallocation of public resources might partially explain the worsening of the education Gini coefficient in the 1990s.

The Interaction between Demographics and Education

Public spending per primary-school-age student in Korea rose more than ten-fold between 1970 and 1995 as population growth rates slowed and the economy expanded (table 3.4). Public spending per secondary student also rose. Rapid economic growth, together with a stabilizing and even declining student base, meant that far more resources were being devoted to fewer children, allowing dramatic improvements in the quality of primary education.

Table 3.4. Public Current Expenditure Per Student, India and Korea, Selected Years

Country	Level	1965	1970	1975	1980	1985	1990	1995
<i>Amount (1995 US\$ per student)</i>								
Korea, Republic of	Primary	92	207	182	386	701	955	1,890
	Secondary	—	223	134	339	541	786	1295
	Tertiary	545	757	622	589	546	460	599
India	Primary	8	10	20	23	29	39	39
	Secondary	—	54	35	34	38	—	43
	Tertiary	—	—	—	189	227	299	260
<i>Percentage of GDP per capita</i>								
Korea, Republic of	Primary	6.3	9.5	6.3	10.2	13.5	12.0	17.4
	Secondary	—	10.3	4.6	9.0	10.4	9.9	11.9
	Tertiary	37.2	35.0	21.5	15.6	10.5	5.8	5.5
India	Primary	4.3	4.8	9.2	9.7	10.6	11.8	9.9
	Secondary	—	24.9	15.8	14.8	13.9	—	11.0
	Tertiary	—	—	—	81.8	84.0	90.3	66.4

— Not available.

Note: Dollar amounts are not comparable across countries as they are not in PPP dollars, but are comparable over time.

Sources: Calculated from UNESCO and World Bank data.

In India, rapid population growth and constraints on public funding meant that a quantity-quality tradeoff was likely to occur. In 1995, India spent US\$39 (in 1995 constant dollars) per pupil in primary schools, or 10 percent of its GDP per capita; Korea spent 17 percent (table 3.4). In Tamil Nadu, India, enrollment in primary and middle schools expanded 35 percent between 1977 and 1992, a major achievement, but the pupil-teacher ratio rose from 36 to 47 and school conditions worsened. Student achievement suffered as a result (Duraismy and others 1998). These relationships point to a need to consider the interaction between demographics and education policy and a need for policies focusing on education of girls and women, education to improve reproductive health, and voluntary family planning as part of an overall development strategy centered on people (see also box 3.3).

Improve the Mix of Public and Private Spending

Korea also achieved a good mix of public and private financing in education. Since the mid-1960s, private colleges and universities have accounted

Box 3.3. Population and Development

The link between population growth and economic development is a subject of contentious debate. The 1960s and 1970s were dominated by pessimistic, and sometimes alarmist, predictions that rapid population growth would lead to famines, resource exhaustion, deficiencies in saving, irreversible environmental damage, and ecological collapse (Ehrlich 1968). The population optimists believed that rapid population growth would allow countries to capture economies of scale and promote technological and institutional innovation (Simon 1976). In the 1980s, the alarmist views were replaced by moderated, time- and country-specific assessments of the net negative impacts of rapid population growth, which were considered to be small. Only weak or inconclusive links were found between demographic changes and economic growth (Bloom and Freeman 1988; Kelley 1988).

More recent investigations revealed fairly large, negative effects of rapid population growth and related demographic components on per capita economic growth. Kelley and Schmidt (1999) found that rapid population growth exerted a fairly strong, adverse impact on the pace of economic growth in 89 countries between 1960 and 1995. The positive impacts of density, size of population, and labor force entry were dominated by the costs of rearing children and maintaining an enlarged youth dependency age structure. Declining mortality and fertility each

contributed approximately 22 percent to changes in output growth between 1960 and 1992, a figure that corresponds to approximately 21 percent of the average growth of per capita output, which was measured at 1.5 percent.

Various components of demographic change have been successfully introduced into growth models. Bloom and Williamson (1998) showed that rapid demographic transition in East Asia led to fast growth in the working-age population between 1965 and 1990, expanded the per capita productive capacity, and contributed to the East Asia economic miracle. Other economic policies also facilitated the East Asians to realize the growth potential of the demographic transition.

Less evidence was available on the link between demographic change and poverty until recently. However, if rapid population growth has a negative effect on economic and wage growth, it would negatively affect poverty as well. Eastwood and Lipton (1999) found that higher fertility increases poverty both by retarding growth and by skewing the distribution against the poor. In addition, evidence shows that public sector programs targeted at the poor, such as basic education and health care programs, have contributed to reduced poverty. Rapid population growth will dilute the intensity of public investment, and as a consequence make quality of service improvements more difficult to achieve.

Sources: Bloom and Williamson (1998); Eastwood and Lipton (1999); Kelley (1998); Kelley and Schmidt (1999).

for more than 70 percent of enrollments, private secondary institutions for more than 40 percent. Households assume a large share of educational costs, between 30 and 50 percent, depending on student education level. Tuition and related fees account for 40 percent of in-school expenditures for middle school, but rise sharply to 72 percent and more for high school and college students.

The most effective public-private mix depends on the extent of market failures and a variety of other factors. Higher education is crucial for technological progress and productivity growth, but it can be considered a

private good, because most of the returns can be internalized by individuals and firms. Whereas primary and secondary education have large spillover effects that are not fully captured by individuals and firms. Thus while government has a direct role in primary and secondary education, it needs to encourage private investments and public-private partnerships in higher education. The United States, for example, provides valuable experiences in this regard.

The policy environment, which can be defined by the degree of openness to trade and investment, for example, affects the demand for skilled workers and as a consequence people's willingness to pay for education. The quality of service provision for education, which is related to institutional capacities, also affects the willingness to pay. Similarly, the public-private mix in health care also depends on the nature of services and the degree of market failures in particular subsectors (Filmer, Hammer, and Pritchett forthcoming).

One successful intervention is the Quetta Girls Fellowship Program in Pakistan. Launched in 1995, the pilot project aimed at determining whether establishing private schools in poor neighborhoods was a cost-effective way of expanding primary education for girls. The program encouraged private schools controlled by communities, ensuring them government support for three years. An evaluation analysis indicates that the program increased girls' enrollments by 33 percentage points, and boys' enrollment rose as well. Such programs offer promise for increasing enrollment rates in poor urban areas (Kim, Alderman, and Orazem 1999).

Decentralize Decisionmaking and Encourage Participation

How decisions are made also affects the efficacy of public services. Where institutional capacity is low, public spending on centrally planned and organized interventions is likely to be ineffective. Many countries are moving to decentralized decisionmaking to better match expenditures to local needs. Empirical evidence on the benefits of decentralized school management was rare until recently. A recent evaluation of El Salvador's EDUCO program (Community-Managed Schools Program) shows that enhanced community and parental involvement in EDUCO schools has improved students' language skills and diminished student absences, which may have long-term effects on achievement (Jimenez and Sawada 1999). Other studies have also shown that community-managed schools achieved better results in Indonesia and the Philippines (James, King, and Suryadi 1996; Jimenez and Paqueo 1996).

Several countries have been experimenting with voucher programs, which transfer resources to parents to help pay private school tuition. Colombia

used a national voucher program from 1991 to 1997 to decentralize management and expand enrollment. The program was meant to address the deficiencies in the public education system, especially the low transition rate from primary to secondary schools by the poor. Only the poor were qualified for vouchers, which avoided subsidizing the wealthy as in previous voucher programs. Participation was a problem, however; only 25 percent of Colombia's municipalities joined the program, limiting the benefits. A careful evaluation of the program found that demand for secondary education and availability of space in private schools were key determinants of municipal participation (King, Orazem, and Wohlgemuth 1999). Such voucher programs are potentially beneficial to the poor.

In countries with corrupt and predatory governments, however, decentralizing decisionmaking may not be the answer. Corrupt officials are likely to reallocate public resources from the poor to elite interest groups, subsidizing the types of social services that benefit the rich. Empowering people to influence policy through democratization and a greater role for civil society, and encouraging greater participation of the community and families are steps in the right direction (see chapter 6 on the role of participation and civil society in anticorruption and better governance).

Making Education More Productive

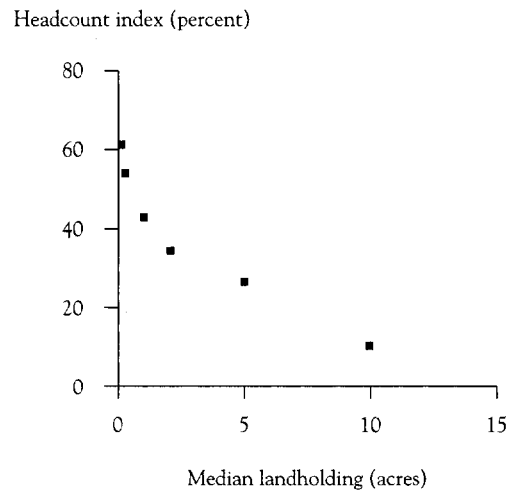
Improving the productivity of education for the poor takes more than investments in their education. To be more productive, the poor must be able to combine their human capital with other productive assets such as land, equity capital, and job opportunities in open and competitive markets.

Distribute Land more Equitably

The poor are not just income poor; they also lack assets. In agrarian economies, disadvantaged households are usually landless or land poor. In South Asia, southern Africa, and much of Latin America, poverty is highly correlated with landlessness (figure 3.11a). Income inequality also seems to be associated with inequality in landholding (figure 3.11b), although data on land ownership is weak.

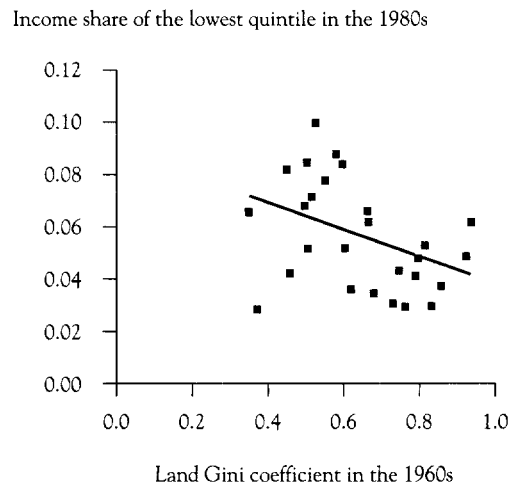
Land reform has many benefits for growth and poverty reduction, as suggested by empirical studies discussed later. In societies where a large segment of the population does not have access to the productive resources of the economy, strong demand for redistribution gives rise to civil unrest. Studies suggest that inequality in land ownership and income are correlated with subsequent lower economic growth (Alesina and Rodrik 1994); a one

Figure 3.11a. Poverty and Landholding, Bangladesh, 1988-89



Source: Ravallion and Sen (1994).

Figure 3.11b. Income Share in the 1980s and Land Gini Coefficients in the 1960s



Note: Data are country-specific decade averages. $N = 27$. $r = -0.40$.
 Source: Deininger and Squire (1996).

standard deviation increase in equality is associated with increases in growth of one-half to 1 percentage point (Persson and Tabellini 1994). Other studies showed that the initial inequality of assets, measured by land distribution, is more significant than income inequality in affecting subsequent growth (Deininger and Squire 1998; Li, Squire, and Zou 1998; Lundberg and Squire 1999). Still others have found initial land inequality, along with initial education inequality, to have strong negative links to economic growth and to the income growth of the poorest (Birdsall and Londoño 1998). In addition to being negatively correlated with growth, land inequality also appears to reduce the positive effect of human capital on growth through interaction effects (Deininger and Olinto 1999).

Redistributive land reform gives land to more efficient producers and reduces credit market imperfections, leading to improved investment decisions by the poor. Greater wealth, as measured by land ownership, also provides a safety net for the poor against external shocks and increases their ability to participate in the political process (Binswanger and Deininger 1997; Binswanger, Deininger, and Feder 1995). Ravallion and Sen (1994) noted that redistribution from land-rich to land-poor households would reduce aggregate poverty in rural Bangladesh. They also found that transfers from the budget would have the greatest impact on poverty if concentrated on landless and marginal farmers (see annex table A3.5 for a selective literature review).

Widespread ownership of land improves not just equity, but also productivity (Berry and Cline 1979) and efficiency (Banerjee 1999). Better land rights have facilitated investment in Ghana (Besley 1995), and possession of legal land ownership documents in Thailand has significantly impacted farmers' agricultural performances (Feder 1987, 1993). Many East Asian economies have widespread landholdings, a result of traditional ownership or land reform. In Korea, confiscated land at the end of World War II was first distributed to the tillers. Then in the 1950s the government distributed landlord properties, with nominal compensation, to 900,000 tenants, effectively eliminating tenancy. In Taiwan, China, the government obtained land from landlords in the early 1950s, compensated owners with shares in state enterprises, and then sold the land to tillers on favorable terms.

In China, the household responsibility system introduced in 1979 assigned collectively owned land to households for up to 15 years. The system, which was renewed for another 30 years in 1998, tied rewards more closely to farming efforts. Together with price and other reforms, the initiative resulted in a 5.7 percent annual rise in average grain yields from 1978 to 1984 and 1.8 percent thereafter. Nearly half of the total output increase in the period can be attributed to the household responsibility system (Lin 1992). One study

found that access to land can improve nutritional status in China, because it serves both as a means of generating income and as a source of cheap calories relative to the market (Burgess 2000). Another study found that in rural China, wealth, especially land, is distributed more equally (Gini coefficient of 0.31) than income (Gini coefficient of 0.34). The main source of rural income inequality is wage income rather than the returns from land, an atypical pattern for a developing country (McKinley 1996).

Land reform is contentious and politically difficult. Market-assisted land reform has emerged in recent years as an alternative to traditional land reform, and is being implemented by Brazil, Colombia, and South Africa. The basic idea is that the state gives qualified, landless people a grant or a subsidized loan to buy land. This market-assisted approach differs from fully compensated land reform in two ways: there are neither explicit targets for land distribution nor fixed time schedules. In addition, the reforms are demand driven; people who want the land most will come forward to buy it. Some researchers contend that market-assisted land reform has advantages, especially if combined with microcredit, extension programs, and complementary actions that facilitate agricultural cooperatives and contract farming (Banerjee 1999). The success of the programs can be enhanced if accompanied by efforts to make land markets more transparent and fluid and to involve the private sector (Deininger 1999). While it is still too soon to reach definitive conclusions on the costs and benefits of these reforms, some other studies have found that this approach benefits large landholders because land prices are likely to be bid up, requiring the poor to pay elevated prices (López and Valdes 2000).

Distribute Equity Capital and Foster Competition

A case can also be made for better distribution of equity through employee ownership plans. In industrial countries, employee stock ownership plans have been positively associated with firms' performances. Firms in the United States have used employee ownership plans in restructuring. For example, United Airlines negotiated significant wage concessions in return for a majority equity stake for employees. By communicating the benefits of the restructuring plan to its investors and employees, the company reduced the up-front restructuring cost, enhanced the effects of the restructuring, and thereby created additional shareholder value. Both investors and employees have benefited (Gilson 1995).

In countries hit by the recent financial crises, the sale of equity shares to employees may provide a way to recapitalize companies in desperate need of capital, and can also redistribute wealth and risks. Where restructuring leads to retrenchments, laid-off workers may be given equity shares

in lieu of severance pay, and so benefit from the companies' restructuring and recovery. Employee ownership plans can also help reduce workers' resistance to restructuring (Claessens, Djankov, and Klingebiel 1999). Providing microfinancing to laid-off workers to establish small enterprises is another way to empower them to build physical and financial capital.

Privatization offers additional opportunities for redistributing equity. Because public enterprises were built using tax revenues, a certain proportion of the equity shares can justifiably be distributed or sold at a discount to taxpayers during privatization. Properly designed privatization programs can reduce asset inequality and poverty. For example, using proceeds from the privatization of the six largest state enterprises, Bolivia established a pool of financial assets to fund a minimum flat pension for everyone in the country. While the amount provided is small, the program will reach the most vulnerable in society: the elderly poor who are unable to save for retirement. Hungary used its receipts from privatization to repay foreign debt, which raised its sovereign debt rating, reduced its interest payments, and benefited all citizens (Kornai 2000).

Privatization entails efficiency gains as well as social losses, and society must maintain a balance between the efficiency gains and social losses (and compensate the losers), if the gains are to be sustainable. After privatization in Mexico, there was a 24 percentage point increase in the ratio of operating income to sales. Of those gains in profitability, 10 percent were due to higher product prices, 33 percent to a transfer from laid-off workers, and the remaining 57 percent to productivity gains (La Porta and Lopez-De-Silanes 1999). To compensate those who suffer losses as a result of privatization, equity shares in lieu of severance pay could be distributed to laid-off workers, or other forms of income transfers could be financed by taxation.

Competition and regulation are vital for a market economy. The efficiency of a market economy depends on both private property and competitive markets, but many developing and transition economies lack both. Before and during privatization, competition and a regulatory framework must be introduced (Stiglitz 1999). Evidence from the United Kingdom shows that when big public enterprises were privatized, antitrust regulations were crucial to ensure transparent, equitable, and efficient allocations of resources (see also Herrera 1992). Privatizing large public firms that have a natural monopoly without first setting up antitrust regulations, as was done in Russia, can worsen the distribution of wealth and income. And it could create powerful, entrenched interests that undermine the possibility of viable regulation and competition in the future, and block further broad-based reform measures (Kornai 2000).

Combine Human Capital with Opportunities in Open Markets

The urban poor must hire out their labor. Thus, the creation of job opportunities is critically important to the productive use of their human capital and to poverty reduction. The *World Development Report 1990* (World Bank 1990) proposed a strategy of broad-based, labor-intensive growth to generate income-earning opportunities for the poor. Some economies have pursued this strategy and more—they have combined investment in learning and education with openness, forming a virtuous circle. Examples include Japan in the 1950s and Hong Kong, China; Korea; Singapore; and Taiwan, China, from the 1960s through the 1980s.

The accumulation of knowledge influences a country's trade and competitiveness, and trade enhances the accumulation of knowledge, especially through imports. Lucas (1993) noted that to sustain knowledge accumulation, a nation must be outward oriented and a significant exporter. Young (1991) and Keller (1995) found that trade itself is not an engine of growth, but must operate through some mechanism, such as the formation of human capital, to affect growth.

Market openness facilitates technological progress and capacity building through various modes of learning, such as the importation of capital and intermediate goods, learning by doing, and on-the-job training. Foster and Rosenzweig (1995) found strong evidence of learning-by-doing and learning spillovers: farmers' own experiences and that of their neighbors with high-yield varieties significantly increased profitability. Farmers with experienced neighbors are significantly more profitable than others, and the spillover effects associated with learning from others are small, but not unimportant.

The link between overall economic policies and the impact of education is clear. The *World Development Report 1991* (World Bank 1991) found that among 60 developing countries from 1965 to 1987, economic growth rates were especially high for countries with high levels of education, macroeconomic stability, and market openness. The impact of trade openness on long-term growth thus depends on how well people can absorb and use the information and technology accompanying trade and foreign investment.

Increases in the stock of human capital tend to accelerate growth during market reforms and under an outward-oriented economic structure, but in their absence, education has no significant impact on growth. The growth effect of an interaction between openness and education was robust (López, Thomas, and Wang, 1998; see also chapter 2 and annex 2). Similarly, for 1,265 World Bank projects, Thomas and Wang (1997) found that the rate of return was 3 percentage points higher in countries with both a more educated

labor force and a more open economy than in countries that had only one or the other (figure 3.12 and annex table A3.4).⁸

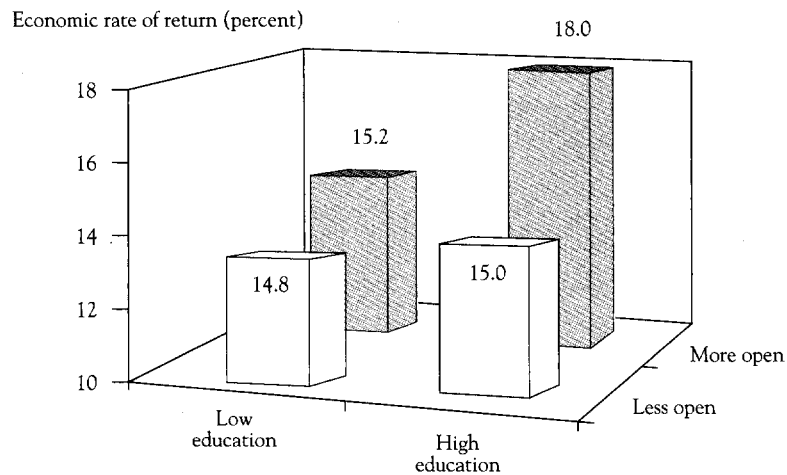
Protect Workers against Shocks

The urban poor usually lack adequate human capital for all but unskilled work. With increased openness and globalization, job opportunities for unskilled workers have become more scarce and incomes more volatile. Diwan (1999) found that labor shares in GDP have been falling for more than 20 years in most regions. Consistent with this evidence, unemployment rates in Latin America have risen since the end of the 1980s. In 1989, only 5 or 6 of every 100 Latin Americans willing to work were unemployed; by 1996, nearly 8 of every 100 were not working.

Unemployment rose in East Asian countries hit by the recent financial turmoil, from previously modest levels to 4.5 percent in Thailand, 5.5 percent in Indonesia, and 7.4 percent in urban Korea (World Bank 2000a, p. 59). Perhaps even worse was the fall in real wages, because the poor could not afford to remain unemployed. Real wages fell in 16 of 22 recessionary episodes in

Education and openness interact and increase investment returns

Figure 3.12. Education, Openness, and Economic Rates of Return in 1,265 World Bank Projects



Note: Economic rates of return are from the evaluation database of the World Bank's Operations Evaluation Department. Education is measured by the average level of schooling of the labor force, and openness by the logarithm of the foreign exchange parallel-market premium.

Sources: Thomas and Wang (1997); annex 3.

Latin America during the 1980s and 1990s. In 18 cases, after two years real wages remained lower than their precrisis levels (Lustig 1999). In East Asia, manufacturing real wages fell by 4.5 percent in Thailand, 10.6 percent in Korea, and 44 percent in Indonesia between 1997 and 1998 (World Bank 2000a, p. 57). As a result of both a decline in real wages and in employment growth, labor shares in GDP fell sharply following the financial crises, perhaps because labor is less mobile than capital, and so is forced to bear a large share of the financial burden of crisis resolution (Diwan 1999).

Urban unskilled workers are most vulnerable to external shocks, structural adjustment, and economic downturns. Lacking adequate human capital, they are often unable to adjust to changes in labor market demand. The problem is exacerbated by labor market distortions and weak labor market institutions that further hamper labor market adjustments. Labor market distortions need to be checked: the existence of child labor and distorted wage structures discourage demand for education. Governments need to help build labor market institutions and provide the labor market information that the poor need.

There is also the need to train or retrain displaced workers and increase their mobility across sectors. Ghana trained more than 4,000 people in vocational schools or apprentice programs, which offered instruction in such skills as dressmaking, electrification, and carpentry. Participants received certificates and tools after completing the training, giving them the human and physical capital to begin work immediately as self-employed workers. Many labor exchange centers were established in China to retrain and redeploy displaced state sector workers in the private sector. Some of the proceeds from liquidating the assets of bankrupt state enterprises were used to redeploy unemployed workers. Such measures help to ease the rise in social tensions and inequality during transition periods.⁹

Conclusions

For growth to have an impact on poverty reduction, the assets of the poor must be augmented. This can be achieved either by investing in new assets, specifically, human capital, or by redistributing existing assets. This chapter has focused on investing in new assets by examining the quality and distribution of education and the causes and consequences of, and remedies for, large dispersions in educational attainment. When the quality of schooling is low and educational inequality is high, the poor are hurt most because human capital is often their main asset. Inadequate investment in the human capital of the poor exacerbates and perpetuates poverty and income inequality.

Improving the allocation of public expenditure in education is a key. Despite making efforts to this end, many countries have not been able to concentrate public investment on primary and secondary education. Inappropriate allocations of public expenditures have led to low average attainment per dollar spent on students, which affects mostly the poor. Governments need to reallocate public expenditure toward basic education, while at the same time enabling the private sector and public-private partnerships to increase efforts in higher education. Countries have compelling reasons to strengthen education at all levels. It can augment the poverty-reducing aspect of growth, in addition to improving welfare directly. It enables countries to participate effectively in the global economy.

Investing in education alone will not guarantee successful development or poverty reduction. Thus, this chapter went beyond education to issues related to the use of human capital, namely, the distribution of land and other productive assets and economywide policies. To reduce poverty, countries need a multidimensional strategy centered on people. There is the need to ensure access to education and health services and distribute them well; to facilitate fuller use of the human capital of the poor; and to empower the poor with land, equity capital, training, and job opportunities made possible by opening to international trade, investment, and ideas.

Notes

1. On the importance of asset distribution, see, for example, Ahluwalia (1976); Birdsall and Londoño (1997); Chenery and others (1974); Deininger and Squire (1998); Kanbur (2000); Knight and Sabot (1983); Lam and Levison (1991); Lanjouw and Stern (1989, 1998); Li, Squire, and Zou (1998); Ram (1990); Ravallion and Datt (1999); and Sen (1980, 1988). See annex table A3.5 for additional evidence.
2. Some arguments here apply to health, but due to space limits, this chapter focuses only on education.
3. Certain assumptions apply here. This conclusion holds if there is a competitive market and two factors of production: physical and human capital. It is also true if human capital is decomposed to skilled and unskilled labor.
4. These measures, however, are sensitive to national promotion policies. Scores on internationally comparable tests represent an improvement over traditional indicators, but they are available for only a few developing countries, and they are not comparable over time. Due to these problems they are not used here.
5. The same is true for industrial countries. A study estimated the cost of different kinds of national class size reduction policies in the United States and found

the operational costs could be as large as US\$2 billion to US\$7 billion dollars a year (Brewer and others 1999).

6. There was heated debate over the "equity of what?" Sen (1980) sees individuals' levels of functionings, such as literacy and nutrition, as attributes to be equalized. Others see the opportunities people face as the attribute to be equalized (Arneson 1989; Cohen 1989; Roemer 1993). Yet others consider the amount of resources as the attribute to be equalized (Dworkin 1981).
7. Many studies have compared income, land, and wealth Gini coefficients (for example, Leipziger and others 1992 for Korea). However, no study has compared education Gini coefficients with those of income and land. Income Gini coefficients are available only for selected years (Deininger and Squire 1996):

	1970	1977	1983	1990	1992		1970	1976	1980	1985	1988
India	0.30	0.32	0.31	0.30	0.32	Korea	0.33	0.39	0.39	0.35	0.34

8. The cross-country, project-level data set included variables on education, per capita income, openness, government expenditure, and project performance. The project data covered 3,590 lending projects in 109 countries evaluated by the Operations Evaluation Department for 1974-94, with a rating of overall performance (satisfactory/not) and economic rates of return.
9. For more discussion on labor market and social protection issues, see Basu, Genicot, and Stiglitz 1999; Kanbur (2000); World Bank (1994) on old age crisis; and World Bank (2000i).