What is the role of equity in the process of development? Our proposed answer to this question, which is discussed at greater length in the World Development Report 2006: Equity and Development (World Bank 2005), draws heavily on the discussions we had at the InWEnt workshop on this topic held in Berlin, Germany, in September 2004. Many of the links between normative and positive perspectives on the distribution of opportunities that are highlighted here were noted during those debates. While our views have continued to evolve over the past year, we owe a great deal to the contributions made by the extraordinary group of Berlin workshop participants, in the early stages of this project. Much of their work is summarized in this volume.

One of the ideas that forcefully emerged from the InWEnt Berlin workshop on equity and development was that two relatively recent developments in thinking about distribution in economics, which have remained largely unrelated so far, ought to be much more closely connected. The first is the acknowledgement that distribution—in particular the distribution of wealth—may affect aggregate outcomes, such as the overall level of output, or its rate of growth. This was, of course, a theme of classical economists, who intuitively understood the importance of distribution in political economy. It has also been recognized more recently, as in Nicholas Kaldor’s view that the poor and the rich have different savings rates. Kaldor hypothesized that increases in income inequality today could lead to greater prosperity tomorrow, by increasing the average savings rate from a given amount of output.

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Opening Address

Inequality of Opportunity and Economic Development

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This paper was commissioned for this volume of presentations from the Berlin workshop hosted by InWEnt (Capacity Building International, Germany) in September 2004, in preparation for the World Development Report 2006: Equity and Development. Francisco Ferreira is at the World Bank and Michael Walton is with the Kennedy School of Government at Harvard University. As the lead authors, they are grateful to their colleagues on the team that prepared WDR 2006, especially Abhijit Banerjee, Peter Lanjouw, Tamar Manuelyan-Atinc, Marta Menendez, Berk Ozler, Giovanna Prennushi, Vijayendra Rao, Jim Robinson, and Michael Woolcock, on whose work this paper draws extensively. They also thank François Bourguignon for many helpful discussions, and Martin Ravallion for comments on an earlier version of this paper.

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But distributional considerations had been peripheral to mainstream neoclassical economics until the early 1990s, when a series of important papers suggested that, if credit and insurance markets were imperfect, the distribution of wealth might matter for the level and composition of aggregate investment, and hence to total output levels (see, for example, Galor and Zeira 1993). Different initial wealth distributions could also affect occupational choice and, through its impact on the relative supply of and demand for labor, determine wage trajectories and aggregate development paths (Banerjee and Newman 1993). A variety of other mechanisms were later proposed, through which unequal wealth distributions could reduce economic efficiency when capital markets are imperfect.⁴ The result was, as Atkinson (1997) put it, to “bring income distribution in from the cold” (p.297).

Separately, it was also suggested that politics could be another channel through which distribution affected outcomes. If governments were not benevolent dictators, but instead represented the (possibly conflicting) interests of different groups in society, then the expected distributional outcomes of different policies (such as tax rates, or public expenditure decisions) would feature in the public decisions about them. The implication was that the policies actually chosen and implemented need not be optimal from a social point of view. They might instead be optimal from the private point of view of the pivotal voter, dominant group, or government agent that makes the decision. To the extent that wealth (or income) affects either the individual’s preference for different policy alternatives, or his power to influence the ultimate government choice (or both), the distribution of wealth may affect the choice of policies, and hence the degree of the resulting inefficiency.

Early models of these policy decisions in a median-voter framework included Alesina and Rodrik (1994) and Persson and Tabellini (1994). Later, the interaction between political economy mechanisms and capital market imperfections allowed for an even richer set of possible outcomes, including one in which unequal wealth leads to inequality in political power and, consequently, to inefficiently low levels of redistribution. Plausible models exist in which such reinforcement between economic and political inequalities might lead to multiple equilibria, with some featuring higher inequality and lower output levels than others.⁵

The second development in thinking about distribution preceded these models of distribution and aggregate outcomes, and took place in the areas of public choice, welfare economics, and theories of social justice—along the frontier between economics and philosophy. It consisted of a move away from ex post realizations—such as incomes and utilities—and toward ex ante potentials as the appropriate metrics for social welfare, or as the appropriate spaces in which to judge the fairness of a given allocation or system. John Rawls (1971) may have been the pioneer in this essentially normative (and highly influential) literature, but he was soon joined by others, such as Ronald Dworkin (1981), Amartya Sen (1985), G. A. Cohen (1989), and John Roemer (1998). As the titles of some of their most important contributions indicate, these authors were concerned with the space in which one should seek to measure, understand, and influence distribution.⁶
Although each author was different in important respects, the thrust of their efforts begins, with the passage of time, to seem similar in essence. Rawls’s “Difference Principle” sought to maximize the availability of primary goods to the least privileged group; Sen wrote about capabilities; Dworkin spoke of equality of resources; and Roemer emphasized equality of opportunities. While a number of worthy treatises have been written on the subtle distinctions between these different normative approaches, a broad common tendency can be identified in this evolution in the theory of social justice over the past three decades or so. And that is the movement away from actual ex post outcomes (such as incomes) and their effects on the well-being of the individual (such as utilities), toward sets of potential outcomes, ex ante (such as capabilities or opportunities).

We argue that these two separate developments in thinking, in two apparently remote areas of economics, should not remain unconnected. The reason is that inequality in opportunity—in addition to being an arguably superior concept on which to anchor the normative evaluation of alternative social states—may well turn out to be precisely the right concept for the empirical testing of theoretical hypotheses about how distribution affects aggregate efficiency and growth.

Most models that propose links between distribution and aggregate levels of output do not actually refer to income distributions. The key concept is usually the distribution of wealth (as in Galor and Zeira 1993, and Banerjee and Newman 1993) and, crucially, the extent to which, under imperfect capital markets, wealth levels may affect the set of feasible investment opportunities (or occupational choices). If education is a lumpy investment process with fixed costs, then those who are “too poor” may not have the opportunity to invest, despite the fact that returns may be high and that the investment would have been undertaken if the credit market were perfect. Entrepreneurship may be a preferable occupation to being a wage laborer but again, if there are imperfect or missing credit markets, then the poor may not have that option, regardless of ability. If wealth and ability both determine the allocation of students to the best schools or colleges, then it will not be the ablest students who attend the best schools (Fernández and Gali 1999).

The models are, therefore, fundamentally about the distribution of opportunities. Inefficiencies arise because the people who seize the opportunities (for education, investment, or entrepreneurship) are neither as many nor the same individuals as would have been the case if markets worked perfectly. Aggregate output is lower because capital ends up being invested at lower marginal returns by some richer investors, rather than at higher returns by credit-constrained ones. Or because less gifted children from rich families have the chance to attend good schools, while clever children from poor families do not—and then go to schools with bad teachers or simply drop out.

Think a little bit more broadly about opportunities, and the same logic begins to apply to the political economy models. That class of ideas revolves around power. The same distribution of wealth can generate very different economic outcomes—some efficient, some not—under different assumptions mapping wealth to political...
power (Ferreira 2001). If one is prepared to think of a person’s—or a group’s—ability to influence political decisions in their community as part of their opportunity set, then the political economy channel between inequality and efficiency (or growth) is also fundamentally about the inequality of opportunities. The empirical implications should be clear: If institutional set-ups (including the relative freedom of the press, the independence of the judicial system, and the transparency of the campaign finance system) differ across societies, the same degree of wealth inequality should lead to different aggregate efficiency outcomes. It all depends on the mapping between economic wealth and political power.

There may, therefore, be a coincidence between the normative concept toward which philosophers have been gravitating as a defining feature of the just society, and the positive concept of which greater equality may imply greater efficiency. It was the possibility of this remarkable convergence that motivated this focus on equity and development in the WDR 2006.

In what follows, we sketch out some of the arguments that the WDR 2006 presents in much greater detail. We first present some evidence that morally irrelevant predetermined circumstances—that is, factors over which individuals have no control, and which society deems to be irrelevant in terms of their deserts—do, in fact, powerfully affect outcomes. Following Roemer (1998), we interpret these effects as prima facie evidence of the existence of inequality in opportunities. We then argue that the existence of these inequalities in opportunity constrains development—through many of the mechanisms suggested in the theoretical literature, and in other ways as well. We conclude by considering some implications of the analysis, both for policy and further research.

Predetermined Circumstances Shape Lives

Opportunity sets begin taking form for individuals while in utero. Who one’s parents are, how rich they are, and what country they live in make a great deal of difference for a person’s opportunities. The opportunity to life itself turns out to depend on such predetermined circumstances as the education and wealth of one’s parents, their access to clean water and sanitation, and the availability of medical treatment. Consider figure 1, which plots group-specific infant mortality rates across countries, from roughly 2000-4. Each vertical line in the figure corresponds to one country, and within each country, the highest point in the line indicates infant mortality (per 1,000 live births) among children whose mothers have no education; the lowest point gives the corresponding figure for those whose mothers have completed secondary schooling or higher. The differences are striking, not only across countries, but perhaps even more so within them. In El Salvador, for instance, babies born to mothers with no schooling are four times as likely to die before their first birthday as their counterparts with better educated mothers.

Parental education is not, unfortunately, the only predetermined circumstance that affects the basic opportunity for life. There is some evidence that gender does
too, at least in parts of Asia, where juvenile sex ratios are unusually high. A juvenile sex ratio simply measures the number of 0 to 4 year-old boys in a population, relative to the number of 0 to 4 year-old girls. Because slightly more boys than girls are born in a typical population at any given time, that ratio oscillates between 1.00 and 1.05 in most countries. Remarkably, in the Indian states of Punjab and Haryana, the 2001 ratio was above 1.20. In China, it reached 1.17 in 2000. While some recent work suggests that the patterns of incidence of hepatitis B—and the fact that it leads to more male births—may account for some of these differences (see Oster 2005), the dominant view is that this unusual discrepancy is casually related to son-preference in these societies, implemented through selective abortion and postnatal care (see Sen 1990 and Klasen and Wink 2003).

Opportunities continue to depend on morally irrelevant, predetermined circumstances even if one survives the first year of life. Access to basic health care, such as immunization services, is strongly correlated with parental wealth (figure 2). Even a child’s cognitive skills seem to develop at different rates depending on family background, for children as young as 3 to 5 years old. Figure 3, drawn from Paxson and Schady (2004), shows the evolution of vocabulary recognition test scores (TVIP, see note at figure 3) for two groups of children from Ecuador: those whose parents have 0 to 5 years of schooling, and those whose parents have 12 or more years of schooling.

Source: World Bank (2005), from Demographic Health Survey (DHS) data. Note: The continuous dark line represents the mean infant mortality rate in each country, while the endpoints of the vertical whiskers indicate the infant mortality rates by different levels of the mothers’ education.
By the time these children enter primary school, at age 6, they have markedly different learning abilities, shaped in large part by differential family backgrounds. These statistical associations do not establish causality, of course. While endogeneity should not be a concern in the associations presented here—because rates for access to immunization or child mortality today cannot cause parental education decades earlier—omitted variables clearly exist. The descriptions presented earlier are essentially bivariate correlations. They do not establish the effect of, say, parental education on vocabulary recognition, or immunization. Parental education is obviously correlated with wealth, housing quality, access to water, distance to and quality of school, and possibly even with genetic endowments of ability that can be transmitted across generations. There is an important literature that seeks to identify each of these individual effects, and it is clear that the simple patterns described here do not do so. What they do is suggest that the collection of these predetermined circumstance variables (parental education, wealth, location, access to services, and so forth), which cannot be controlled by the infant or young child, do powerfully shape the choices—or opportunity set—of the young.

FIGURE 2. Access to Childhood Immunization Services Depends on Parents’ Economic Status

Source: World Bank (2005), from Demographic Health Survey (DHS) data.

Note: The continuous dark line represents the percentage of children without access to a basic immunization package in each country, while the endpoints of the vertical whiskers indicate the percentages for the top and the bottom quintile of the asset ownership distribution.* indicates that the poorest quintile have higher access to childhood immunization services than the wealthiest quintile.
Unequal Opportunities Deter Development in a Number of Ways

The fact that predetermined, morally irrelevant circumstances influence opportunities (and therefore final outcomes) was all that mattered to the second strand of thinking mentioned at the beginning of this paper. The normative consensus—or at least some degree of convergence—that was emerging judged such inequality of opportunities to be ethically undesirable from the point of view of social justice. In this section, we argue that it is exactly this sort of inequality—in the predetermined circumstances that shape opportunities—that leads to aggregate inefficiency, in the spirit of the first strand of thinking summarized earlier. Consider three telling examples.

The first example is from an agricultural setting in Ghana, where land is allocated by custom, and security of property rights is therefore often linked to the local power structure. Goldstein and Udry (2002) find that individuals are less likely to leave their land fallow (an investment in long-run productivity of the land) if they do not hold a position of power within either the hierarchy of the village or the hierarchy of the lineage. The problem is that land is taken away from those who allow it to lie fallow. Because women rarely hold these positions of power, their land is not left fallow often enough and so is much less productive than land controlled by men. This land becomes degraded, because women do not have the social status needed to hold on to it during the fallow periods. The key point for our argument is that the resulting decline in land productivity is a pure loss for society. The fact that other people
do have status and can fallow their land as needed does not, in any way, compensate for the loss of productivity on the land of the powerless.

A separate study by the same authors (also in Ghana) provides a second example of how unequal opportunities that arise from the interaction between poverty and imperfect or missing markets leads directly to inefficiency. In the forest-savannah in Southern Ghana, cocoa cultivation, receding for many years because of the swollen shoot disease, has been replaced by a cassava-maize intercrop. Recently, however, pineapple cultivation for export to Europe has offered a new opportunity for farmers in this area. In this 1997 and 1998 study, more than 200 households cultivating 1,070 plots in four clusters in this area were surveyed every six weeks for about two years. The survey results reveal that the profitability of pineapple production dominates that of the traditional intercrop (figure 4). Despite the fact that the average returns associated with switching from the traditional maize and cassava intercrops to pineapple is estimated to be in excess of 1,200 percent, only 190 out of 1,070 plots were used for pineapple. When the authors asked farmers why they were not farming pineapple, the virtually unanimous response was: “I don’t have the money.” While it is true that some heterogeneity in ability between those who have switched to pineapple and those who have not cannot be entirely ruled out, the authors conclude that the fixed costs involved in switching crops, along with imperfections in credit markets, prevent a large number of farmers from making a very profitable investment. Output and income levels in these areas are correspondingly below potential.

A final example comes from the impact of belonging to a low caste on individual performance. To examine the effect of stereotypes on the ability of individuals to

**FIGURE 4. Average Returns in Ghana for Switching to Pineapples as an Intercrop Can Exceed 1,200 Percent**

![Graph showing the average returns in Ghana for switching to pineapples as an intercrop can exceed 1,200 percent.](image)

*Source: Goldstein and Udry (1999).*

*Note: The cedi is the official currency of Ghana.*
respond to economic incentives, Hoff and Pandey (2004) undertook experiments with low- and high-caste children in rural north India. The caste system in India can be described as a highly stratified social hierarchy in which groups of individuals are invested with different social status and social meaning.

In the first experiment, groups composed of three low-caste ("dalits") and three high-caste junior high school students were asked to solve mazes and were paid based on the number of mazes they solved. In one condition, no personal information about the participants was announced. In a second condition, caste was announced along with each participant's name and village. In a third condition, participants were segregated by caste; and then the name, village, and caste were announced for each participant in the six-person group.

When caste was not announced, there was no caste gap in performance (figure 5). But increasing the salience of caste led to a significant decline in the average performance of the low caste, regardless of whether the payment scheme was piece-rate (that is, participants were paid one rupee per maze solved) or tournament (that is, the participant who solved the most mazes was paid six rupees per maze solved; the other participants received nothing). When caste was announced, the low-caste children solved 25 percent fewer mazes on average in the piece-rate treatments, compared with the performance of subjects when caste was not announced. When caste was announced and groups were composed of six children drawn from only the low caste (a pattern of segregation that for the low caste implicitly evokes their traditional outcast status), the decline in low-caste performance was even greater. While one cannot be sure from these data what the children were thinking, some combination of loss of self-confidence and expectation of prejudicial treatment likely explains the result.

The expectation by the low-caste subjects of prejudicial treatment may be rational given the discrimination in their villages. But the discrimination itself is unlikely to be

**FIGURE 5. Children's Performance in India Differs when Their Caste Is Made Public**


Note: A vertical line in the figure illustrates the statistically significant caste gaps.
fully rational. Cognitive limitations may prevent others from judging stigmatized individuals fairly. The fact that people are bounded in their ability to process information creates broad scope for belief systems—in which some social groups are viewed as innately inferior to others—to influence economic behavior. If such beliefs persist, it will generally be rational for those discriminated against to under-invest (with respect to others) in the accumulation of skills for which the return is likely to be lower for them.

These three examples from Ghana and India illustrate a growing body of microeconomic evidence of the inefficiency of inequality. One case—that of Ghanaian farmers unable to switch from cassava and maize to pineapple—exemplifies the classic interaction between fixed costs, poverty, and a missing credit market. The farmers were too poor to pay the fixed costs required for making the switch. If a perfect credit market had existed, they would have been able to borrow against the large expected returns of switching crops, in order to finance the investment. Market imperfections and a mass of poor people at the bottom of the distribution lead to missed opportunities and X-inefficiency.

But the other two examples are different. The Indian children who solve fewer mazes when they are explicitly reminded of their inferior social status do not require any markets that might be missing or imperfect. Yet, in a convincing experimental setting, their productivity is reduced by the mere existence of the social hierarchy. If similar declines in productivity occur in real work situations, the private and social losses would be no less important. The Ghanaian women farmers who cannot adequately fallow their land, leading to losses in its productivity, similarly do not suffer from poverty combined with missing markets. The channel here is an inequality in power, when effective property rights are power-dependent. What all three situations have in common is that differences in wealth, power, or status generate unequal opportunities for productive investment. In all cases, these inequalities cause society to remain shy of the Pareto frontier.

A concern with these mechanisms is particularly justified because of the evidence that unequal productive opportunities persist across generations, over long periods of time. The World Development Report 2006 highlights two broad mechanisms through which inequalities are reproduced—leading to what it calls inequality traps. One is the simple fact that many of an adult’s outcomes (such as education and wealth levels, or where one lives) will be his children’s predetermined circumstances. If the children’s outcomes are affected by the circumstances, the ingredients for intergenerational persistence are present. In fact, a growing literature on intergenerational mobility (or the lack thereof) has documented the impact of parental background on both achievement and the degree of transmission of status across generations. In the United States, Mazumder (2005) finds an intergenerational earnings elasticity of 0.6, which implies that a family currently earning half the national average income can expect to take five generations to reach the average. Estimates for developing countries are few and far between, but can be even higher. Dunn (2003) estimated an elasticity of 0.69 for Brazil.

The second mechanism for the persistence of inequalities is institutional endogeneity. Since Douglas North and Oliver Williamson, modern economists have under-
stood that the manner in which individuals and firms interact in markets is conditioned by the nature of nonmarket institutions—formal and informal rules and norms of behavior, and the agencies that enforce them. Among the most important roles of these nonmarket institutions are the definition and enforcement of property rights and contracts. People will not invest if property rights are not well-defined and enforced, or if they believe that the contracts they write will not be honored. The state must also provide a whole set of other inputs apart from social order and fair contract enforcement. These include various types of public services and regulations. Lying behind well-functioning markets are legal systems, judges, policemen, and, ultimately, social groups and politicians.

But institutions, like policies, are not designed by a benevolent dictator. They evolve over time in response to the actions of individuals and groups who seek to protect their own interests. It follows that institutions—again just like policies—need not be optimal from a social viewpoint. It is perfectly possible that the institutions that are best-suited to the short-term interests of a particular group in a particular generation are not those most conducive to broad-based economic growth and development. If that particular group happens to be very powerful, however, it is also possible that those institutions end up prevailing, despite not being the best ones for growth and development.

The World Development Report 2006 discusses a number of examples, both historical and contemporary, of different institutional developments that appear to have been driven by different degrees of political and economic inequality. One revealing comparison—which draws on work by Acemoglu, Johnson, and Robinson (2001), and Engerman and Sokoloff (1997)—is that between European colonies in North and South America. Those colonies, such as present-day Brazil, Mexico, or Peru, where initial factor endowments enabled the colonizers to establish extractive institutions based on highly concentrated property and control structures (such as the mita system of forced labor used in the Andean silver mines, or the capitâncias hereditárias in northeastern Brazil), tended to do less well in the long run than colonial backwaters, such as present-day Canada and northern United States, where conditions were not ripe for producing any of the colonial era’s most desirable commodities, such as gold, silver, or sugar.

In these places, instead of imposing concentrated patterns of land ownership and indentured or slave labor institutions, colonists were left to their own devices. The absence of large native populations (who could be exploited and dispossessed) or slaves (who were not imported, since soils and climates were not suitable for the crops that would justify the investment) meant that free populations of European descendants were soon in the majority. Rather than making rules designed to prevent the exploited native (or enslaved) masses from sharing in prosperity, these colonists soon demanded greater autonomy in decision making. Because population density was low and there was no way to extract resources from indigenous peoples, early commercial developments in Canada and the United States had to import British labor. And, relative to much of the colonial world, the disease environment was benign, stimulating settlement. Indeed, the Pilgrim fathers decided to migrate to the United States rather than Guyana because of the high mortality rates in Guyana.10
Limited supplies of labor gave workers a greater bargaining power, forcing elites to extend political rights and create equal access to land and the law.

The World Development Report 2006, following Acemoglu, Johnson, and Robinson (2001) and Engerman and Sokoloff (1997), argues that these initial institutional differences between North and South American colonies have persisted for centuries, and led to important differences in economic outcomes between the two sets of countries. The argument is that institutions that rely on a high concentration of property and control over resources, and offer limited opportunities for investment and innovation for large segments of the population, are less efficient. Because talent and ideas are widely distributed in the population, economies in which the property of all people is secure and in which there is equality before the law for all (rather than just for some) tend to do better. Similarly, political systems that provide access to services and public goods for all are associated with superior long-term economic performance.

Policy and Research Implications

The thesis of this paper is that inequality of opportunity, which has gained prominence in modern normative thinking about social justice, is also a highly relevant concept for understanding the positive links between distribution and efficiency. Wealth inequalities (combined with market imperfections), inequalities in power, and status differences have all been shown to lead to inefficiency—in a number of contexts. It has also been argued, prominently and plausibly, that large inequalities in power and wealth can lead to institutional characteristics that are associated with lower subsequent growth.

The broad implication for public action is that the effects of any policy on the distribution of opportunities will in general have an impact on aggregate efficiency, which needs to be taken into account in any assessment or evaluation of the policy. In some cases, the impact may be direct, and relatively simple to measure. Building a road that connects a poor and geographically isolated area to markets may increase profit margins on sales of its produce and lower the costs of consumption goods in (possibly) measurable ways. In many other cases, however, measuring the efficiency gain from redistributing opportunities is much more difficult. How does one quantify the savings from ethnic conflicts that are avoided by a (hypothetically) successful integration or affirmative action program? How long must one wait until the full benefits of educating girls today shows up in the opportunities available to their children in the future?

We will return to these measurement and long-term evaluation challenges. Conceptually, however, the general point is that if highly unequal opportunities generate inefficiencies, then reductions in these inequalities may well be efficient. Ignoring the full long-run benefits (or costs) of any reductions (or increases) in inequality of opportunity will, therefore, generally result in an under-provision of efficient redistribution.
The World Development Report 2006 discusses implications of this general point in considerable detail, and for a variety of policy areas. The lasting impact of early childhood nutrition and mental development on subsequent opportunities implies that the payoffs to investment in early human development programs are likely to be large. The imperfections of insurance markets imply that the existence of appropriate social security systems can enable efficient (but riskier) investment decisions to be made. Complementarity between infrastructure and private capital often argues for an expansion of access to the poorest groups. Market rules and institutions are often skewed toward more powerful groups, sometimes generating substantial inefficiency in resource allocation.

Though mentioned only briefly here, the four chapters dedicated to these themes in the WDR 2006 insist that appropriate policy recommendations can only be made with an adequate understanding of the local context. The question of whether the highest social return to a marginal dollar—even once the full benefits of equity are taken into account—accrues to improving the rural road network or expanding a conditional cash transfer scheme clearly cannot be answered in the abstract. The answer to any such question will surely depend on specific conditions in the country. In some cases, a priority for both efficiency and equity reasons will lie in reforming a captured and corrupt financial system. In others, it may be that the marginal dollar should be returned to the taxpayer, in the form of lower taxes. In others yet, the expected long-term returns on a publicly funded expansion in basic health care may be so high that taxes may need to rise.

Such context specificity, while rather fashionable these days, has serious implications of its own for applied research. If the concept of opportunity sets and the distribution of opportunities actually turn out to matter for development policy, considerable progress will be needed in their measurement. We therefore close this paper with a suggestion for three areas where further applied research would be helpful, if policymakers are to be presented with evidence on the basis of which better-informed decisions can be made.

Measurement of inequality of opportunities is surely one area where improvement can be made. If opportunities are perfectly correlated with incomes—or wealth—then, clearly, one needs only to measure those variables accurately. The hypothesis that is often proposed, however, is that the determinants of opportunity are many, so that the partial correlation with any one of them is imperfect. Wealth may very well affect opportunities but so do, the argument goes, race, disability, gender, caste, place of birth, and so forth. If that is so, can one compute acceptable summary indicators of this ex ante set of potential outcomes? Initial attempts have been made, but the area is in its infancy, and more work is needed.12

Since inequality of opportunity is closer to the concept of distribution that is relevant to the theoretical literature on inequality and growth than income inequality, a related question is whether turning to such an indicator might shed light on the inconclusive empirical cross-country literature on the subject. While most cross-section regressions of growth on initial income inequality (with controls) have returned negative and significant coefficients on inequality, most panel regressions of
growth on lagged, time-varying income inequality (with controls) have returned positive and significant coefficients. If we were able to measure inequality of opportunity directly for a number of countries, so that one no longer needed to rely on income inequality as a proxy, would the cross-country result shed light on the “macro-economic” effect that corresponds to the microeconomic impacts identified through studies such as those discussed in the previous section? The question remains open.

Long-term evaluation of projects and policies aimed at greater equality of opportunities is a second policy-relevant area where the current stock of knowledge is insufficient. The WDR 2006 suggests that, in a number of instances, returns on some investments in the opportunity-poor may suffer from a considerable delay. The impact of better nutrition for expecting mothers may not show up until today’s fetus becomes tomorrow’s adult. Gains from reduced ethnic conflict that may follow from investments in poor ethnic minorities today may accrue decades into the future. And so on. However difficult properly evaluating impacts over extended periods of time may be, attempts would have to be made, unless policymakers are expected to take such benefits on pure faith.

A related question is that of quantifying costs and benefits. It has long been understood that policy choices depend not only on a careful identification of their impact, but also on a relative quantification of the costs and benefits of individual projects, relative to alternatives. The difficulties are many, but it is somewhat unfortunate that the basic insights from the literature on cost-benefit analysis—from Little and Mirrlees (1969) and Drèze and Stern (1987), for instance—are so unfashionable these days. However unglamorous such estimations may appear to contemporary journal editors, there is likely to be substantial policy payoff from combining the much improved techniques for measuring impact (from experimental and matching methods) with an understanding of the need to value their costs and benefits.

The link between equal opportunities (or equity more broadly) and institutional quality is the third area where current knowledge is insufficient. While the historical evidence presented by Acemoglu, Johnson, and Robinson (2001) and Engerman and Sokoloff (1997) is persuasive, it falls short of identifying the precise mechanisms through which equity affects institutions. The arguments are plausible, but more evidence—and different categories of evidence—is needed. A promising avenue in experimental economics is the use of laboratory experiments in which subjects play variants of a basic game, with controlled changes in rules (institutions). One interesting example is the Repeated Public Good Game, in which individuals must decide whether to keep their money (at zero returns), or invest it in a common project with high returns. Rates are set such that the highest returns to all players are attained when all invest 100 percent in the common project, but the dominant strategy for each individual player is to free-ride on others: or, not to invest one’s own resources, but seek to benefit from the high returns in the common pot. Fehr and Gachter (2000) find that actual behavior in the game differs substantially depending on whether or not punishment (expending real resources to punish noncooperative behavior) is allowed. When punishment is permitted, even a small number of altruistic players can sustain a cooperative (and Pareto-superior) equilibrium. While in
this example institutions are exogenous, and one investigates their effects on outcomes, it might be possible to design experiments where rules are endogenous, and where the distribution of endowments changes.\textsuperscript{15}

As research on these different fronts evolves, we may learn more about the nature and extent of redistributive activity that governments should seek to pursue, even if they are concerned exclusively with dynamic efficiency. Normative considerations will always remain important, and they are additional to these insights. Such an agenda would complement the substantial evidence presented in the WDR 2006 about the extent of the inequality of opportunity that exists today, both within and between countries, and about the impact of that inequality on investment and institutions.

Notes

1. See, for example, Aghion and Bolton (1997), Piketty (1997), and Aghion, Caroli, and Garcia-Penalosa (1999).
2. See, for example, Bénabou (2000) and Ferreira (2001).
3. A number of papers echoed Amartya Sen’s (1980) Tanner Lecture on Human Values, which was entitled “Equality of What?”
4. Sen defines a person’s \emph{capabilities} as the set of all possible \emph{functionings}—actions and states of being—from which this person can choose.
6. From Goldstein and Udry (1998); see figure 4.
9. Mazumder’s estimate is considerably higher than previous estimates (of about 0.4). See, for example, Solon (1992). The difference arises mainly from the author’s use of a long-term social security earnings history of fathers and children, which allows him to reduce the variance of the transitory component of incomes inherent in previous measures of father’s economic status, usually drawn from the Panel Study of Income Dynamics (PSID) or from the National Longitudinal Surveys (NLS).
11. The term “efficient redistribution” has been used before. In one prominent discussion, Bowles and Gintis (1996) argued that a number of “asset-based” redistributions—including that of property rights over firms to workers; over houses to tenants; of school vouchers to parents; and of parental income streams to children—would increase efficiency, by transferring residual rights of control over assets to those whose actions more directly affect asset use or maintenance. While there are substantial differences between their detailed proposals and those put forth in the WDR 2006, there is also one basic broad similarity: both emphasize the potential for asset redistributions that enhance, rather than attenuate, productive incentives. Both approaches suggest that equity can and should be pursued in a market-friendly manner, with potentially large efficiency gains.

14. The difficulties in carrying out even well-designed experimental evaluations over a long period are illustrated by a recent medium-term evaluation of student achievement following the PROGRESA (now Oportunidades) program (see Behrman, Parker, and Todd 2005).

15. Other research strategies are evidently also possible, including detailed case studies of how particular institutions develop, or looking for governments (national or local) that are willing to conduct “institutional experiments.”

References


