
PART II

Opportunity



CHAPTER 3

Growth, Inequality, and Poverty

As countries become richer, on average the incidence of income poverty falls. Other indicators of well-being, such as average levels of education and health, tend to improve as well. For these reasons, economic growth is a powerful force for poverty reduction. This observation is not the end of the story, for it raises the questions of what causes economic growth and why countries with similar rates of economic growth can have very different rates of poverty reduction.

Until the mid-18th century improvements in living standards worldwide were barely perceptible. Most societies were resigned to poverty as an inescapable fact of life.¹ As late as 1820 per capita incomes were quite similar around the world—and very low, ranging from around \$500 in China and South Asia to \$1,000–1,500 in the richest countries of Europe.² Roughly three-quarters of the world's people lived on less than \$1 a day.³

The onset of modern economic development opened the possibility that growth could significantly improve the living standards of poor people—and everyone else. Over the next two centuries per capita incomes in the richest countries of Europe increased

more than tenfold in real terms, in China more than fourfold, and in South Asia threefold. The consequences for poverty have been dramatic. In the rich countries of Europe the fraction of the population living on less than \$1 a day has fallen to nil. In China, where growth was slower, less than 20 percent of the population now lives on less than \$1 a day. In South Asia, where growth was slower still, around 40 percent of the population does. Today roughly a fifth of the world's people fall below this austere income threshold.

But differences in rates of economic growth, and in the rates at which that growth translates into poverty reduction, are not the consequence of simple choices. Countries do not choose to have slow growth or to undergo painful crises. Nor do they simply choose how equitable growth will be. Instead, the patterns of growth, the changes in the distribution of income and opportunities, and the rates of poverty reduction reflect a complex set of interactions among the policies, institutions, history, and geography of countries. Understanding the forces underlying countries' disparate growth experiences, and the mechanisms through which this growth has reached poor

people, is essential for formulating poverty reduction strategies.

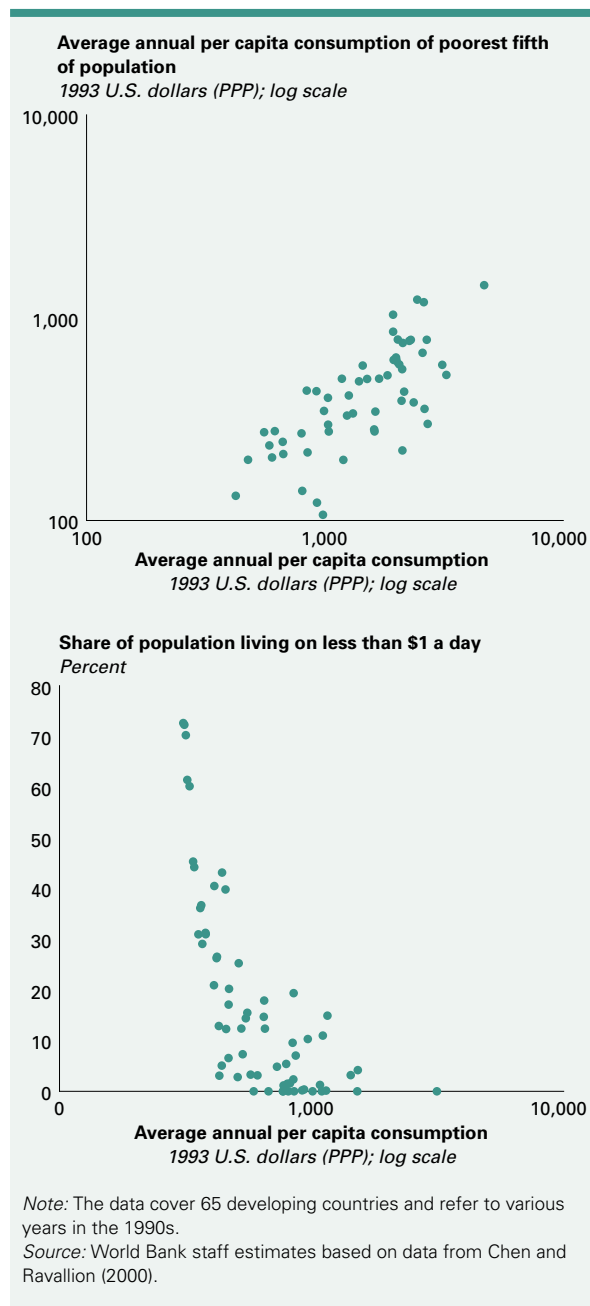
This chapter takes up these issues in turn. It first documents the strong links between economic growth and the income and nonincome dimensions of poverty. It next turns to the policies and institutions that underpin growth and provide the basis for poverty reduction. It recognizes that there are substantial deviations from these general relationships reflecting the wide diversity of country experience—and that these deviations reflect a further set of interrelationships between distributional outcomes, policies, and institutions. It therefore discusses how cross-country differences in the poverty-growth nexus are a consequence of initial inequalities in the distribution of income and opportunities—and of changes in the distribution of income that occur with growth. These inequalities themselves reflect an array of factors, which in turn have consequences for economic growth. Last, the chapter explores the interactions between growth and two nonincome dimensions of poverty—health and education.

Economic growth and poverty reduction

Today close to a fifth of the people in the world survive on less than \$1 a day. The incidence of this deprivation varies greatly across countries. Not surprising, the richer the country, the higher the average consumption of the poorest fifth of its population—and the smaller on average the fraction living on less than \$1 a day (figure 3.1). There are also significant variations around this relationship. Countries with the same average consumption have quite different proportions of the population living on less than \$1 a day, reflecting substantial differences in inequality across countries.

Education and health indicators are also better on average for richer countries. In rich countries fewer than 1 child in 100 does not reach its fifth birthday, while in the poorest countries as many as a fifth of children do not (figure 3.2). Similarly, in the poorest countries as many as half of children under five are malnourished—in rich countries fewer than 5 percent. Again, however, there can be striking deviations from the average. For example, the United States is vastly richer than China and India, but the life expectancy of African Americans is about the same as that in China and in some states in India.⁴

Figure 3.1
In general, the wealthier a country, the lower the incidence of poverty

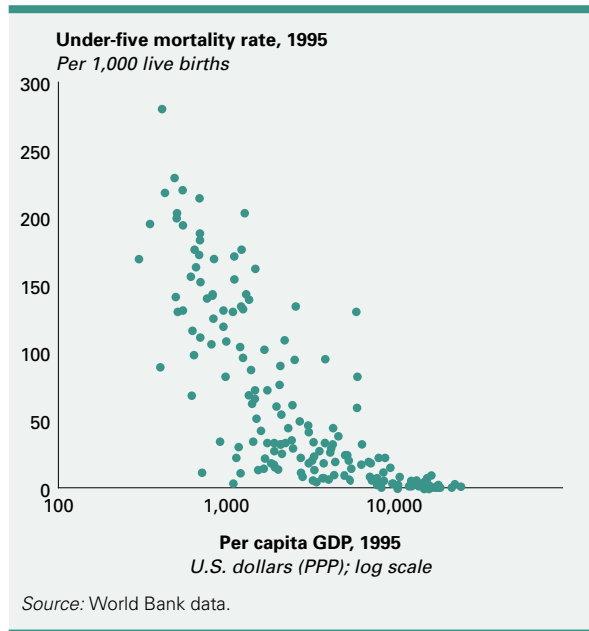


[Poverty is] . . . low salaries and lack of jobs. And it's also not having medicine, food, and clothes.

—From a discussion group, Brazil

Still, the stark differences in poverty outcomes between rich and poor countries point to the central role of eco-

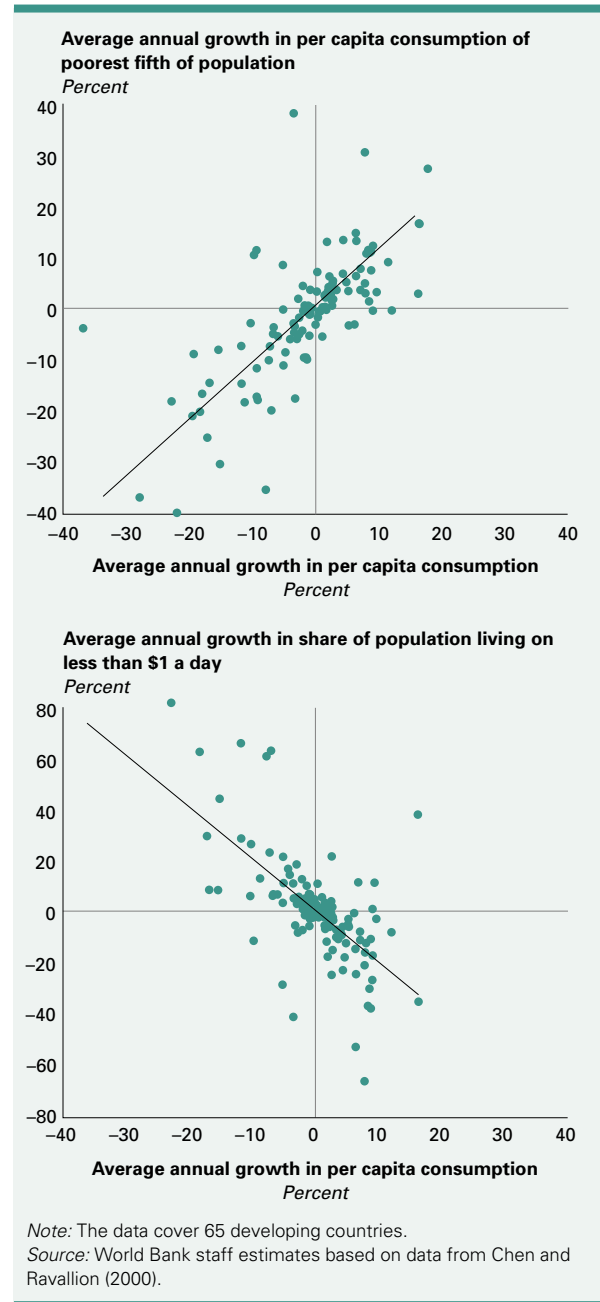
Figure 3.2
Health indicators improve as incomes rise



economic development in poverty reduction. These differences generally reflect cross-country differences in economic growth over the very long run. But the benefits of growth in reducing income poverty can also be seen over shorter periods. Chapter 1 discusses the highly variable evolution of income poverty across countries in the past two decades. Differences in economic growth across countries account for much of this variation: as in the very long run, growth in the 1980s and 1990s was a powerful force for reducing income poverty. On average, growth in the consumption of the poorest fifth of the population tracked economic growth one-for-one over this period (figure 3.3). In the vast majority of cases growth led to rising consumption in the poorest fifth of the population, while economic decline led to falling consumption.

The pattern is similar for the share of people living on less than \$1 a day. On average, every additional percentage point of growth in average household consumption reduces that share by about 2 percent. Although the deviations from this average relationship show that in some countries growth is associated with much more poverty reduction than in others, the relationship highlights the importance of economic growth for improving the incomes of poor people and for moving people out of poverty. Conversely, low or negative growth re-

Figure 3.3
Poverty trends tracked growth trends in the 1980s and 1990s



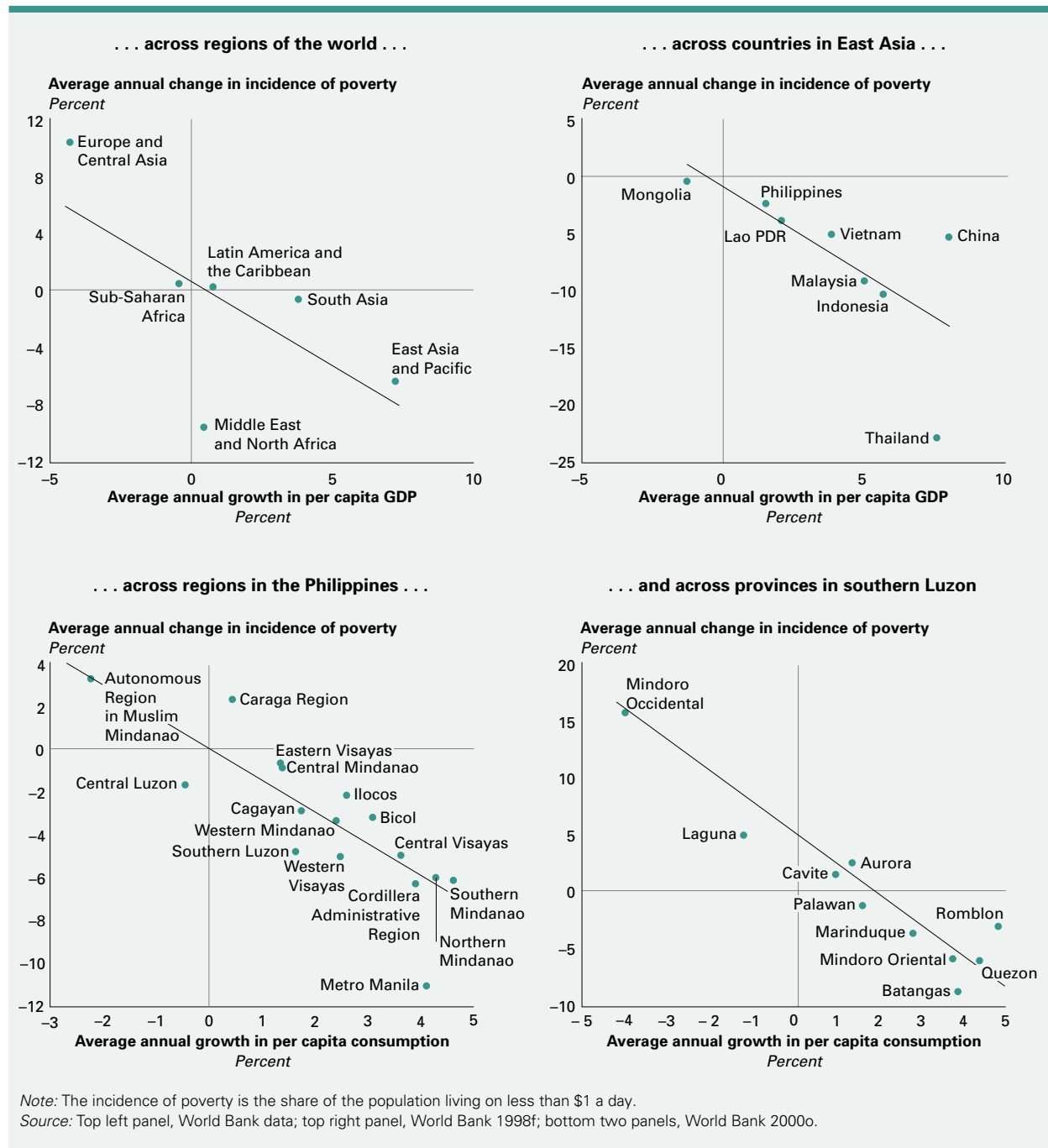
sulting from the collapse of the state, natural disaster, war, or economic crisis can have a devastating impact on poor people.

As chapter 1 shows, national poverty figures hide much variation in outcomes within countries. But just as cross-country differences in economic growth do much to ex-

plain cross-country differences in poverty outcomes, regional and subregional growth does much to explain subnational poverty outcomes. World regions, countries, and provinces within countries have grown at very different rates (figure 3.4). Where growth has occurred, it has been

an important source of poverty reduction, and where it has not, poverty has often stagnated. Understanding why countries and regions have had such disparate growth experiences, and how this growth reaches poor people, is essential for formulating poverty reduction strategies.

Figure 3.4
Economic growth was a force for poverty reduction in the 1980s and 1990s . . .



What drives economic growth?

Understanding the policies and institutions that lead to sustained and sustainable economic growth is a first step in developing strategies for improving the lot of poor people. Wide divergences in growth reflect the outcome of interactions among countries' initial conditions, their institutions, their policy choices, the external shocks they receive, and no small measure of good luck.

There is evidence that growth depends on education and life expectancy, particularly at lower incomes.⁵ For example, it has been shown that female literacy and girls' education are good for overall economic growth.⁶ There is also some evidence that rapid population growth is negatively associated with per capita GDP growth and that the changing age structure of the population can also affect growth (box 3.1).⁷

Box 3.1 Population, growth, and poverty

Many studies have documented that as countries become richer, both fertility and mortality decline on average, with reductions in mortality typically preceding reductions in fertility.¹ The interactions between this demographic transition and economic development are complex. They have fueled heated debate at least since 1798, when Thomas Malthus argued that since "food is necessary to the existence of man" and "the passion between the sexes is necessary and will remain nearly in its present state" (1985, p. 70), population growth would inevitably lead to an imbalance between people and available resources.

Malthus's grim prediction on the effects of population growth on economic development failed to materialize—since the turn of the 19th century the world's population has increased more than fivefold, and thanks to improvements in technology of all kinds, per capita incomes have increased by even greater multiples. The links between demographic change and development are more subtle than this. Two issues are noteworthy: the effects of changes in the age structure of the population induced by this demographic transition, and the links between investments in health and education, growth, and demographic outcomes.

First, in many countries sharp declines in fertility have been followed by sharp increases in the working-age share of the population. In some countries, notably in East Asia, the increase in the number of workers per capita was accompanied by faster growth in GDP per capita.² These countries' success in tapping

Some economic policies—such as openness to international trade, sound monetary and fiscal policies (reflected in moderate budget deficits and the absence of high inflation), a well-developed financial system, and a moderately sized government—are also strongly conducive to economic growth.⁸ Aid can boost growth if such policies are in place, but not if they are absent.⁹ Both domestic and external shocks matter as well. Not surprising, wars, civil unrest, and natural disasters all lower growth rates (box 3.2). Less dramatically, so do macroeconomic volatility, adverse terms of trade shocks, and slower growth among trading partners.¹⁰ Poorly sequenced and badly implemented reforms can lead to sudden reversals in capital flows or other macroeconomic disruptions, also slowing growth (chapter 4). These collapses in growth can be particularly devastating for poor people, who have weaker support mechanisms and generally lead a more precarious life than the better-off (chapter 9).

the potential of a growing workforce was due to a variety of factors, including strong educational attainment and a supportive policy and institutional environment. In other regions of the world, notably Latin America, a similar change in the composition of the population occurred without a comparable growth benefit. This failure is disappointing since the demographic "bonus" of a larger workforce is temporary and is followed by a period of higher old age dependency rates that place greater demands on the social security institutions that provide support for the elderly.

Second, there is evidence that better education is associated with higher contraceptive use and lower fertility.³ This evidence may reflect a variety of mechanisms. More education expands economic opportunities for women and so can raise the opportunity cost of having more children (Becker 1960). Infant mortality is often lower in families in which women are better educated, and so fewer births are required to achieve a desired number of children. And better education can improve the effectiveness of contraceptive use. Investments in improving poor people's access to education and health can therefore have a double impact. These investments have been shown to improve growth and reduce poverty directly. To the extent that they are associated with lower fertility and population growth, they can also contribute to a virtuous circle of improved maternal health and better investment in children's health and education, which reinforce these gains.

1. See Livi-Bacci (1997) for a historical survey and Birdsall (forthcoming) for a modern review of the literature on demography and economics.

2. For example, Young (1995) provides a careful assessment of the contribution of a growing labor force and greater participation rates to the rapid growth in per capita GDP observed in four Asian economies.

3. Schultz (1994) provides cross-country evidence on the links between female education and fertility. See Feyisetan and Ainsworth (1996) for micro-economic evidence on education and contraceptive use and Ainsworth, Beegle, and Nyamete (1996) on education and fertility. Pritchett and Summers (1994) provide a more cautious assessment of the magnitude of the effect of contraceptive availability on fertility.

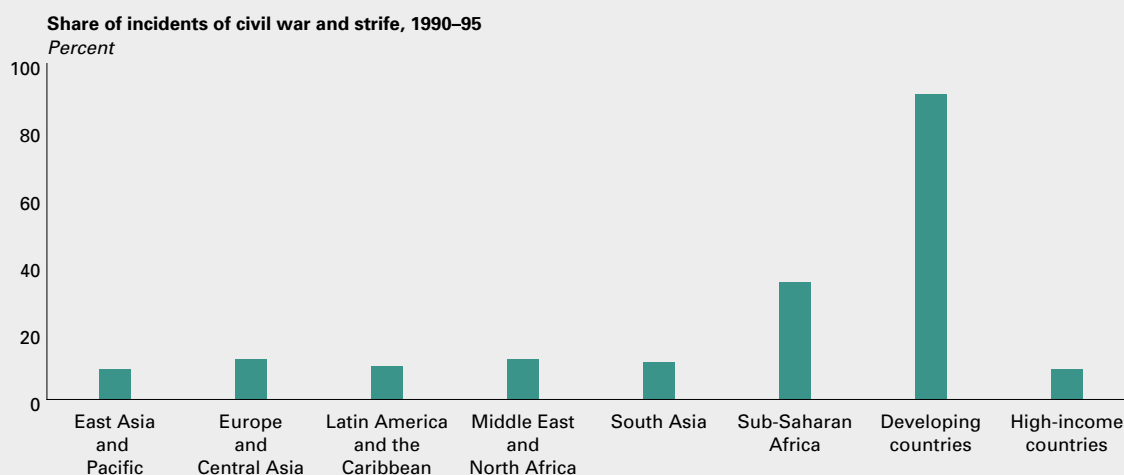
Box 3.2 How war devastates poor people

Wars are devastating wherever they occur. Since they occur disproportionately in poor countries, the devastation falls disproportionately on the world's poor people (see figure). More wars are now civil. During 1987–97 more than 85 percent of conflicts were fought within national borders (14 were in Africa, 14 in Asia, 1 in Europe). Tragically, 90 percent of war deaths are not military (Pottebaum 1999). In Cambodia 1.7 million people died in 20 years of fighting and political mass murder—among them, most of the country's doctors, lawyers, and teachers. Civilian victims are also singled out because of their ethnic identity: as many as 800,000 Tutsis and moderate Hutus were killed by extremist Hutus in Rwanda in 1994.

Nor are children exempt, for they are often recruited to fight. Children lucky enough to survive a conflict bear deep psychological scars. They also pay a heavy price for their abandoned schooling in permanently diminished economic opportunities.

Wars cripple economies by destroying physical, human, and social capital—reducing investment, diverting public spending from productive activities, and driving highly skilled workers to emigrate. In civil war a country's per capita output falls an average of more than 2 percent a year relative to what it would have been without conflict. In more severe and protracted wars, the economic and human costs are even greater (Collier 1999b).

Conflict is overwhelmingly concentrated in poor countries



Source: USAID, OFDA 1999.

Institutional factors are also important for growth. For example, there is evidence that strong rule of law and the absence of corruption contribute to growth—by providing a fair, rule-based environment in which firms and households can invest and grow.¹¹ Strong institutions can also have powerful indirect benefits. For example, adjusting to adverse shocks often requires painful but necessary changes in domestic economic policies. In countries where conflicts between competing interests are pronounced, and the institutions to resolve these conflicts are weak, recovery from shocks is often slower than it is where these institutions are strong.¹²

Similarly, there is growing evidence that ethnic fragmentation has adverse effects on growth. Ethnically fragmented countries and regions within countries tend to

provide fewer—and poorer quality—public goods, especially education. Such areas are also more prone to violent ethnic conflict. Institutions that guarantee minority rights and provide opportunities to resolve conflicts have been shown to offset the side effects of polarized societies (chapter 7).¹³

Other exogenous factors, such as geography and initial incomes, matter as well. There is some evidence that geographic characteristics affect growth—for example, a remote or landlocked location acts as a drag on growth.¹⁴ On average, initially poor countries have grown more slowly than rich countries, so that the gap between rich and poor countries has widened (box 3.3). However, there is strong evidence that, controlling for some of the factors mentioned above, growth is faster in

Box 3.3 Divergence and worldwide income inequality

Given the importance of growth for poverty reduction, the failure of growth to take root in some of the poorest countries with the highest incidence of poverty is particularly disappointing. One symptom of this failure is the widening gap in average incomes between the richest and poorest countries. In 1960 per capita GDP in the richest 20 countries was 18 times that in the poorest 20 countries. By 1995 this gap had widened to 37 times, a phenomenon often referred to as *divergence* (see left-hand panel of figure).

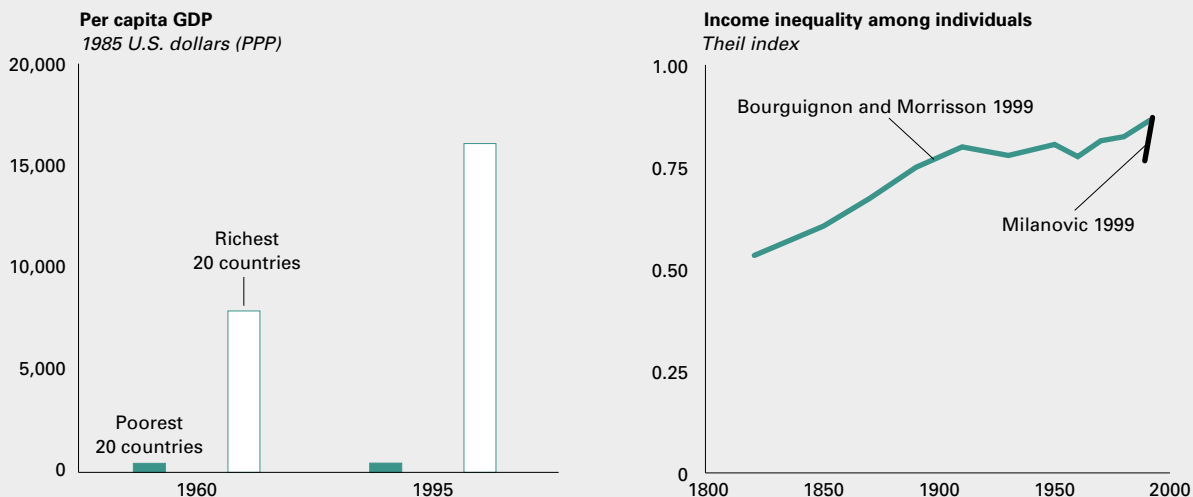
Such figures indicate that income inequality between countries has increased sharply over the past 40 years. What has happened to worldwide inequality between individuals? Trends in worldwide inequality between individuals reflect trends in both inequality between countries and inequality between individuals within countries. The contribution of inequality between countries depends on differences in country growth performance and country size: rapid growth in a few large and initially poor countries can offset the disequalizing effect of slow growth in other poor countries. In China, for example, rapid growth from a very low base has helped a fifth of the world's population halve the gap in average per capita incomes with the world as a whole, significantly reducing worldwide inequality between individuals. In contrast, the 20 poorest countries in the world in 1960 accounted for only about 5 percent of the world's population, and so their failure to grow, while

disappointing, contributed less to worldwide inequality between individuals.

Income inequality within countries shows less pronounced trends: in some countries inequality has increased, while in others it has fallen. Recent studies have found that across countries increases and decreases in inequality are roughly equally likely (Deininger and Squire 1996b). Again, however, country size matters: changes in inequality in populous countries such as China, India, or Indonesia will contribute more to changes in worldwide inequality between individuals than will changes occurring in small countries.

Trends in worldwide income inequality between individuals reflect both these factors, with the between-country component typically more important than the within-country component. In light of the difficulties with measuring income described in chapter 1, it is not surprising that estimates of worldwide inequality between individuals are subject to substantial margins of error. But available estimates indicate that there have been some increases in worldwide inequality between individuals in past decades (see right-hand panel of figure). While the size of these increases depends on the methodology used and the period considered, the evidence suggests that the increases in worldwide inequality in recent years are small relative to the much larger increases that occurred during the 19th century.

Widening gaps between rich and poor countries account for much of the increase in worldwide income inequality across individuals over the past 40 years



Note: The left panel refers to population-weighted averages of per capita GDP in the indicated groups, based on a sample of 123 countries with complete data on per capita GDP over the period 1960–95. China is excluded from the poorest 20 in 1960. The Theil index is a measure of income inequality; higher values indicate higher inequality.

Source: Summers and Heston 1991; World Bank data; Bourguignon and Morrisson 1999; Milanovic 1999.

countries that are initially poor. This relationship may not be linear, with higher growth kicking in only after countries reach a threshold level of income. This raises the possibility of poverty traps at very low levels of development.¹⁵ Finally, initial inequality can influence later growth, with implications for how growth translates into poverty reduction. This important issue is discussed in the following section.

What determines the sustainability of growth? In addition to the policy, institutional, and geographic factors mentioned above, a further important consideration is whether or not growth is accompanied by environmental degradation, which can in turn undermine growth.¹⁶ Environmental degradation can exact a heavy toll on the economy through poor health and reduced agricultural productivity. For example, heavy reliance on coal without effective controls on particulate, sulfur, and other emissions can cause high rates of lung disease, and sulfur emissions lead to acid rain, which reduces agricultural productivity.¹⁷ In the long run especially, attending to the quality of the environment and the efficiency of resource use is likely to boost investment, accumulation, and growth. Rapid growth and environmental protection can go together—because new additions to industrial capacity can take advantage of cleaner technologies and accelerate the replacement of high-pollution technologies.¹⁸

Water is life, and because we have no water, life is miserable.

—From a discussion group, Kenya

Why are similar rates of growth associated with different rates of poverty reduction?

The general relationship between economic growth and poverty reduction is clear. But there are also significant differences across countries and over time in how much poverty reduction occurs at a given rate of economic growth. The bottom panel of figure 3.3 shows that there can be large variation in poverty reduction for the same growth rate in per capita consumption (though extreme values should be considered outliers). What explains these large differences? For a given rate of growth, the extent of poverty reduction depends on how the distribution of income changes with growth and on initial inequalities in income, assets, and access to opportunities that allow poor people to share in growth.

Changes in the distribution of income

How growth affects poverty depends on how the additional income generated by growth is distributed within a country. If economic growth is accompanied by an increase in the share of income earned by the poorest, incomes of poor people will rise faster than average incomes. Similarly, if economic growth is accompanied by a decline in this share, growth in the incomes of poor people will lag behind growth in average incomes.

The same is true for poverty rates. For a given rate of economic growth, poverty will fall faster in countries where the distribution of income becomes more equal than in countries where it becomes less equal. For example, in Uganda growth with rising equality delivered strong poverty reduction, while in Bangladesh rising inequality tempered the poverty reduction from growth (box 3.4). Another example is Morocco, where the number of poor people increased by more than 50 percent between 1990 and 1998, mainly because of declining real per capita private consumption (–1.4 percent a year). In urban areas the increase in poverty was dampened by a decline in inequality, while in rural areas rising inequality reinforced the increase in poverty.¹⁹

Does growth itself lead to systematic increases or decreases in income inequality? Do the policies and institutions that contribute to higher growth increase or decrease inequality? Does the regional or sectoral composition of growth affect changes in income inequality? To answer these questions the chapter first looks at the available cross-country evidence—and then turns to more detailed country-specific evidence, which highlights the fact that changes in income inequality are often driven by a complex array of opposing forces.

Many studies show that on average there is no systematic relationship across countries between growth and summary statistics of income inequality such as the Gini coefficient (figure 3.5).²⁰ While this average relationship is of interest, so are the substantial deviations around it.

The differences in inequality at a given rate of growth could reflect the fact that the combination of policies and institutions that led to this growth differed across countries—and that these differences in policies matter for income distribution. But at the aggregate cross-country level, there is not much evidence that this is the case. A recent study of growth and poverty reduction in a sample of 80 industrial and developing countries found that macroeconomic policies such as a stable monetary

Box 3.4 Inequality trends and poverty reduction

In Uganda growth with rising equality delivered strong poverty reduction . . .

After decades of war and economic collapse, growth recovered in Uganda in the 1990s, averaging more than 5 percent a year. In just six years (1992–98) the share of Ugandans in poverty fell from 56 percent to 44 percent. The benefits of growth were shared by all income groups, by rural and urban households, and by nearly all economic sectors. Real per capita consumption rose for all deciles of the population, implying a reduction in poverty regardless of the poverty line.

Modest reductions in income inequality made growth especially effective in reducing poverty, with the Gini coefficient falling from 0.36 to 0.34 during the five years. Living standards improved more among poorer households. Consumption (per adult equivalent) rose 27 percent for the poorest decile, compared with 15 percent for households in the richest decile. Among cash crop producers—especially coffee farmers, initially as poor as the average Ugandan—poverty fell more than twice as fast as for the country as a whole.

. . . while in Bangladesh rising inequality tempered the poverty reduction from growth

In Bangladesh per capita GDP grew at about 2 percent a year during the 1990s, and poverty declined quite slowly. Between 1983 and 1996 the share of people in extreme poverty fell from 40.9 percent to 35.6 percent—and the share in moderate poverty from 58.5 percent to 53.1 percent. Rural poverty in particular remains very high.

Why the slow decline? Part of the answer lies in rising inequality, in both urban and rural sectors, especially between 1992 and 1996, when the Gini coefficient rose from 0.26 to 0.31. Depending on the poverty measure used, a fifth to a third of the potential poverty reduction from growth may have been lost because of higher inequality. If inequality had not increased, the poverty rate would have been about 7–10 percentage points lower in 1995–96 than it actually was.

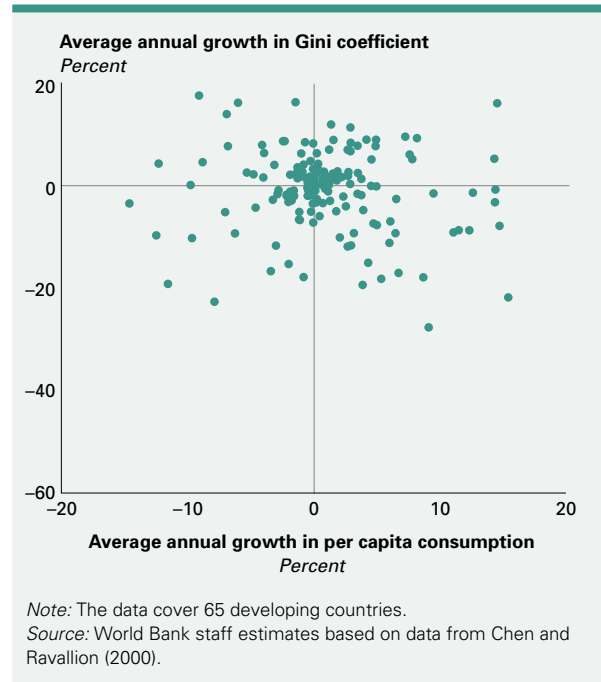
The higher inequality in Bangladesh does not imply that growth should not be pursued. To the contrary, faster growth is needed to reduce poverty faster, because growth's net effect on poverty reduction is positive. Also required are efforts to limit rising inequality and to ensure that growth reaches rural areas, where many of the country's poor people live.

Source: Appleton and others 1999; Wodon 1997, 1999, 2000c.

policy, openness to international trade, and a moderate-size government raise the incomes of poor people as much as average incomes.²¹ In other words, these policies did not systematically affect income distribution.

Other policies, such as stabilization from high inflation, may even disproportionately favor poor people (chapter 9). And greater financial development fa-

Figure 3.5
Inequality varied widely in the 1980s and 1990s but showed no systematic association with growth



vors growth and may lower income inequality by improving access to credit.²²

When I retired, I had 20,000 rubles in my savings account. . . . But what the government did with it—the government we trusted with our money! They re-indexed savings so that inflation ate it! That money is now not enough for bread and water.

—From a discussion group, Ukraine

Another possible explanation for the lack of association between growth and inequality is that countries with similar overall growth rates could experience very different changes in income distribution because of differences in the regional and sectoral composition of growth. If growth bypasses poor regions and poor people cannot easily migrate to regions where opportunities are expanding, growth can lead to rising inequality. If growth is concentrated in sectors from which poor people are more likely to derive their income, such as agriculture, growth can be associated with declining income inequality.

In China much of the sharp increase in income inequality between the mid-1980s and mid-1990s reflects the much swifter growth in urban areas relative to rural

areas.²³ India's states tell a similar story of the importance of rural growth in poverty reduction (box 3.5). So does Indonesia.²⁴ A study of 38 developing countries found that the variation in inequality reflects the abundance of arable land, the prevalence of smallholder farming, and the productivity of agriculture.²⁵ These findings underscore the importance of removing policy biases against agriculture for generating more equitable growth (chapter 4).

Cross-country evidence can take us only so far in understanding the factors underlying changes in the distribution of income that make growth more or less pro-poor. Careful country-specific analyses paint a more nuanced picture, highlighting a complex set of reinforcing and countervailing forces. These include changes in the distribution of education, changes in the returns to education, labor market choices, and demographic changes (box 3.6). Those changes are the result of:

Box 3.5 What makes growth pro-poor in India?

Consistent with cross-country evidence for developing countries, consumption poverty in India has fallen with the growth in mean household consumption. Moreover, the regional and sectoral composition of growth affects the national rate of poverty reduction, with far stronger responses to rural economic growth than to urban. And within rural areas growth in agriculture and services has been particularly effective in poverty reduction, while industrial growth has not.

In rural India higher agricultural productivity is crucial for pro-poor economic growth. Data spanning 1958–94 show that higher real wages and higher farm yields raised average living standards and did not affect income distribution. The result: less absolute poverty.

The effectiveness of nonfarm growth in reducing poverty has varied widely across states, reflecting systematic differences in initial conditions. In states with low farm productivity, low rural living standards relative to urban areas, and poor basic education, poor people were less able to participate in the growth of the nonfarm sector. The role of initial literacy is notable: more than half the difference between the elasticity of poverty to nonfarm output for Bihar (the state with the lowest elasticity in India) and that for Kerala (the highest) is attributable to Kerala's substantially higher initial literacy rate. Women's literacy is a slightly more significant predictor of growth's contribution to poverty reduction than men's literacy.

For poor people to participate fully in India's economic growth, agriculture, infrastructure, and social spending (especially in lagging rural areas) need to be higher priorities.

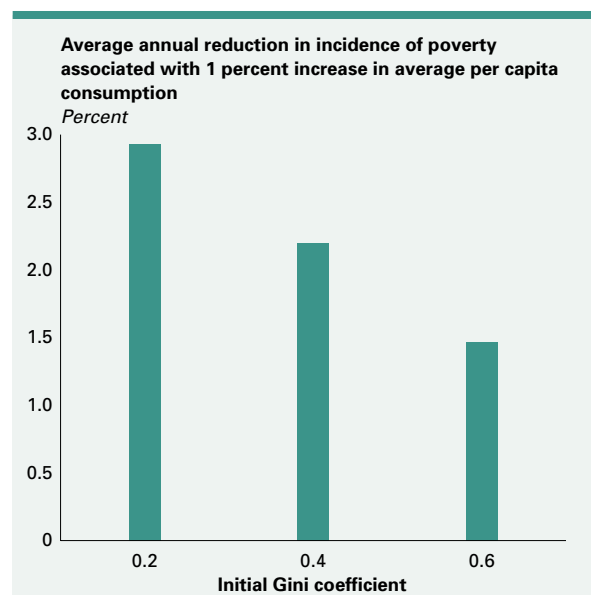
Source: Ravallion and Datt 1996, 1999.

- Market forces, such as changes in the demand for labor.
- Policies, such as public investment in education.
- Social forces, such as higher participation of women in the labor force or changes in practices discriminating against women and ethnic minorities.
- Institutional forces, such as changes in legal restrictions on the ownership of property by women or ethnic groups.

Not every increase in income inequality should be seen as a negative outcome. As economies develop, income inequality can rise because the labor force shifts from agriculture to more productive activities. For example, if wages are lower in agriculture than in industry and services and the labor force shifts toward those two sectors, many summary statistics, especially those sensitive to changes at the bottom end of the income distribution, will show increases in inequality despite an overall decline in poverty. These trends should not be seen as negative if:

- The incomes at the bottom rise or at least do not fall.
- The development process expands opportunities for all.

Figure 3.6
Initial inequalities influence the pace of poverty reduction



Note: The data cover 65 developing countries in the 1980s and 1990s. The incidence of poverty is the share of the population living on less than \$1 a day.

Source: World Bank staff estimates based on the methodology of Ravallion (1997a) and data from Chen and Ravallion (2000).

Box 3.6 Complex patterns of distributional change in three economies

Observed changes in the distribution of income reflect a complex array of factors—among them, changes in the distribution of assets, changes in the returns to these assets, labor market choices, and demographics. Brazil, Mexico, and Taiwan, China, show how these forces can reinforce and offset one another to result in inequality that is respectively lowered, increased, and unchanged.

Brazil—inequality lowered

Income inequality declined in Brazil between 1976 and 1996, with the Gini coefficient falling from 0.62 to 0.59. During the same period the returns to education became more unequal: both wage earners and self-employed workers with more education saw larger increases in earnings than their less-educated counterparts, even after controlling for age and gender. There were no changes in the returns to experience and only small declines in the pay gap between men and women, so overall earnings inequality increased. This disequalizing effect was more than offset by three factors:

- The distribution of education became more equal.
- Average educational attainment rose from 3.8 to 5.9 years of schooling, and higher levels of schooling (particularly for women) contributed to a noticeable reduction in family size, with the average household falling from 4.3 to 3.5 members. Since family size fell more for poorer households, inequality fell.
- Inequality in the returns to characteristics other than education seems to have fallen, suggesting a reduction in labor market segmentation during 1976–96 and a possible decline in regional inequalities.

Mexico—inequality increased

Mexico's Gini coefficient rose sharply between 1984 and 1994, from 0.49 to 0.55. As in the previous two examples, changes in the returns to education were a strongly disequalizing force. But

changes in the distribution of education did not offset this. While educational attainment rose faster for the less educated, the returns to higher education were sufficiently high that the additional earnings due to greater education disproportionately favored the more educated. Superimposed on this were important regional effects, with widening rural-urban real wage differences contributing substantially to inequality, despite some convergence of urban and rural returns to education and experience.

Taiwan, China—inequality unchanged

Noted for its low and stable level of inequality, Taiwan, China, has had a Gini coefficient of about 0.30 for the past 30 years. As in Brazil, this outcome reflects a variety of opposing forces. Despite a rapid increase in their supply, more-educated workers saw larger increases in earnings than less-educated workers. This was more than offset by greater equality in the distribution of education and greater labor market participation by women. The pattern of taxes and transfers was also equalizing, with the effect that the distribution of individual income became more equal. Interestingly, however, income inequality at the household level increased, as many of the new female entrants to the labor force came from initially better-off households.

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These examples show that simple trends in summary measures of income inequality can disguise major structural forces. Some of them, such as changes in the distribution of education, can be influenced by policy—though this takes time. Others, such as changes in the returns to education, reflect primarily market forces and are less amenable to direct policy interventions. And as Taiwan, China, shows, tax and transfer policies can counter increases in primary income inequality.

Source: For Brazil, Ferreira and Paes de Barros (1999b); for Mexico, Legovini, Bouillon, and Lustig (1999); and for Taiwan, China, Bourguignon, Fournier, and Gurgand (1998).

- The observed trends are not the result of dysfunctional forces such as discrimination.
- The number of poor people falls.

Initial inequality and poverty reduction

Even when the distribution of income itself does not change with growth, countries with similar rates of growth can have very different poverty outcomes, depending on their initial inequality. Other things being the same, growth leads to less poverty reduction in unequal societies than in egalitarian ones. If poor people get a small share of existing income and if inequality is unchanged, they will also get a small share of the new income generated by growth, muting the effects of growth on poverty. Evidence confirms

this: when initial inequality is low, growth reduces poverty nearly twice as much as when inequality is high (figure 3.6).

Initial inequality in income is not the whole story—for inequality in other dimensions matters too. The sensitivity of poverty to growth depends a great deal on initial inequality in poor people's access to opportunities to share in this growth. If disparities in educational attainment mirror disparities in income, poor people may not have the skills to find employment in dynamic and growing sectors of the economy. This effect is compounded by gender inequality in access to education (chapter 7). In addition, if fixed costs or overt policy barriers hinder movement from remote, rural, and economically depressed regions to more vibrant urban centers,

poor people will be less likely to take advantage of opportunities to migrate (box 3.7).

They have always excluded us Mayas, they have discriminated against us. They cut down the tree, but forgot to pull down the roots. That tree is now sprouting.

—From a discussion group, Guatemala

If social inequities—such as caste systems or discrimination against indigenous peoples—confine members of disadvantaged groups to employment in stagnant sectors, poor people will benefit less from growth (chapter 7). Or if ethnic discrimination in the marketplace leads to different returns to the same level of education, growth will be less effective in reducing poverty for the group discriminated against. A study in Latin America found that in several countries differences in earnings between indigenous and nonindigenous people cannot be explained by differences in skills or experience, suggesting that discrimination in the labor market may be to blame.²⁶ These results bring to the fore the importance of eliminating social barriers for women, ethnic minorities, and socially disadvantaged groups in making growth broad based.

Initial inequality and growth

High initial inequality reduces the poverty impact of a given rate of economic growth. It can also undermine poverty reduction by lowering overall economic growth. Early thinking on the effects of inequality on growth suggested that greater inequality might be good for growth—for example, by redistributing income to the rich, who save, from the poor, who do not. This view implied a tradeoff—more growth could be bought for the price of more inequality, with ambiguous effects on poor people.

More recent thinking—and empirical evidence—weakens the case for such a tradeoff: lower inequality can increase efficiency and economic growth through a variety of channels. Unequal societies are more prone to difficulties in collective action, possibly reflected in dysfunctional institutions, political instability, a propensity for populist redistributive policies, or greater volatility in policies—all of which can lower growth. And to the extent that inequality in income or assets coexists with imperfect credit markets, poor people may be unable to invest in their human and physical capital, with adverse consequences for long-run growth.

The effects of inequality on growth have been subjected to considerable empirical scrutiny. Evidence on

Box 3.7 Diversification and migration in rural China

For rural agricultural households in China, opportunities for off-farm employment have been an important source of growth in incomes. These opportunities can be equalizing or disequalizing. To the extent that diversification into nonfarm employment reflects a pull factor—higher returns off the farm—diversification can be disequalizing as richer and better-educated workers take advantage of these opportunities. To the extent that diversification reflects a survival mechanism for the poorest, it can be equalizing.

Evidence from four provinces in China suggests that the pull factor has been more important than the survival mechanism, with access to nonfarm employment accounting for a rising share of income inequality in rural areas between 1985 and 1990. Evidence also suggests that even the modest gap (by international standards) between female and male educational attainment exacerbates these trends, with less-educated women less likely to find off-farm employment. In contrast, migration has had equalizing effects on income. Survey data from the four provinces show that private transfers (largely reflecting migrants' remittances) have been an equalizing force.

Source: World Bank 1997b.

the impact of inequality in assets—and gender inequality—is generally clearest. A recent study of sugar cooperatives in India found that those that are most unequal (in land ownership among cooperative members) are the least productive.²⁷ Various studies have also found an adverse effect of land inequality on growth.²⁸ A study in China found that living in a high-inequality area reduced growth rates at the farm household level, controlling for a household's human and physical capital.²⁹ Other studies have found evidence of a link between education and gender inequality and growth.³⁰ In contrast, evidence on the effect of initial income inequality on subsequent growth is more mixed. Some studies have found negative effects.³¹ Others have found positive effects.³² Still others have found different effects over different ranges.³³

These results open the possibility that policies to improve the distribution of income and assets can have a double benefit—by increasing growth and by increasing the share of growth that accrues to poor people. This is not to say that every pro-equity policy will have such desired effects. If the reduction in inequality comes at the expense of the other factors conducive to growth (discussed in the early part of this chapter), the gains from redistribution can vanish. Ex-

Box 3.8 Redistribution can be good for efficiency

Redistribution need not compromise efficiency and growth. In several instances redistributive policies can increase asset accumulation by poor people—while improving efficiency and growth. A few recent studies illustrate the possibilities for win-win outcomes, further strengthening the case for redistribution.

Land reform is a classic example of a redistributive policy. Operation Barga, a tenancy reform in the Indian state of West Bengal in the late 1970s and early 1980s, is one of the few examples of large-scale transfers of property rights not accompanied by major social upheaval. The operation was associated with an 18 percent increase in agricultural output in the state (Banerjee, Gertler, and Ghatak 1998).

Redistribution can also be a source of efficiency gains if transfers to poor people improve their human capital. Public provision of infrastructure targeted to poor people is an important example. Massive primary school construction (61,000 new schools built and staffed in five years) under Indonesia's INPRES (presidential instructions) program, the main mechanism for redistributing the gain from the oil boom in Indonesia, substantially increased education and income. The primary school graduation rate rose 12 percent, and male wages 5 percent (Duflo 2000b).

Universal policies (such as pricing of government services) can have redistributive and efficiency effects as well. Abolishing secondary school fees in Taiwan, China, in 1968 and introducing compulsory education benefited poorer children more than richer children (Spohr 2000). It also substantially increased school attainment (0.4 year for males) and labor force participation, translating into higher earnings (Clark and Hsieh 1999).

Direct income redistribution (through cash transfers) is rare in developing countries. A concern is that cash may not be spent in the most efficiency-enhancing ways. In South Africa at the end of apartheid, the small pension program was dramatically expanded for the black population. In 1993 the pension amounted to twice the median income for blacks in rural areas (Case and Deaton 1998). When the pension was received by the maternal grandmothers of girls, it had large effects on nutrition—halving the gap in height between these girls and those of the same age in the United States (Duflo 2000a). Other studies have shown, however, that the pension, when received by an elderly woman, also led to a reduction in prime-age male labor supply (Bertrand, Miller, and Mullainathan 1999). The results suggest that cash transfers can—but may not—lead to efficiency gains.

propriation of assets on a grand scale can lead to political upheaval and violent conflict, undermining growth. And sometimes attempts to redistribute income can reduce incentives to save, invest, and work. But there are a number of win-win possibilities (box 3.8). Policies should focus on building up the human capital and physical assets of poor people by judiciously using the redistributive power of government spending and, for example, market-based and other forms of land reforms (chapter 5; box 5.12).

Economic growth and nonincome poverty

Just as income poverty declines as average incomes increase, so does nonincome poverty, such as in health and education. Just as with income poverty, there are significant deviations around these general relationships: countries and regions with similar per capita incomes can have quite different outcomes in nonincome poverty as well. And just as with income poverty, these deviations reflect a wide array of forces—including initial inequality, the effectiveness of public interventions, and the level of development. Conversely, there is strong evidence that better health and education outcomes contribute to faster economic growth.

Across countries, and across individuals within countries, there are strong correlations between health and education outcomes and incomes. Richer countries and richer individuals within countries have lower rates of mortality and malnutrition.³⁴ Within and between countries both the quantity and the quality of education improve with income—although quality is difficult to measure.³⁵ Disparities in educational attainment also decline with income.

These strong correlations reflect reinforcing causal effects from higher income to better health and education outcomes—and from better health and education to higher income. For individuals, this is not surprising. Ill health and malnutrition reduce productivity and time spent working, effects that vary with the level of education. For example, a study of Brazilian men showed that adult height was strongly associated with wages—and that wages increased faster with height among individuals with some (as opposed to no) education.³⁶ Conversely, individuals with higher incomes can better afford to invest in health and education.³⁷ Many studies document the positive effects of parental education on children's health and education.

Similar patterns hold for countries, with positive effects of higher per capita income on infant mortality.³⁸

Other studies have documented the benefits of lower mortality for faster growth, with most of the growth payoff at low levels of income.³⁹ And we have already seen the evidence that better education outcomes lead to faster growth.

Moreover, there is some evidence that these relationships are not linear, with stronger increases in health associated with growth in poorer countries and regions. Fairly small differences in economic growth rates can thus have large impacts on human development outcomes in such countries. One study estimated that had growth rates in the developing world (excluding China and India) been as high in the 1980s as they were in the 1960s and 1970s, 656,000 deaths could have been averted during the 1980s among children under five.⁴⁰

These reinforcing effects from human development to economic development and back suggest the possibility of vicious and virtuous circles. Poor countries and poor people can be locked in a vicious circle, as low human development diminishes economic opportunities, making it more difficult to invest in health and education. In contrast, well-targeted public interventions in health and education can contribute to a virtuous circle of greater economic opportunities generating resources for further investments (chapter 5).

The considerable variations in country experience around these general relationships again reflect a combination of factors. One is inequality in income.⁴¹ We have seen that the effects of income on health are most pronounced at low levels of income. This implies that the same rate of economic growth can have very different health and education outcomes, depending on the initial distribution of income and on how that distribution changes with growth. In particular, growth accompanied by a reduction in inequality is more likely to lead to better health outcomes.

Research has found evidence that the correlation across countries between average health indicators and average income vanishes after controlling for differences in the incidence of income poverty and in public spending.⁴² The same research has found that cross-country differences in public health spending matter more to the health of the income-poor than to others: the nonpoor are better able to protect their health from lower public spending. These results suggest that growth improves average health attainments through its ability to reduce income poverty and permit more pro-poor social spending.

Figure 3.7
Across countries, the ratio of female to male literacy rises with per capita income



Nonincome inequalities matter as well. Discrimination by gender and ethnicity—in the allocation of public spending for education and health or in the operation of education and health facilities—can lead to differences in education and health achievements. Gender disparities in educational attainment are especially pronounced in poor countries (figure 3.7). In the Indian state of Kerala—which has a long history of equitable gender relations—education and mortality differ little between men and women. But in such states as Uttar Pradesh—where gender discrimination is high—the female literacy rate is less than half the male rate and the female to male ratio in the population is a disturbing 87.9 to 100.⁴³ Cross-country studies have also identified geographic factors, ethnic fragmentation, and especially female educational attainment as important in explaining differences in health outcomes at a given income.⁴⁴ Finally, the quality and quantity of public spending matter as well, though the size of the impact on poor people depends greatly on supportive policies and institutions (chapter 5).

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This chapter has shown the importance of growth for poverty reduction, particularly for income and

human development. It has also shown how low and declining inequality enhances the impact of growth on poverty. Growth can be made more equitable by reducing inequality in access to assets and opportunities. This requires opening market opportunities to poor peo-

ple and building up their assets. It also requires making state institutions work better for poor people, removing social barriers, and supporting poor people's organizations. These issues are taken up in subsequent chapters.