

#### Conférence présidentielle

## REVISITING THE DEBATE ON INEQUALITY AND ECONOMIC DEVELOPMENT

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Dalloz   « Revue d'économie politique »
2015/5 Vol. 125   pages 633 à 663
ISSN 0373-2630
Article disponible en ligne à l'adresse :
http://www.cairn.info/revue-d-economie-politique-2015-5-page-633.htm
!Pour citer cet article :
François Bourguignon, « Revisiting the Debate on Inequality and Economic Development », <i>Revue d'économie politique</i> 2015/5 (Vol. 125), p. 633-663.  DOI 10.3917/redp.255.0633

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LXIII<sup>e</sup> CONGRÈS ANNUEL DE L'AFSE, 2014

## Conférence présidentielle Revisiting the Debate on Inequality and Economic Development<sup>1</sup>

François Bourguignon

This paper offers a selective survey of the abundant theoretical, empirical and policyoriented literature on the relationship between inequality and development in the last 20 years or so. The main argument of this survey revolves around the necessary, but often ignored distinction to be made between the inequality of outcomes, including income or consumptions expenditures, and the inequality of opportunity as an obstacle to development. Theoretical justifications of a negative relationship between economic development and inequality indeed suggest that it is not the inequality of economic outcomes, income or consumption, per se that hinders economic development but other dimensions of economic and social inequality, including family background, access to the credit market, education, health care, security, justice and so-called "horizontal" inequality between ethnic groups or gender. It turns out that the inequality of income, on which the empirical literature focuses almost exclusively, is a very imperfect marker of this broader definition of inequality, that corresponds to the inequality of opportunity. At the same time, and somewhat paradoxically, correcting these various dimensions of inequality requires policies that imply some redistribution of income, even though income inequality is more a consequence than the main cause of those inequalities that actually hinder development.

inequality - inequality of opportunity - income inequality - poverty - development - growth - redistribution

#### Le débat sur inégalité et développement économique : un réexamen

Cet article réexamine de façon sélective l'abondante littérature économique des 20 dernières années sur la relation entre inégalité et développement. Son principal argument porte sur la distinction nécessaire, et souvent négligée, entre « inégalité des revenus », ou des résultats, et « inégalité des chances » comme frein au développement. Les justifications théoriques d'une relation négative entre développement et inégalité suggèrent que ce n'est pas l'inégalité des résultats, revenu ou consommation, qui est un frein au développement. Ce sont d'autres dimensions, plus fondamentales, de l'inégalités économique et sociale, comme les différences dans les familles ou les milieux

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<sup>1.</sup> This paper is an extension of my presidential lecture at the 2014 Congress of the French Economic Association, Lyon. A companion paper, Bourguignon [2015a] has been presented at the IEA-World Bank Workshop on Inequality and Development, The Dead Sea, Jordan, June 2015. I thank the participants of both events for their useful comments.

#### 634 \_\_\_ Revisiting the Debate on Inequality and Economic Development

sociaux d'origine, dans l'accès à l'éducation, aux soins de santé, au crédit, à la sécurité ou à la justice, ou encore la discriminations à l'égard de certains groupes ethniques ou des femmes. Il se trouve que l'inégalité des revenus sur laquelle se concentre presqu'exclusivement la littérature empirique sur inégalité et développement n'est qu'un marqueur très imparfait de cette définition plus générale de l'inégalité, qui correspond à l'« inégalité des chances ». Mais en même temps, et de façon paradoxale, corriger ces dimensions de l'inégalité requiert le plus souvent des politiques impliquant une certaine redistribution des revenus, bien que l'inégalité des revenus soit plutôt une conséquence que la principale cause des inégalités qui compromettent le développement.

inégalité – inégalité des chances – inégalité des revenus – pauvreté – développement – croissance – redistribution

Classification JEL: 124, 125, O11, O12, O15

#### 1. Introduction

There are two sides to the issue of the relationship between inequality and development. One side focuses on the distribution of the benefits of development and the capacity of development to effectively reduce poverty. The other side focuses on how the distribution of economic resources may affect the pace and structure of development.

The first side of the issue, namely who benefits from development, centers around Simon Kuznets' famous hypothesis, according to which income inequality tends to increase in the first stage of development, and then decreases beyond some threshold. This hypothesis motivated many studies in the 1970s and the 1980s. On the one hand, it provided an explanation for the mechanisms that determine the distributional consequences of economic growth. On the other hand, it allowed us to test whether the hypothesis of an inverted-U, or Kuznets curve between inequality and average income per capita could be justified empirically. As it turns out, there seems to be no empirical evidence of a systematic relationship between the level of development (e.g., as measured by GDP per capita) and income inequality (e.g., as measured by the Gini coefficient). The recent increase in inequality in developed countries may support this conclusion, as well as demonstrate the complexity of the multiple mechanisms and policies that determine the evolution of inequality.

The other side of the issue of the inequality-development relationship has attracted much attention over the last 20 years or so, even though the modern discussion on the topic dates back to Kaldor [1955]. He observed that if capitalists saved more than the workers, a faster rate of growth was associated with a higher share of profit. In the 1990s, renewed interest in the theory and empirics of economic growth led to various alternative views on whether and how inequality could affect the rate of economic growth. These views departed somewhat from the pure macroeconomic functional distri-

bution framework in classical, neo-classical, and Keynesian (*i.e.*, Kaldor's contribution) economics. From a theoretical perspective, the prevailing belief included the existence of a tradeoff between the equality of the distribution of economic resources and economic efficiency. However, many authors showed that inequality could actually cause inefficiency and slower growth through various channels, including market imperfections, endogenous redistribution, and political economy mechanisms. From an empirical perspective, the growth regression wave of the 1990s generated a flurry of econometric tests of the effect of the initial Gini coefficient of income distribution<sup>2</sup> on economic growth during some period. Heterogeneous results were obtained, although a slight majority favored a negative relationship.

Despite the considerable work and energy expended by the economic profession on this matter, there are few conclusions on whether inequality has a positive or negative effect on economic growth and development, or what the policy implications of the effect might be. Of course, equality may be seen as an objective worth pursuing per se, for ethical reasons. Even so, however, it seems important to know something about the economic cost of reducing inequality. Is the cost substantial, or perhaps even prohibitive, as some claim? Alternatively, are there situations in which the objectives of equality and economic growth are complementary?

The theme of the 2006 World Development Report (WDR) published by the World Bank was "Equity and Development." This was probably the first major attempt at answering the preceding questions with a policy focus. Interestingly, the report used the word "equity" rather than "equality" or "inequality." This distinction was conceptual, not rhetorical. An important contribution of the report was to emphasize the ambiguity and, often, the confusion associated with the concept of "inequality" in the debate on inequality and development. In line with the theoretical contributions in this area, the main message of the report was that inequality in terms of opportunities rather than economic outcomes can hinder economic efficiency and growth. Thus, the distribution of income, which had been the exclusive focus of empirical analyses, should be seen more as a consequence of how opportunities are distributed in the population and an imperfect marker of the inequality of opportunities than as the single target of policies aimed at generating equity, economic efficiency, and faster growth.

This report was published 10 years ago, under my supervision as the then Chief Economist of the World Bank. While it was certainly not the first time the issue of inequality and development was being brought to the forefront in the development community, the WDR 2006 followed a long period of neglect. For instance, it appeared more than 30 years after the influential "Redistribution with Growth" volume edited by H. Chenery [1974]. During this period, the reflection had focused more on absolute poverty reduction and aggregate growth than on inequality per se. The report was also conceptually innovative in that it considered not only the intrinsic value of equity, but also its instrumental role in economic growth and development.

<sup>2.</sup> Throughout this paper, income distribution or income inequality refers to either income proper or consumption expenditure, as distribution data in developing countries cover one or the other.

Since then, inequality has become a hot topic, and presently focuses strongly on income inequality and its increase in a number of developed countries. In light of this renewed interest on the issue of inequality, it seems worth reevaluating the approach and recommendations of the WDR 2006 with reference to developing countries. In particular, what should we make of its emphasis on the inequality of opportunities as an impediment to economic development at a time when attention is focused on the inequality of income and income redistribution instruments?

The remainder of this paper is organized as follows. The sections 2 and 3 provide short reviews of theoretical and empirical research on the topic, respectively, emphasizing in particular the heterogeneity of the inequality concept used in that literature. Section 4 discusses the contribution, main messages, and limitations of the WDR 2006, as well as its innovative focus on the inequality of opportunities. Section 5 lists various priorities for further research on the positive relationship between inequality and development. The final section concludes.

# 2. "Inequality of what?" in the theoretical literature on growth and inequality

This section does not seek to duplicate existing surveys of the growth-inequality literature.<sup>3</sup> Rather, it provides a brief review of this literature, highlighting the fact that it often refers to different inequality concepts and, because of this, may sometimes lack consistency. Some contributions refer to vertical income inequality, without always providing a clear distinction between market or disposable income. Others refer to horizontal inequality among ethnic groups or genders, to wealth inequality, or to inequality in terms of access to credit or education. These different approaches correspond to different aspects of inequality. Yet, to understand how inequality affects economic growth and development, it is necessary to understand the role played by these various dimensions and the channels through which they weigh upon the pace and the structure of growth.

The theoretical literature on the link between inequality and growth has grown rapidly during the last two decades or so. In particular, the rising level of income inequality in several developed countries has awakened the interest of the economic profession on this issue. However, this paper focuses on the perspective of developing countries. In what follows, the main channels through which various aspects of inequality have been thought to possibly affect the development of such countries will be considered in turn.

<sup>3.</sup> See Aghion et al. [1999]. A more recent survey is that of Ehrhart [2009], and for a greater emphasis on empirical literature, see Neves and Silva [2013] or Ostry et al. [2014].

## 2.1. Saving propensity differential and the Kaldorian mechanism

It is somewhat improper to refer to this channel of transmission of inequality to growth as "Kaldorian" because the causality is opposite to that of Kaldor's original contribution, where it runs from growth to the functional distribution of income between capital and labor. In fact, the modern literature essentially refers to the idea in Kaldor's work that capitalists save more than workers. Furthermore, this difference in saving propensity between capital and labor income is taken to be equivalent to there being a higher propensity to save among richer people. Given this argument, and if savings determine investment, more inequality should be associated with faster growth. Then, an important empirical issue is whether it is valid to extend the saving propensity differential between capital and labor income at the macro level to individual incomes. If a substantial part of savings arises from undistributed profits, the observed level of inequality among households will have a negligible impact on savings, investment, and growth. It would then be better to consider aggregate factor shares than inequality measures.

This potential negative impact of too much inequality, via the saving propensity gap, generalizes to the effect of progressive redistribution upon the rate of growth. Transferring income from the top to the bottom of the distribution through taxation may reduce the overall propensity to save of the economy through the preceding mechanism. More directly, however, income taxation may reduce the rate of return to capital and the incentives to save and invest. This is the traditional argument for the existence of the tradeoff between inequality and growth. Economies that redistribute more must be less unequal than others, but they may not grow as fast. This hypothesis has been the focus of an important part of the empirical literature on inequality and growth.

#### 2.2. Endogenous redistribution

Redistribution may also be endogenous, and a response precisely to too much inequality in market incomes. This provides another channel through which income inequality may affect economic growth. If redistribution does reduce investment incentives and entrepreneurship, inequality may indeed be responsible for slower rather than faster growth. The difference with the preceding case is that the relationship now is between the inequality of market incomes and growth, rather than disposable incomes (*i.e.*, after taxes and transfers) and growth.

<sup>4.</sup> The same can be said of Piketty [2014], which considers steady states where both the growth rate and the rate of return on wealth are exogenous. Thus, the causality again runs from growth to distribution, rather than in the opposite direction.

A standard representation of the way income redistribution through taxes and benefits depends on the initial level of income inequality is through majority voting on the rate of taxation in a democratic society (see Romer [1975] and Meltzer and Richard [1981]). Low-income voters are in favor of a progressive redistribution of income, even though they take into account that taxation will reduce the growth of their future income. In contrast, high-income voters are opposed to redistribution. The pivotal voter is the voter with the median market income. Her decision logically depends on how far below the mean income she is and, therefore, how much inequality there is in society. This model may be generalized to non-majority voting, as long as the pivotal voter's income is below the mean.<sup>5</sup> It may also be generalized to non-democratic societies by assuming the ruling elite redistributes income so as to minimize the probability of social disorder that would threaten its political control over the population.

The possibility of some social movement caused by too high a degree of inequality provides another, more direct way through which inequality may affect economic growth. Political instability, social tensions, or social conflicts are direct impediments to investment and entrepreneurship and, therefore, to growth. This argument can also be extended to crime, if it were proven that, as suggested by some authors, the extent of criminality is a consequence of the degree of inequality.<sup>6</sup>

Again, note that the aforementioned channels for the impact of inequality upon growth may refer to types of inequality other than income inequality. For example, social conflict or political instability may arise from inequality among ethnic groups. Likewise, the lack of social mobility may be more relevant to social tensions and even criminal behavior than the degree of income inequality in a country.

## 2.3. Imperfect credit markets and wealth inequality

A strong argument in favor of inequality generating inefficiency and slowing down economic growth relies on the imperfection of the credit market and the inequality of the wealth distribution. The argument is simple. People without enough wealth cannot undertake potentially profitable investment projects because they lack collateral to offer to lenders, who are imperfectly informed about their project and their determination to make it successful. In contrast, richer people can undertake projects with less private and social profitability because they have the collateral, or simply because they do not need to borrow. Clearly, it would be better for society if the most profitable projects in the former group were undertaken rather than the least profitable

<sup>5.</sup> This endogenous redistribution model of the relationship was originally developed by Persson and Tabellini [1993], Alesina and Rodrik [1994]. The generalization to the case where the pivotal voter is not the median voter is discussed in Benabou [2000].

<sup>6.</sup> For evidence on the relationship between inequality and political instability see Alesina and Perrotti [1996]; about inequality and crime see Fajnzylber et al. [2002].

in the latter group. Yet, it is the latter that are actually implemented. It follows that redistributing wealth from the top of the distribution to those in need of collateral at the bottom would improve the efficiency of the economy and accelerate growth by encouraging investment and making the economy more productive, on average.

This argument is illustrated in figure 1, where a wealth transfer, x, is made between individual R and individual P, whose wealth is just below the borrowing threshold, X. Thus, X is the collateral required by a lender to lend enough to P to cover the cost (greater than X) of a specific investment project. The size of the transfer is such that it allows P's wealth to jump above X, so that P can undertake a project with a net annualized return, P. In the case of P, transferring P is equivalent to an annualized loss of income equal to P is the rate of interest. The project undertaken by P is supposed to have a rate of return above P, so that P is a Thus, the wealth transfer raises the aggregate income of the economy by P is P in P



Figure 1. Wealth transfer and efficiency

This line of argument was initially proposed by Banerjee and Newman [1993] and Galor and Zeira [1993], the latter in connection with education. The argument is very persuasive, in particular because of clear microeconomic evidence of inefficient rationing in the credit market in many economies, especially in developing countries. Not surprisingly, it was successful in convincing both the profession and some policymakers that there was indeed a relationship between inequality and economic efficiency or economic growth. However, the problem is that the implications of the argument were not always fully understood. In particular, the interpretation in terms of "inequality", whatever its definition, being responsible for slower growth was certainly not justified. Here too, the nature of the inequality in this argument matters.

First, the imperfect capital market argument refers to the distribution of wealth. Thus, extending it to the distribution of income, as often occurs in

<sup>7.</sup> Other important contributors to this line of reasoning include Aghion and Bolton [1997], Benabou [1996], or Piketty [1997].

empirical literature, is unjustified, except to the extent that the latter may be considered as a good proxy of the former. Second, note that the preceding argument does not refer to the degree of inequality of the distribution. Instead, it states that *some* transfer of wealth from rich to "less rich" people, and not necessarily the poorest, would improve economic efficiency and growth. This may be the case with a relatively egalitarian distribution or in a very inegalitarian distribution of wealth, as long as there is some threshold under which the credit market constraints bind on investment behavior. Third, this being the case, what matters is the unequal access to credit, whatever the cause of that inequality, rather than the inequality of wealth. For instance, it might well be that unequal access to credit within a population is caused by ethnic or gender discrimination.

### 2.4. Inequality of "opportunities"

The case of an unequal access to credit can actually be generalized to many other areas. Barring some people in the population from undertaking an activity that would be profitable for both them and society necessarily generates economic inefficiency and, possibly, slower growth. More could be produced in the economy without this particular type of inequality.

One can think of many examples of such an inefficient inequality in the income-generating opportunities open to people. Unequal access to quality primary or higher education because families are liquidity constrained would be a special case of the credit rationing case, and a highly relevant one. Children in low-income households may fail to receive quality education or gain access to an upper secondary or university education, even though they may be more talented than others. Discrimination in the labor market by ethnicity or gender reduces the incentives of those discriminated against to participate in the labor force or to invest in further training. Unequal access to justice weakens property rights and discourages land improvements in agriculture or entrepreneurship in other sectors. Unequal access to healthcare may be responsible for some irreversible damage in human capital. Unequal access to formal insurance generates poverty traps. The list goes on.

Of course, in all these cases, the limited access to some facility, service, or income enhancement activity is correlated with the standard of living of people or their family. Thus, there may be some relationship between the distribution of standards of living and this kind of inequality. However, the important point is that the relationship may be a very loose one. For instance, it is well known that the same distribution of individual earnings may be consistent with various degrees of gender discrimination, including no discrimination at all.

Note too that the inequality in access to good quality or well-paid jobs for people with different gender or ethnicity is often referred to as "horizontal inequality," as opposed to "vertical inequality." The former refers to people who are otherwise identical, but cannot generate the same income. The

latter simply considers the position of people along the income or earnings ladder, while ignoring their characteristics. Yet, horizontal inequality clearly matters for economic growth, as is evident from recent literature on gender inequality and economic development, or from the discussion of the role of ethnic fragmentation in explaining cross-country differences in growth rates in the developing world and, in particular, in sub-Saharan Africa.<sup>8</sup>

#### 2.5. The demand side

The theoretical literature on development tends to emphasize the supply side of the economy and the availability of productive resources as the factor limiting growth. This may be justified in aggregate terms, but it must be recognized that the structure of demand may affect both the sectoral structure of the production side and the overall growth rate of the economy. Not all goods are traded with the rest of the world, and foreign demand may impose constraints on the development of national economies, either through the volume or, more likely, the price of exports. If this is the case, then domestic demand and, therefore, the income distribution, which determines the size of aggregate demand and its composition by type of goods, have a role to play. For example, China's outward oriented development strategy is affected by the slowing down of demand in developed countries; reorienting this strategy toward the domestic market may require appropriate measures to be taken on the income distribution front.

Oddly enough, the literature that links inequality and development through the consumption channel is somewhat limited. A major paper was that by Murphy et al. [1989]. Even though abundantly cited, few researchers seem to have followed in their footsteps. The basic idea in their paper is both simple and powerful. In a developing economy that exports some basic commodity, an unequal distribution of the income derived from that commodity generates a limited demand for manufactured mass consumption goods because only a minority of the population can afford to buy such goods. If there are economies of scale in the production of those goods, domestic producers would be unable to compete with imports without heavy protection, which would make the goods more expensive and further limit the demand. In contrast, a more equal distribution of export revenue would expand the demand and possibly allow domestic producers to take advantage of scale economies in the production of these goods. Thus, industrialization may be incompatible with an initial specialization in the export of natural resources or raw agricultural products and a high degree of inequality in the distribution of the resulting income. Of course, such an argument applies to an economy of a size above some minimum for economies of scale to be relevant. It also requires frictions in foreign markets. With no transport costs and no trade barriers of any kind, demand would never be a constraint in the industrialization of the economy.

<sup>8.</sup> On gender, see the recent survey by Kabeer and Natali [2013], and on ethnic fractionalization, see Alesina and La Ferrara [2005].

The Murphy *et al.* [1989] paper is essentially static. One could possibly also think of a dynamic version where the limited size of the market for mass consumption goods would discourage investment in the domestic economy and redirect available savings by the economic elite toward foreign markets, bypassing existing capital controls. Thus, in such an economy, there would be two dynamic equilibria: one with a very high degree of inequality in the distribution of income, leading to slow growth and no industrialization; and the other with a more equal income distribution, leading to faster growth and industrialization. Again, these assume that the economy is large enough for economies of scale to trigger this process.

In this framework, the relevant concept used to analyze the relationship between inequality and growth concerns income in general, and its consequences for the structure of the aggregate demand by type of good. Yet, in the kind of developing economy described by this model, it must be stressed that a major source of inequality actually originates in the distribution of the rents generated by the export activity. Even though it is rarely recorded in available statistics, it is this distribution that may ultimately determine the growth path of the economy.

#### 2.6. Institutions and development

The recent theoretical literature emphasizes, and rightly so, the role that institutions, in a broad sense, play in development. Among them, political institutions and the way political power is distributed in the population are clearly of utmost importance. The way predatory political elites may confiscate the process of development and maintain power, and the bifurcation that would take place if society could democratize, even in a limited way, has been extensively studied by several authors, including Acemoglu and Robinson, in various publications. This is not the place to summarize this voluminous recent literature. Yet, it is important to stress that their discussion about the role of the nature of political institutions in economic development has very much to do with a particular type of inequality, namely that of the distribution of political power or unequal access to public decision making.

The point is not so much the simple distinction between autocracy and democracy. From that point of view, the debate about the implications of these political regimes for economic development continues. Other institutional aspects within given political regimes are more important, even though they are more or less pronounced, depending on the regime. In particular, issues of cronyism and corruption can be seen as responsible for clear departures from mechanisms leading to efficient economies. Generic names given to the overall quality of institutions, such as the "extractive"/ "inclusive" distinction made by Acemoglu and Robinson [2012], precisely include several such institutional characteristics, implying that the same name may cover diverse realities. In this more general sense, the quality of

<sup>9.</sup> See, in particular, Acemoglu et al. [2005] and Acemoglu and Robinson [2013].

institutions may refer to unequal opportunities open to citizens, for instance, opportunities that depend on their economic resources, as when rich people are able to bribe corrupt judges, or on the proximity of people to the elite in power.

To be sure, the weakness of institutions in effectively guaranteeing equal rights to citizens is most likely to generate economic inequalities that will reflect in the income distribution. People with more "rights" than the others will benefit, while distorting the working of the economy, making it less efficient. At the same time, the concentration of resources in the hands of these people will reinforce their control of the economy, trapping the whole society in a vicious circle of under development. Corruption and cronyism generates slow growth and income inequality, the latter giving the elite the resources to keep political power so that corruption and cronyism perpetuate. Under these conditions, it is difficult to say what is responsible for slow growth: the weakness of institutions and the inequality of rights it entails, or the inequality of income it generates that allows weak institutions to keep going.

In summary, there is great diversity in the channels through which specific types of inequality may affect economic growth and development. Unfortunately, few of these inequality types lend themselves to easy statistical measurement. This explains why the empirical literature tends to focus almost exclusively on the only inequality concept readily available: the inequality of income or consumption expenditure. However, given the variety of channels reviewed above, this is a bit like looking for one's keys under a lamppost because it is the only place where there is light.

# The ambiguous empirical relationship between growth and inequality

Evidence in support of the various theoretical channels that may link inequality and growth may be sought at two levels: at the aggregate level, considering the relationship between some measure of inequality and growth across countries and/or across periods; at the micro level, gathering observations that confirm the basic hypothesis put forward by the theory. The two approaches will be considered in turn.

## 3.1. Aggregate evidence on inequality and growth

In the wave of the growth regressions that occurred in development economics in the 1990s, it was no surprise that the Gini coefficient of income

inequality appeared on the right-hand side of the equation. Alesina and Rodrik [1994] and Persson and Tabellini [1994] were among the first to test the hypothesis that income inequality has a negative impact on economic growth in a cross-section of countries. However, they both relied on theoretical models where the distribution of wealth or the distribution of a "basic skill" mattered more than the distribution of income per se. 10 Even so, the very rough evidence provided in these early papers favored the hypothesis of a negative impact of inequality of income on growth.

Subsequently, many studies delved further into this relationship using improved databases, larger samples of countries, and panel data rather than pure cross-sections. Thus, the inequality-growth relationship could be tested on a cross-sectional basis and for a limited number of periods for each country in the sample. A variety of results were obtained, some confirming the negative relationship, and others pointing to the opposite result. Ultimately, even though a majority of studies point to a negative relationship, this literature is marred by much ambiguity. Such ambiguity is not surprising, given the theory reviewed above, the statistical imprecision of available inequality measures, and the econometric specification being used. Moreover, even if the empirical relationship were less ambiguous, how to interpret it from a policymaking perspective would remain an issue.

In light of the theoretical discussion presented here, it is often the case that the inequality of the distribution of income is not the primary link between inequality and growth, even though it may be taken as a proxy or a "marker" of the inequality thought to affect growth. The inequality of wealth or education—years of schooling or cognitive scores—may, in some cases, be thought of as the primary source of inequality and the main factors that hinder growth. At the same time, it may influence the degree of inequality of incomes. However, the latter may also be influenced by many other forces, and does not perfectly fit the inequality of wealth or education. It is actually an imprecise proxy of the *primary* inequality taken to be the main cause for slow growth. It is also likely to be endogenous with respect to growth, since growth and income inequality both result from these primary inequality factors.

For example, consider the case where a major hindrance to growth would be the imperfection of the capital market, which would prevent a number of entrepreneurs from undertaking profitable investment projects for lack of collateral. Is this primary inequality reflected in the usual measure of the inequality of income or consumption expenditure among households? Not necessarily, if capital income represents a relatively small share of household income. However, if it does, it is precisely because of the unequal distribution of wealth, which also happens to explain the slow growth.

This reference to capital income and its potential role in the observed inequality of household income raises the question of the quality of the income distribution data and of the cross-country databases most often used in studies of the aggregate growth/inequality relationship. The under-

<sup>10.</sup> Interestingly, the paper by Alesina and Rodrik also considers the relationship between the inequality of land and the rate of economic growth.

reporting of property income is often considered a major weakness of household surveys. This bias is also present when inequality is defined on consumption expenditure. In that case, the problem comes from the undersampling of households at the top of the income ladder or their unwillingness to answer the questions in the survey. However, there are many other sources of imprecision in distribution data, including the following: i) some data sources refer to income, whereas others refer to consumption expenditure; ii) in both cases, the length of the period over which income or expenditure are observed is known to affect inequality estimates; iii) the definitions of income or consumption expenditure may differ across countries, or even across periods within the same country, when considering in-kind income, income transfers, or the implicit rent of home and durable goods ownership; and iv) inequality is defined on household income per household member in some cases, and per "adult equivalent" in other cases.

This lack of comparability makes assembling income/consumption inequality data within cross-country databases a difficult exercise. Several databases that directly use national surveys to compute approximately comparable inequality measures are available. A model database for developed countries and a few big emerging countries is provided by the Luxemburg Income Study (LIS). The World Bank database, POVCAL, is the equivalent for developing countries, but because of the surveys themselves, comparability is not as good as in the LIS. Other databases use "secondary data" taken from available publications, without necessarily making sure that published inequality indicators are truly comparable. The danger of comparing incomparable figures in these secondary databases was noted several years ago by Atkinson and Brandolini [2001]. Progress has undoubtedly been made since then. However, existing databases are still far from exhibiting the homogeneity and comparability of the LIS and POVCAL.<sup>11</sup>

Thus, many cross-country-based studies of the growth-inequality relationship are subject to caution because of this imprecision of the distribution data. The recent SWIID database tries to re-establish comparability through a missing-data algorithm. The algorithm uses as much information as possible from proximate definitions of inequality and proximate years to estimate missing observations or to correct existing values so that they fit a standard definition. Yet, much imprecision is still present. In many cases, there simply is not enough information to generate plausible estimates of missing observations. For instance, distinguishing between market and disposable income inequality in a given country where no information on redistribution is available is done in SWIID using information from a small number of countries where both inequality measures are available. 12 This is highly problematic when one examines data for a particular country and for econometric work because of the correlation in measurement errors across observations and because of the great heterogeneity of redistribution systems across countries.

<sup>11.</sup> A critical review of existing income inequality databases is available in a special issue of the Journal of Economic Inequality, edited by Ferreira and Lustig [2015].

<sup>12.</sup> On the SWIID database, see Solt [2014] and Jenkins [2015] in JOEI [2015].

The existence of various databases and the fact that the quality of their data improves over time may explain some disparity in the results of the econometric work on the growth-inequality relationship. At the same time, one would expect that measurement errors introduce a downward bias in the estimates of the elasticity of growth with respect to inequality. Thus, that many authors find a significant negative relationship could mean that the relationship is stronger than estimated. However, for this to be the case, one would have to assume that measurement errors are uncorrelated with the true level of inequality, or that the correlation is positive. To see that, note that the OLS estimate  $\hat{a}$  of the effect of inequality in a simple regression of growth on inequality in a cross-section of countries is given by:

$$\hat{a} = a. \frac{\sigma_I^2}{\sigma_I^2 + \sigma_u^2} + \rho_{Iu} \frac{\sigma_I \sigma_u}{\sigma_I^2 + \sigma_u^2}$$

where a is the true coefficient and  $\sigma_{\mu}$   $\sigma_{u'}$ ,  $\rho_{Iu}$  are the standard error of the level of inequality, the standard error of the measurement error, and the correlation coefficient between both, respectively. Then, if a is negative and  $\rho_{Iu}$  non-negative, the measurement error  $\sigma_{u'}$  introduces a positive bias:  $\hat{a} > a$  (or a negative one in absolute value). The opposite would occur if the true coefficient were positive and the correlation negative. In fact, it is more likely that the correlation between the true inequality and the measurement error is positive. For instance, if the measurement error is due to under-sampling at the top of the income scale, then one would intuitively expect that the more unequal the distribution, the larger the under-estimation of inequality.  $\frac{1}{3}$ 

This is an interesting point, as it could strengthen those studies that find a negative relationship between growth and inequality and weaken those that point to a positive relationship. However, the issue of the correlation between the measurement errors and the true level of inequality has to be investigated in more depth.

Beyond econometric issues such as endogeneity and measurement error biases, a difficulty with standard growth-inequality regressions is that, in line with the theoretical arguments above, they essentially correspond to a reduced-form model. Assuming that the estimated coefficient is negative and robust, does this imply that the redistribution of current income through taxation and cash transfers will accelerate growth? This is certainly not granted. On the one hand, theory suggests that taxation may have some negative impact on economic growth. On the other hand, the relationship between growth and income inequality may hide the true source of inequality that hinders growth. For instance, assume that the hindrance to growth comes from both the quantity and the quality of education being extremely

<sup>13.</sup> Using the variance of the logarithm as a measure of inequality, it can easily be proven that ignoring the richest person in a sample leads to underestimating inequality by an amount that depends on the ratio between the richest person's income and the mean income. However, the degree of inequality depends positively on that ratio. It is not clear how this property would generalize to other inequality measures and what would happen with other sources of error.

unequal. Then, a regression will show a negative effect of income inequality on growth, but income redistribution will not accelerate growth. What is needed here is to equalize access to good quality education.

A recent paper by Ostry et al. [2015] focuses on the effect of both inequality and redistribution, as measured by the difference between the Gini coefficient of market incomes and that of disposable incomes. Using the SWIID database, where estimates, or really proxies of the two concepts of inequality are available, they find that inequality in disposable income has a significantly negative impact on growth, but that redistribution does not. Thus, they conclude that redistribution is likely to accelerate growth, as it has no direct effect on growth and a positive indirect effect by lowering the inequality of disposable income. However, such a conclusion is far from guaranteed. The negative effect of disposable income inequality may reflect the influence of some other source of inequality, as in the previous example. If current income redistribution has no significant direct effect—assuming it is correctly estimated, which, in the present case, seems rather dubious—it would have no effect at all.<sup>14</sup> As is often the case with aggregate crosscountry growth regressions, more structural models are needed to justify policy recommendations.

Another dimension seldom considered in empirical growth-inequality literature concerns the distinction between the short- and long-run effects on growth of inequality reducing policies. In effect, through different channels, these policies may affect growth differently over different time horizons. For instance, consider the case of redistributive policies that use taxation and transfers. According to economic theory, such inequality reducing policies may have a negative effect on economic growth by reducing the incentive to work, to save, or to invest. However, they may also have a positive effect by reducing social tension. It is probably the case that the latter effect will take more time than the former to materialize, if it indeed does so. This line of argument has been developed recently by Halter et al. [2014]. When introducing both the Gini coefficient in year t and in year t-5 in a panel regression model, with growth between year t and t+5 as the dependent variable, they find that the short-run effect of inequality is positive, but the long-run effect (i.e., the lagged Gini) is negative. They interpret the positive short-run effects as reflecting purely economic mechanisms and the long-run effects as being derived from political process or institutional changes. This is an interesting conjecture, but the reduced-form nature of the model being tested does not really allow it to identify those channels. Furthermore, other limitations described here that are common to econometric studies in this particular area apply to this work as well.

If moving towards more structural aggregate models of growth and inequality is desirable, the difficulty of doing so must not be underestimated. In line with the theoretical discussion of the various channels through which inequality, in its various forms, could affect growth, the problem is twofold. First, little data are readily available to quantify these alternative concepts of

<sup>14.</sup> Indeed, the measurement errors on the difference between market and disposable income inequality in the SWIID database used in that study are likely to be quite large. See the discussion in Bourguignon [2015].

inequality at an aggregate level. Second, when such data are available, it is difficult to go beyond single reduced-form equation models. Aggregate indicators of inequality in the distribution of land ownership or of gender inequality are available for a number of countries, and simple regressions have been run to see how these dimensions impact the observed growth rates in cross-country samples. However, the reduced-form problem and the inherent weaknesses of this type of analysis are still present. For instance, gender inequality in education may affect economic growth by reducing labor force participation, preventing women's entrepreneurship or increasing fertility. Thus, would promoting girls' education through conditional cash transfer programs accelerate growth? Further, is gender inequality apparently affecting growth through its correlation with culture, laws, or gender discrimination in the labor market?

Answering these questions is necessary to understand the nature of the observed negative relationship between gender inequality and economic growth, as well as to derive consequences for policymaking. However, this requires much more than estimating a single-equation model on a cross-section of countries, and it is unlikely that enough statistical information might be gathered at the aggregate level to go much beyond such a simple approach.

If the macro approach to the growth-inequality relationship is bound to produce limited results beyond observing statistical regularities, things may be different at the micro level. We now turn to this side of the empirical literature.

# 3.2. The micro evidence and the difficulty of aggregating it up

By definition, the relationship between growth and inequality cannot be analyzed at the micro level since growth is essentially an aggregate concept. It is also the case that several of the channels through which inequality may affect growth are typically macro, for instance, the endogeneity of income redistribution or institutions in a broad sense. However, other channels involve constraints that rely on micro behavior. It might be possible to test the existence of such constraints and to measure some of their consequences. For instance, unequal access to the credit market channel may be tested by comparing the returns to capital in SMEs and in larger firms, 16 or asking directly people whether they are credit rationed. Unequal access to education can be measured by the school enrollment of children at schooling age or, when available, the distribution of school achievements. Several dimensions of the inequality of opportunities may also be measured, for instance gender- or ethnic-based inequality in education or in earnings, or the influence of family background on performance at school or on earnings later in life.

<sup>15.</sup> See the recent survey by Kabeer and Natali [2013].

<sup>16.</sup> See, for instance, McKenzie and Woodruff [2006] or Banerjee and Duflo [2004].

Yet, there is still a long way to go from observing people's unequal access to various income-generating facilities or constraints imposed upon them unequally to the overall impact of this type of inequality on economic growth. There are two analytical difficulties here. First, we need to identify the instruments able to overcome these constraints. Second, if they do exist, how do we aggregate their micro impact into overall gains in efficiency and growth.

Consider the case of unequal access to credit, which prevents some people from undertaking investment projects that would be profitable for them and for society. Suppose the evidence suggests that the rate of return to the limited capital invested in micro-firms is sensibly higher than in bigger firms, even after taking into account the demography of these firms and the probability that some of them will not survive. These findings clearly suggest a policy that subsidizes investment in that sector of the economy, even though this may mean less being invested in other sectors or in bigger firms. Then, two issues arise. How effective may such policies be in helping the development of micro-firms and the SME sector? If such policies are effective, how much can they achieve in terms of additional growth or higher levels of efficiency in the long-run? In particular, can we rely on observed differentials in return rates to quantify the effect of such a policy?

Structural empirical modeling of micro-entrepreneur behavior would be one way to answer the first question. However, this assumes appropriate data are available to permit us to identify the key behavioral parameters. If they are not, then pilot studies of various policy interventions and randomized control trials should be used. 17 In the specific case of an imperfect credit market, micro-credit policies would seem the obvious policy response, and experimenting with these should prove informative on how effective they may be. In fact, several studies have recently tried to evaluate the impact of these micro-credit operations. 18 However, even given that evaluating specific programs is difficult when financial markets are themselves developing at the same time as the economy, and that credit spreads to sectors and social groups that did not previously have access, the results were somewhat disappointing. In particular, the results did not show that these policies have an overwhelming effect on entrepreneurship or poverty reduction. If confirmed in other contexts, this would suggest that the initial evidence on rate of return differentials may be hiding differences between small and medium or large firms other than unequal access to the credit market.

Even if some kind of micro-credit interventions were proved to make a difference, then the second of the two questions posed earlier would arise: would the impact of interventions counteracting the unequal access to credit be the same if the scale of operations were increased? Further, would the general equilibrium effects dampen the impact observed in experiments limited in size? No control trial can answer these questions. We would have to rely on some kind of structural modeling.

<sup>17.</sup> See, for instance, De Mel *et al.* [2008] for the effect of distributing investment grants on small firms' profits in Sri Lanka.

<sup>18.</sup> This is no easy task. See Duflo *et al.* [2013], and references therein, on the evaluation of a micro-credit program in India.

A good illustration of the scaling up issue is provided in the field of education by the debate on the apparent discrepancy between the estimated rate of return in micro studies (i.e., the Mincerian model of earnings) and in macro panel cross-country growth regression studies. Apparently, aggregating up the effect of education estimated at the micro level suggested a much bigger effect than that actually observed at the macro level, once capital accumulation was taken into account. 19 There were good reasons for this. First, the micro estimate of the rate of return on education was obtained from a cross-section of individuals at the same point in time, whereas macro studies try to evaluate the effect of more people being educated over time. Thus, the micro estimate was essentially partial, and could change under the pressure of changes in the educational structure of the population. Cohen and Soto [2007] showed that the inconsistency between micro and macro was not as important as it seemed by improving the cross-country database used in macro studies. However, even if the average discrepancy across countries had been reduced, considerable disparities remain at the country level. The point is simply that the data necessary to estimate the relevant micro-based parameters (i.e., the return on the accumulation of education over time, taking into account the selectivity in people getting more education, or education of better quality) is essentially missing. Furthermore, note that, in this context, experiments on randomized samples over a few years would not deliver the right information. The time change in the Mincerian rate of return on education clearly depends on changes in the demand and supply of the various educational levels—possibly combined with occupation and experience—in the whole labor market, which is a macro object.

In summary, this review of empirical growth-inequality literature suggests caution is necessary. At the macro level, there is some evidence of a negative statistical relationship between growth and income inequality in cross-country five-year period panel data. However, the relationship is weak and its interpretation is ambiguous both in terms of the nature of the inequality that should be taken into account and the policy implications behind what is essentially a reduced-form model. At the micro level, there is abundant evidence of the inequalities, and their consequences, in the constraints that people unwillingly face in building their economic life. Yet, evidence on the impact of policies that aim to correct those inequalities at the aggregate level is difficult to obtain, for a variety of reasons. These include the limited availability of data for a structural approach and the natural limitations of the experimental approach.

If convincing theoretical arguments do exist about the various channels through which different types of inequality affect economic efficiency and growth, quantifying these relationships or the effect of potentially corrective policies is a daunting challenge, given the current statistical knowledge in these areas. Work on integrating the dimensions of this complex relationship is only beginning. In this regard, the WDR 2006 is an interesting landmark.

<sup>19.</sup> See for instance Krueger and Lindahl [2001] or Pitchett [2001].

### Equality of Opportunities and Income Redistribution in The World Development Report 2006

In the mind of its instigators, "inequality" rather than "equity" was to be the dominant theme of the 2006 World Development Report. Its goal was to challenge the dominant view, in the World Bank and elsewhere, that in aiming to reduce and possibly eradicate poverty, development strategies should focus mostly on aggregate growth. The main idea to be developed in the report was that the overall distribution of income within the population mattered more than just its mean for development, and should be a major concern for policymakers. That is, the degree of inequality of the income distribution affected poverty reduction in two ways: by reducing the share of the gain from growth actually accruing to the poorest of the population, and slowing growth itself.

Inequality was then the focus of a vigorous policy debate in development economics. On one side were those who thought it should be ignored, and poverty reduction should rely exclusively on the pursuit of aggregate growth. An iconic paper in that strand was the article by Dollar and Kraay [2002], titled "Growth is good for the poor", which suggested that, on average across country experiences, growth benefits the rich, the middle class, and the poor in the same proportion. On the other side of the debate were those emphasizing that the impact of growth on poverty depended on the growth of total income and its distribution and, thus, growth was not necessarily "pro-poor." 20

Within such a context, the WDR 2006 on "equity and development" tried to set the issue of inequality as the center of the development debate. Yet, its focus deviated somewhat from income inequality, focusing instead on the more general concept of "equity." In line with the preceding sections in this paper, it indeed quickly became clear to the authors that the growth-inequality literature had often been misread and did not necessarily imply that reducing the inequality of *income*, for instance through straight income redistribution, would accelerate growth. Thus, the emphasis was placed on the distribution of *opportunities* and on the policies to make this more equal. Referring to "equity" rather than "inequality" was meant to signal this shift of emphasis from the distribution of income, or economic outcomes in general, to opportunities. It was also meant to stress that the relationship between inequality and development goes beyond that between the Gini coefficient of income inequality and the rate of growth of GDP, as is summarily assumed in much of the empirical literature.

In hindsight, it appears that this shift of emphasis meant that not enough space was devoted to the distribution and redistribution of income per se.

<sup>20.</sup> See for instance Ravallion [2001], Ravallion and Chen [2003], or Bourguignon [2003]. See also the "poverty-inequality-growth triangle" in Bourguignon [2004].

Even though its role may be ambiguous as a determinant of economic growth, it is the case that most policies aiming to correct primary inequalities involve some redistribution in cash or in kind. Within a policy framework aiming to improve the equity of a society, the distribution of income and its redistribution remain key instruments. This will be the main theme of this section after reviewing the main messages of the WDR 2006.

## 4.1. The main messages of the "equity and development" WDR

Equity in the WDR 2006 was defined in terms of two basic principles. The first is "equal opportunities or that a person's life achievements should be determined primarily by his or her talents and efforts, rather than by predetermined circumstances such as race, gender, social, or family background." The second principle is the "avoidance of deprivation in outcomes, particularly in health, education, and consumption levels."

The first principle follows the literature on social justice and moral philosophy launched by Rawls, Sen, and others. It actually borrows much from Roemer [1998]. The second principle incorporates the consensual poverty reduction objective of the international development community. However, it may also be considered as referring to that specific "opportunity," which is to be free of the risk of falling into a poverty trap that would destroy most future opportunities. It may also be taken as the provision of some of the "primary goods" central to the argument in Rawls' [1971].

With such a definition, the key argument of the WDR 2006 was that equity matters more than income inequality for development, both intrinsically and instrumentally. More precisely, its main messages on the issue of inequality and development may be summarized as follows: "It is the inequality of opportunity, including severe deprivation, and not necessarily the inequality of outcomes (e.g., income) that primarily hinders growth and poverty reduction." As conceived in the report, equity included several of the channels reviewed earlier through which various types of inequality may negatively affect growth: unequal access to credit, land, education, healthcare, jobs, public decision making, security, a clean environment, and inequality in terms of inherited wealth, and of the social and family background in general. Although the correlation coefficient between income inequality and these various types of inequality—when they can be adequately measured—is generally positive, it is far from unity.

The theoretical argument in the report followed that of the literature summarized earlier in this paper. On the empirical side, the report leaned towards the body of partial indirect micro evidence. At the aggregate level, the emphasis was put on the role of institutions in development and the inequality of opportunities implicit in weak institutions and predatory elites. Interestingly, limited reference was made in the report to the mass of econometric literature on the aggregate relationship between growth and income inequality across countries. To be fully consistent with emphasizing equity

rather than income inequality as the key factor hindering growth, aggregate evidence should have been sought in cross-country comparisons using some measure of the inequality of opportunity and growth rates. However, as will be shown later, such an objective is still beyond the present limits of empirical analysis.

On the policy side, the main message of the WDR 2006 can be summarized by the following quotes from the Overview of the report:

"Public action should focus on the distributions of assets, economic opportunities, and political voice, rather than directly on inequality in incomes." (p. 3).

(The report) "presents evidence that the inequality of opportunity is inimical to sustainable development and poverty reduction..." (p. 3)

(It derives) "policy implications that center on the broad concept of leveling the playing field – both politically and economically." (p. 3)

"It makes the case for investing in people, expanding access to justice, land, and infrastructure, and promoting fairness in markets." (p. 4)

The first two quotes convey the idea that it is through the inequality of opportunity that the inequality of income can indirectly be corrected, and that it is mostly through opportunities that inequality has a negative impact on economic growth and poverty reduction. Hence, the recommendation follows in the last two quotes to level the playing field and to guarantee equal access to education of equal quality, credit, and infrastructure for all citizens. This equalizing of opportunities also had to address the economic and political institutions and the danger that they would be captured by a predatory elite. This is how "politically" must be interpreted in message (iii).

Beyond these strong general principles, policy experiences in various parts of the world to level the playing field were explored. Recommendations then fell into three categories: (i) policies aimed at tilting the accumulation of human capital or infrastructure or the development of credit towards those groups in the population that had limited access to them; (ii) policies intended to correct failures in the functioning of some key markets, such as land, labor, housing, or finance, which are responsible for unequal opportunities and slow growth; and (iii) policies that can make institutions, including justice and participation in public decision making, efficient and receptive to the interests of the least favored citizens.

The general message of the report meant a clear inflexion of standard macro-oriented development policies towards opportunity-poor people. It was well received and became rather consensual. However, at the same time, it did not really break with the modus operandi of bilateral of multilateral development agencies, despite its intent to deal with inequality, an issue that was most often ignored by these agencies. This was essentially because it did not recommend redistribution policies that would directly diminish income inequality. Instead, it insisted upon policies that would do so indirectly through a process of accumulation directed towards the poor and the correction of market failures that would also benefit aggregate growth. However, somehow, the report has not been explicit enough about the fact that equalizing opportunities also required some substantial income redistribution.

## 4.2. Redistributing income to equalize opportunities

The basic message in the WDR 2006 about the intrinsic and instrumental development value of the equality of opportunities was innovative in development circles. Here, the debate on growth and inequality tended to be cast in terms of the inequality of economic outcomes, including income, rather than opportunities. However, the policy implications in the report were less innovative. To a large extent, this was because the equalizing of opportunities was pursued through standard policy instruments, essentially the accumulation of human capital, the correction of market failures, and the straightening of institutions. These policies would impact positively on income-poor and opportunity-poor people. However, it was somewhat odd that shifting the focus of development strategies towards the equalization of opportunities would lead to apparently marginal changes in the policies to be implemented. It was also odd that relatively little was said about the financing of these policies and the indirect redistribution of income that could take place through this channel.

In revisiting these issues, the focus will be on human capital accumulation policies, which have gained much importance in overall development strategies throughout the developing world and in development agencies and convey most of the preceding interrogations.

Human capital can hardly be redistributed, since it is embedded in people. The only way its distribution may be equalized is by accumulating more in those population groups where it is lowest. However, it is not clear whether doing so obeys a redistributive motive or a pure aggregate accumulation motive. Investing in education in countries where many children have only a few years of schooling, while others go to school until the end of high school and beyond necessarily implies that the additional spending will be directed towards the first group. Generally, these children do not go to school because of a lack of resources in their families. Thus, the accumulation of educational capital at the aggregate level goes hand in hand with equalizing opportunities. This is why the recommendation to improve access to education in poor household groups did not seem new.

Actually, the right way to read the basic message of the WDR 2006 on human capital is somewhat different. Efficiency means that talents should not remain unexploited, so that children in less well-off families should not be prevented access to high school and higher education, while less talented children in well-off families enjoy such access. If the numbers of seats in high schools and colleges are limited, selection should be based on talent rather than economic resources. "Selection" is the key word here, which is why this argument applies with less strength at lower levels of education, where economic efficiency means all children complete some basic schooling.

The equivalent argument in the case of the imperfect capital market argument shown in figure 1 is perhaps simpler. Providing credit to *P* so that (s)he can undertake his/her investment project may be seen as part of the general

policy of physical capital accumulation. However, the point is that it provides a higher return than the investment that was implicitly financed by the money taken from R and, therefore, justifies a stronger accumulation effort.

In the two previous examples, equalizing opportunities justifies spending more on the accumulation of human and physical capital than would seem adequate in view of the current rates of return. Alternatively, it requires shifting investment projects from the unconstrained to the constrained groups of economic agents. In both cases, this requires using taxation to provide the necessary resources for investing in the constrained segment of the economy. In figure 1, x must be spent today so that P can undertake his/her investment project. In the case of education, new students have to be subsidized, or the quality of the schools they attend must be improved. In other words, equalizing opportunities most often goes through taxation and public spending. The main point in the WDR 2006 that the equality of opportunities rather than that of income matters for economic growth and development is well taken, but promoting the equality of opportunities generally requires a substantial redistribution of income.

The fact that equity-enhancing policies require financing through taxation raises a key issue in terms of economic efficiency. On the one hand, equalizing opportunities may result in more efficiency or faster growth. However, raising taxes may have the opposite effect by distorting market incentives in terms of labor supply, savings, or entrepreneurship. Thus, the issue arises of the overall balance of these two effects in terms of efficiency. Furthermore, there is an issue of equity, because additional taxes raised in a regressive way may affect the lower part of the income distribution, making deprivation more severe in some household groups. In the case of human capital policies directed towards poor families, for instance, the Conditional Cash Transfer programs, which transfer income to poor families on condition that they send their children to school, the time dimension is important. The negative impact of taxation on efficiency will be felt immediately, whereas the positive effect of more and better distributed human capital will appear much later when the children educated now leave school and enter the labor market. Thus, the net effect of the overall policy will depend on the time discount rate being used.

Thus, the calculation of the overall effect of such equity-enhancing human capital policies is a rather complex task, and it is not certain that all the information needed for the calculation is available. In this regard, the WDR 2006 warned that a straight cost-benefit analysis of such policies would tilt the estimation of their net effect downward. This is essentially because the benefit from the equalizing of opportunities and the efficiency cost of additional taxation are not taken into account in this kind of calculation. The standard (partial) incidence analysis of taxation and public spending on the distribution of income<sup>21</sup> does not address these issues. The particular case of opening access to secondary or higher education to a population group who could not afford it previously owing to liquidity constraints should presumably yield an economic return higher than the marginal rate in the

<sup>21.</sup> As reviewed, for instance, in Bourguignon and Pereira [2003].

rest of the economy. However, estimating this additional return is a difficult task.

As taxation is needed to finance those equity-enhancing policies that seek to equalize access to human capital accumulation, the issue arises of the form it should take and, in particular, its progressivity. A policy often recommended in developed and developing countries is that tax systems should involve broad bases and low tax rates to generate the necessary receipts while minimizing distortions.<sup>22</sup> This seems somewhat contradictory, given what we know from optimal taxation theory. It is true that this theory is based on social welfare functions where individual weights decline with the level of income. However, generalizing the social welfare function to make it consistent with the above definition of equity clearly makes things more complicated. If only opportunities mattered, and not income, then the case for progressivity would fall apart. However, because no material deprivation is one of the two equity principles, equity definitely implies different welfare weights for deprived people and others and, thus, some progressivity of the tax system.<sup>23</sup> With regard to opportunities, the progressivity of the tax needed to finance the correction of the inequality of opportunities will depend on the joint distribution of income—or, more precisely, the individual abilities that, together with opportunities, determine individual incomes—and opportunities. Yet, given the limited existing empirical knowledge of the distribution of opportunities, it is difficult to say much about this.24

These considerations on the degree of progressivity of taxes to finance a more equal distribution of opportunities must not hide that, in many countries, there are some regressive patterns in public spending, the removal of which would have little effect on work or risk-taking incentives. Examples include recovering the cost of higher education for children from well-off families, while granting scholarships to students coming from more modest households, substituting food or energy subsidies with targeted cash transfers, cutting top pensions in case of a deficit in a pay-as-you-go pension system, and so on. These measures free resources at the expense of the upper part of the income distribution, which can be mobilized to improve opportunities at the bottom of the distribution by spending on education, health, infrastructure, credit to SMEs, and so on.

Until now, the link between income redistribution and opportunities has been seen as going from raising revenue to finance public spending targeted at dynamically equalizing opportunities. However, more directly, current income inequality generates future inequalities of opportunity. A low current income in a family prevents precautionary savings that would protect it from falling into a poverty trap in the future, and limit opportunities for children. The current distribution of income among households is a clear

<sup>22.</sup> See for instance OECD [2010].

<sup>23.</sup> For example, the "charitable conservative" specification of the optimal tax model in Atkinson [1990].

<sup>24.</sup> Cast in terms of the familiar Mirrlees [1971] model, the introduction of opportunities in the optimal redistribution model could be seen as equivalent to making the distribution of abilities partly endogenous. Tax receipts could be used either to reduce poverty or to increase the potential earnings of people in the bottom part of the ability distribution.

determinant of the inequality of opportunities faced by children. For instance, the Human Opportunity Index developed by Paes de Barros *et al.* [2009] is based partly upon the probability that a child will reach some specific grade in school, which depends, inter alia upon the per capita income in the family. Thus, equalizing the income distribution would automatically increase this Human Opportunity Index.

Another channel through which the inequality of income affects the inequality of opportunities is the concentration of political power in the hands of a few elite and, possibly, through low-quality institutions. Is there any evidence of such a link from income concentration to political power concentration? It is difficult to say because of the obvious two-way causality between these two phenomena and the vicious circle they create.

An interesting attempt was made by Chong and Gradstein [2007] to disentangle this causality relationship between income inequality and the guality of institutions using time series analyses and Granger causality techniques on a panel of developing countries. Not surprisingly, they found that causality goes in both directions. However, it turns out to be much stronger in the direction of income inequality causing weak institutions than the other way around. This kind of cross-country analysis is never fully convincing, especially in this case where causality tests are based on the time series properties of variables with typically little time variation. In addition, the imprecision of the data on the various dimensions of institutional quality and income inequality is likely to bias any regression estimates. In this respect, it is worth stressing that the true level of inequality in most developing countries is likely to be severely underestimated, because top incomes are under-represented and/or under-reported in standard household surveys. Yet, it may be precisely at that level that the vicious circle of weak institutions and high inequality operates.

If we add to these links between the distribution of incomes and that of opportunities the direct cost of social tensions arising from excessive income inequality in terms of economic efficiency and possibly economic growth, it is clear that an exclusive focus on opportunities to analyze the link between inequality and development would miss an important part of the issue. In this regard, the WDR 2006 may not have insisted enough on the complementarity between the various types of inequality, including income inequality.

#### 5. Where to from here?

The WDR 2006 was an important step in the policy-oriented analysis of the relationship between inequality and development. Even though it may not have put enough emphasis on the strict income dimension of that relationship, it contributed to broadening the scope of the analysis, integrating into it the deep insights provided by recent theoretical work in this area.

Theory shows that, through different channels and under different forms, inequality has the capacity to hinder development. However, empirical evi-

dence that would permit us to quantify these effects and help us design appropriate policies to promote equity and faster development is weak and, in some cases, inadequate. In particular, the reduced-form empirical work that suggests a negative correlation between income or consumption inequality and growth across countries or periods lacks robustness, and does not necessarily point to clear lines of action.

Of course, equity is worth pursuing per se, but maybe not at all costs. The important point suggested in recent literature is that the economic benefits of equity-enhancing policies may well exceed their costs. Obtaining more precise estimates of these benefits and costs would help greatly in explicitly integrating an equity dimension into development strategies and into the decision process behind them. Is this possible?

The measurement of the inequality of opportunities has increasingly attracted interest, partly as a consequence of the WDR 2006. However, results are still limited. Generally, existing measures rely on the share of the inequality of individual earnings as explained by personal circumstances, such as ethnicity, religion, region of birth, and family background. International comparisons have been undertaken on this basis that point to a positive correlation with the inequality of income. Some attempts have also been made to test whether these measures were negatively correlated with economic growth. For instance, Marrero and Rodriguez [2013] found a positive relationship across American states, whereas Ferreira et al. [2014] found no statistically significant correlation in a cross-section of countries. The problem with this approach is that the measurement of opportunities is essentially incomplete and not necessarily comparable across countries. Observation homogeneity is probably the reason why better results were obtained in the case of the American states than in the study across countries.25

It would be useful to have more complete and more comparable measures of the inequality of opportunities. There is current research in this direction, but the availability of data remains an obstacle. On the other hand, focusing on the aggregate relationship between the inequality of opportunities and economic growth would have the same difficulty as using income inequality. In other words, a reduced-form specification does not permit us to derive clear policy implications. Parents' education, occupation, and income may well affect the inequality of income among income earners and the rate of growth of the economy. However, this will not tell us much about the the kinds of policy able to neutralize them. Reduced-form and aggregate approaches to the issue of inequality and growth can, at best, give evidence of a relationship. However, they do not inform us about the mechanisms behind the relationship or the policy instruments likely to influence it.

What to do then? Theory, microeconomic evidence, and aggregate structural modeling are the bases on which a more solid understanding of the inequality-growth relationship must be built.

<sup>25.</sup> See also Egan [2014], who studies the evolution of the inequality of opportunity across American states and over time.

Theory is quite persuasive that unequal access to income-generating or income-enhancing facilities is the key mechanism through which inequality generates inefficiency and income inequality. It might be difficult to measure the loss of efficiency owing to these various types of inequality, but monitoring them as precisely as possible would provide a useful way to check that progress is being made towards a more equitable and efficient economy. It would also broaden the measurement of inequality and permit us to analyze in more depth their relationship with development. Much is to be done in this area. In some cases, the information is readily available but under-utilized, as in the case of gender inequality in education, earnings, or occupation, which could easily be monitored through labor force or household surveys. Likewise, data on the distribution of land or access to basic infrastructure, including schools and healthcare facilities, should not be difficult to gather over time and across countries. Things are more difficult for other relevant dimensions of "unequal access," such as credit, justice, or security.

Corrective policies have to be envisaged in these various dimensions of inequality. Some have been subject to much investigation and experimentation, others less so. It is not clear that policies are always examined from the right perspective, though. For instance, educational policies are envisaged in terms of their human capital accumulation aspect more than their selection aspect. Of course, that all children go to primary and basic secondary school or have access to schools of uniform quality is of primary importance for both growth and poverty/inequality reduction. However, as mentioned earlier, the inequality-efficiency nexus is also very much about whether the most talented children rather than the children of well-off families have access to schooling after basic secondary school. This pure selection aspect of the demand for schooling policies has been studied far less. The same can be said of credit rationing. Much of the analytical work in this area of development economics centers on micro-credit provided to the poorer segment of the population. Yet, as suggested in connection with figure 1, the inequality-efficiency nexus may well lie higher in the income scale. From that point of view, direct information on credit rationing, especially among small and medium enterprises, is becoming available from firm surveys, and could be valuable in evaluating the effectiveness of credit market-oriented policies in promoting equality and efficiency.

In those areas, experimenting with innovative policies aimed at reducing inequality in terms of access to and the quality of facilities such as education, healthcare, or finance is of primary importance. Much progress has taken place in this area. However, the issue of the external validity of these experiments and their scalability is still to be tackled more systematically than it is at present. This requires a more structural approach to the design and evaluation of experiments.

Unequal access and the way institutions function in a given economy, particularly the possible capture of some facilities by an elite, as well as corruption practices may be among the most important factors responsible for inefficiency, slow development, and inequality in economic outcomes. This is a difficult area for policy analysis, as many policy levers may be captured by the elite and the political will for reform may simply be absent.

However, this is not always the case. Many countries are fighting corruption at the local level and interesting initiatives, mostly aimed at promoting more transparency, have been and are being tried. This is an extremely important research area, even though the issues of external validity and scalability are particularly challenging.

Of course, income inequality per se should not be ignored, as it is part of the chain linking inequality in a general sense, efficiency, and growth. This is especially true through its influence on the inequality of opportunities for subsequent generations and possibly through the social tension and disruptions it may trigger in some extreme circumstances (*i.e.*, the "endogenous redistribution"). This perspective calls for two major observations.

First, measurement must be improved, especially in the upper part of the distribution. In developed and a few emerging countries, the measurement of the top income level is now emphasized, as well as their role in the observed increase in income inequality. It is most likely that the underrepresentation of top income earners in survey data is still more severe in most developing countries. Yet, this is precisely that part of the income distribution that most contributes to the actual (as opposed to observed) inequality in those economies and their potential inefficiency. From this point of view, progress in measurement is essential, but also challenging.

The second observation refers to the endogenous redistribution channel. One important issue here is the threshold beyond which inequality, in one or other form, leads to social tension or disruptions that may generate major economic losses. Here, the only possible approach is to use case studies based on observations of the joint evolution of a set of inequality indicators and the political and social climate. Starting from observed political or social disruptions and major redistributive reforms, the issue is whether they may be traced back to some noticeable measured increase in some dimensions of inequality. However, the difficulty of this line of research and the likely ambiguity of the conclusions cannot be underestimated.

#### 6. Conclusion

Progress has been made over the last 20 years in analyzing inequality in developing countries, as well as understanding its links with the overall functioning of the economy and its negative effect on economic efficiency and growth. However, much remains to be done. The review presented here of recent literature on the growth-inequality relationship shows clearly that the weak link between the two is on the side of empirical evidence. Several theoretical channels linking inequality and development have been identified and analyzed persuasively. What is missing is the data that would permit us to give evidence on the strength of these channels and to reflect on the most appropriate corrective policies.

More systematic monitoring is needed of the various dimensions of inequality that may affect the overall pace of development. At the same

time, experiments need to be conducted to evaluate the strength of these effects and to design effective interventions. It is unlikely that much evidence will be provided in the near future from aggregate cross-country analyses. Again, this will need to be revisited once appropriate data are available.

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- 662 \_\_\_ Revisiting the Debate on Inequality and Economic Development
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